

**Technology for all:  
A guide to solving the puzzle**

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Design dedicated to Connor and Hollyn

## **Technology for All: A Guide to Solving the Puzzle**

This is a publication developed by the North Dakota Interagency Program for Assistive Technology (IPAT) which supports people with disabilities, including those experiencing the effects of aging, who require assistive technology devices and/or services.

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# **Technology for All: A Guide to Solving the Puzzle**

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Dear Friend:

Technology For All: A Guide To Solving The Puzzle has been written in response to a statewide need for technical assistance in the development of comprehensive assistive technology plans. Statewide surveys of assistive technology practices revealed an absence of planning in this area throughout North Dakota. For example, surveys revealed that no comprehensive assistive technology plan existed in any special education unit. Although directors and administrators were willing to develop such a plan, there was no technical assistance available to help them identify the critical components to address in the area of assistive technology planning.

IPAT of North Dakota initiated a pilot project, Partnerships to Increase Local Assistive Technology Services (PILATS), designed to provide a replicable model for assistive technology plan development. Two special education units, one rural and one urban, were selected to participate. Technical assistance, training, and materials were provided to each participating unit for one year to support them in their efforts to develop assistive technology plans. An analysis of their experiences provided critical information in the development of this guide. IPAT appreciates and extends gratitude to the Souris Valley and Grand Forks Special Education Units for their involvement in this project.

Although the laws regulating responsibilities for assistive technology have been in existence for many years, surveys revealed the lack of familiarity with the field of assistive technology results in uncertainty about how to embed assistive technology within long established programs. Understanding the critical elements to address when planning for assistive technology equips programs to fit these new elements within familiar planning processes. It is the intent of this guide to identify those elements.

Within this guide are checklists, worksheets, tables and other resources to assist in analyzing and designing a program. Please feel free to make copies of any portion of this guide for your use with appropriate credit given to the sources.

Sincerely,

Judie Lee  
IPAT Director

## **All Means All**

Technology makes all lives easier. For people with disabilities, however, assistive technology (AT) makes things possible. AT plays a powerful role in maximizing the independence of individuals with disabilities. It is a key to continued and increased participation at school, work, home and play.

**“Amy goes to school in a small town. She uses a special keyboard for the computer so she can do her written work. The computer is used by her classmates, but when Amy uses it, a different keyboard is attached. I feel lucky to be a part of a system that has a way to make sure that even students in small outlying schools get the equipment they need.”**

Mike, LD Teacher

## FORWARD

Assistive technology (AT) includes adapted toys, computer access, seating systems, powered mobility, augmentative communication devices, special switches, magnification systems, environmental control systems, amplifiers, and thousands of commercially available or individually adapted devices. These AT solutions provide opportunities for individuals with disabilities to learn, compete, work and interact with family and friends.

Selecting and purchasing technology that is designed for all is both responsive and cost effective. The development and implementation of a comprehensive assistive technology plan will assure ongoing assistive technology solutions for individuals for whom the system is responsible.

A system whose primary responsibility is services for individuals with disabilities requires an assistive technology plan tailored accordingly. A system with diverse responsibilities for multiple populations should include assistive technology as a component of their comprehensive technology plan. School systems, for example, are being asked to develop technology plans and need to consider accessibility for all students. Therefore, assistive technology considerations need to be included within the school technology plan.

*Technology for All: A Guide to Solving the Puzzle* provides the pieces that fit **Nine Critical Components** together for a comprehensive technology plan. These components can comprise a stand-alone assistive technology plan or can be integrated within a system's overall technology plan. It is intended for use by school systems, rehabilitation centers, and other entities providing direct services to people with disabilities.

## **Preparation for Planning**

A vision without a plan remains only a vision.

**“Since our school system has initiated an Assistive Technology Plan, I know what my responsibilities are and have been provided training and resources to help me meet the needs of my students. I knew there was something out there, but I just didn’t know what or how to fit it into what I do. Before the plan I did not know where to start and didn’t feel like I had direction from my administrator.”**

Deb, Special Education Teacher

## Preparation for Planning

Planning takes time, the rewards are not immediate, and the resulting change is challenging. Planning for assistive technology requires management of complex change. Setting the stage for planning is critical. Planning requires vision, skills, incentive, resources, and an action plan.

If one plans without a vision, confusion results; without skills, anxiety occurs; without incentives, change is gradual; without resources, frustration reigns; and without an action plan, false starts happen. Knowing these things will take place in the absence of a plan provides incentive to commit effort to the planning phase.

The individual providing the leadership for planning must be able to visualize what is possible with an assistive technology plan and communicate the vision.

Effective planning committees understand that planning assures:

- \* proactive decision making,
- \* accurate budgets,
- \* effective implementation of services,
- \* systematic delivery of services,
- \* consistent interpretation of policies and practices,
- \* joint understanding of and commitment to system's responsibilities by consumers and staff,
- \* equipped service providers, and
- \* accurate and systematic data from which to measure outcomes.

Mutual acceptance of these concepts will facilitate meeting the demands of the planning process.

**Getting Started:  
Assistive Technology Committee**

“Teams can develop fragments of ideas into positive change.”

**“Our Assistive Technology Committee started out with a bang. Every member brought good ideas. We developed a mission statement. We assessed our current practices and wrote some goals. We assigned jobs and accomplished quite a bit in the committee. When we had to start assigning responsibilities and committing staff time in order to implement some of our plan, things really got tough. Fortunately, our administrators didn’t give up; they continued to support our release time and helped us finish writing the plan. Our Committee continues to meet regularly and oversees the implementation efforts.”**

Ron, Technology Coordinator

## Getting Started: Assistive Technology Committee

The Assistive Technology Committee is the means by which the puzzle pieces will be designed and put together. Selecting the right combination of people with varied skills, perspectives, and with “can-do” attitudes will play a large part in the success of the planning process. The purpose of the Assistive Technology Committee is to assess existing assistive technology practices within the system and, based upon these results, to write their unique plan for designing an assistive technology program.

The **administration**, when developing the assistive technology committee should:

- *Recruit diverse committee membership.*
- *Obtain representation from the different professional fields within the system, consumers, administration, and related services.*
- *Select members who have an interest in technology, have the respect of their peers, are team players, and portray visionary and leadership skills.*

An example of diverse membership from a school system could include parents, elementary, middle and high school teachers, related service personnel, paraprofessionals, administrators, and general education technology specialists.

The **roles and responsibilities** of the Assistive Technology Committee need to be defined with consideration given to:

- *Outlining the authority of the committee.*
- *Establishing the leadership selection and membership rotation processes.*
- *Defining task assignments and time commitments.*
- *Developing reporting methods.*

The Assistive Technology Committee will complete a program analysis by investigating the following **Nine Critical Components**: Administrative Support for Assistive Technology, Program Analysis, Guiding Documents, Assistive Technology Devices, Professional Growth, Participation of the Individuals and Family Members, Meeting Individuals’ Unique Needs, Outcome Measures, and Fitting the Pieces Together.

Based upon the results of the program analysis, the Committee will develop and write a comprehensive assistive technology plan addressing the same **Nine Critical Components**.

## Overview of the Plan's Critical Puzzle Pieces

*"Lack of focus is the enemy of achievement, and writing a well-defined plan provides focus. Plans are required to focus our resources, our efforts and our imagination."*

**"I can't believe we now have our own equipment loan library. We always thought there wasn't enough money to have an equipment library. It used to be equipment was purchased for a particular child and when the child left, the equipment went on a shelf. Teachers in other buildings didn't know it existed. When the Assistive Technology Committee got started, they figured out a way to keep track of all the equipment and we now have a list, know where it is located, and can just check it out for our students."**

Peggy, Preschool Teacher

## Overview of the Plan's Critical Puzzle Pieces

The design of an assistive technology program plan requires consideration of numerous areas. Nine interdependent components have been identified within the planning stages of program development. They will be referred to as the Nine Critical Components (NCC) within this guide. The following is a description of each Critical Component's purpose.

- 1. Administrative Support for Assistive Technology:**  
Administrative support in plan development and implementation establishes an atmosphere and mechanism to provide comprehensive and ongoing assistive technology solutions.
- 2. Program Analysis:**  
Strengths and needs of current assistive technology practices are identified through program analysis. A program analysis will show where planning needs to start.
- 3. Guiding Documents:**  
Writing guiding documents will establish belief statements upon which policies and procedures will be adopted for the inclusion of assistive technology services within the system.
- 4. Assistive Technology Devices:**  
Addressing assistive technology devices within plan development creates a mechanism for cost-effective purchasing, coordination of inventories, and consideration and utilization of all types of equipment.
- 5. Professional Growth:**  
A professional growth plan provides a mechanism for systematic training in the areas of assistive technology necessary to implement a system's comprehensive assistive technology plan. It addresses the needs of new and experienced staff.
- 6. Participation of the Individuals and Family Members:**  
Consumer participation provides a critical perspective in plan development and implementation which increases successful assistive technology outcomes.
- 7. Meeting Individuals' Unique Needs:**  
Systematic procedures for identification, evaluation, and individual program planning for assistive technology needs of individuals will assure equitable access to assistive technology solutions.
- 8. Outcome Measures:**  
Outcome measurement and reporting systems track person-specific,

program, and system information. This provides a mechanism for monitoring and improving the quality of assistive technology services.

**9. Fitting the Pieces Together:**

The interdependent pieces that have been designed need to come together to form a comprehensive written assistive technology program plan.

Nine Critical Components have been identified as necessary for a comprehensive plan. Fundamental elements to include in each component have also been identified. Analyzing the same components in the existing program simplifies the process and maintains consistency.

The following table entitled ***Nine Critical Components for Assistive Technology Plan Development*** provides recommendations which are not all-inclusive but are intended to serve as a guide in program analysis and plan development.

**Nine Critical Components for Assistive Technology Plan Development**

**I. Administrative Support for Assistive Technology**

- Commitment to assistive technology
- Knowledge of policies and procedures
- Meeting staff needs
- Budget planning
- Interagency collaboration

**II. Program Analysis**

- Administrative support for assistive technology
- Program analysis process
- Guiding documents
- Assistive technology devices
- Professional growth
- Participation of the individuals and family members
- Meeting individuals' unique needs
- Outcome measurement
- Fitting the pieces together

**III. Guiding Documents**

- Mission statement
- Belief statements
- Policies and procedures

**IV. Assistive Technology Devices**

- Inventory
- Equipment management

- Budget
- Range of equipment
- Staff responsibilities

**V. Professional Growth**

- Analysis of program needs
- Survey of staff AT knowledge
- Inclusion of AT in professional growth plan
- Budget
- Collaboration
- Evaluate impact

**VI. Participation of the Individuals and Family Members**

- Acknowledge consumers as decision-makers
- Include in planning
- Include in training
- Consumer networks
- Include in program monitoring

**VII. Meeting Individuals' Unique Needs**

- Protocol for initial identification
- Protocol for assessment
- Meet legal requirements

**VIII. Outcome Measures**

- Individual outcomes
- Assistive technology program outcomes
- System outcomes

**IX. Fitting the Pieces Together**

- Identify existing components
- Design goals for missing components
- Integrate critical components
- Write comprehensive AT plan

## **Administrative Support for Assistive Technology**

**"I really liked working with assistive technology and invested my own time learning about it. I became the so-called expert in my building and more and more of my colleagues came to me for help. It became a problem because my other job responsibilities had not changed. I was frustrated and so were my colleagues. When our system wrote a technology plan, responsibilities were defined, and my job description changed. Now I have time allocated in my daily schedule to provide the assistive technology assistance to my colleagues."**

*Don, Assistive Technology Coordinator*

***Leaders not only manage people and resources, but potential.***

## **Administrative Support for Assistive Technology**

Administrative support in the development and implementation of a comprehensive assistive technology plan is necessary to establish a system-wide atmosphere and mechanism to provide comprehensive and ongoing assistive technology solutions.

The role of management is to insure all the puzzle pieces are designed and fit together. With these in place, there is a mechanism to provide quality assistive technology services. Administrative responsibilities include: a commitment to assistive technology, knowledge of policies and procedures governing assistive technology, meeting staff needs, budget planning, and capitalizing on opportunities for interagency collaboration.

### **The administration will provide assurances of their commitment to:**

- The potential of technology to help persons with disabilities achieve maximum independent functioning.
- The promotion of consumer involvement in program development and implementation.
- Ongoing identification and reduction of barriers to assistive technology devices and services.

### **The administration will demonstrate sufficient knowledge and understanding of policies and procedures to:**

- Implement federal and state assistive technology policies and regulations.
- Develop and adopt local assistive technology policies and procedures.
- Monitor compliance at all levels.

### **The administration will accept responsibility for:**

- Staff training needs.
- Recruitment of personnel with assistive technology skills.
- Assignment of staff responsibilities.
- Monitoring and managing evolving staff needs.

### **The administration will address assistive technology within the budget by:**

- Aligning funding resources to support implementation of the plan.
- Actively recruiting funds from other sources.

**The administration will engage in interagency collaboration for:**

- Training.
- Funding.
- Transition.
- Equipment exchanges.
- Other.

## **Program Analysis**

**“During our program analysis, I discovered people in our system had expertise that I didn’t know about. I asked them why no one knew about their expertise and they said they didn’t think of themselves as experts. I now have a whole pool of people I can call for help and their skills can be utilized when we implement our plan.”**

**Carol, AT Committee Member**

***Think about multiple uses.***

***A dime can be used to turn a screw.***

***A pencil can become an axle.***

***A cup can be used as a planter.***

## Program Analysis

Knowing what resources exist within a system enables more effective utilization of those resources when adding or expanding programs. A program analysis will show where program planning needs to start. For instance, guiding documents or a staff development plan may be identified which can be revised to include assistive technology language.

The analysis can be accomplished in a variety of ways. The following **Program Analysis for Assistive Technology (PAAT)** is one example of a tool which has been developed to assist with the analysis process. This particular tool is designed to identify existing resources in nine primary areas within a system.

### PROGRAM ANALYSIS FOR ASSISTIVE TECHNOLOGY

I. ADMINISTRATIVE SUPPORT FOR ASSISTIVE TECHNOLOGY	YES	NO	COMMENTS
A. The administration is committed to the potential of technology to help persons with disabilities achieve maximum independent functioning.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
B. The administration is committed to the promotion of consumer involvement in program development and implementation.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
C. The administration is committed to ongoing identification and reduction of barriers to assistive technology devices and services.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
D. Federal and state assistive technology policies and regulations are implemented.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
E. Local assistive technology policies and procedures have been adopted.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
F. Compliance at all levels is monitored.	<input type="checkbox"/>	<input type="checkbox"/>	_____
G. The program recruits personnel with assistive technology skills.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
H. Staff responsibilities for assistive technology are clearly identified.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____

	YES	NO	COMMENTS
I. Program monitors and manages evolving staff needs.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
J. Funds are allocated to support implementation of the plan.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
K. The program seeks interagency collaboration for training, funding, transition, and equipment exchanges.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____

**II. PROGRAM ANALYSIS**

A. The program has an assistive technology committee with diverse membership.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
B. The assistive technology committee has defined roles and responsibilities.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
C. The assistive technology committee has completed an assistive technology program analysis in these areas: * Administrative support for AT * Program analysis process * Guiding documents * Assistive technology devices * Professional growth * Participation of the individuals/family members * Meeting individuals' unique needs * Outcome measurement * Fitting the pieces together	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
D. The assistive technology committee has developed and written a comprehensive assistive technology plan.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____

**III. GUIDING DOCUMENTS**

A. The program has a written mission statement which defines the continuing assistive technology responsibility of the system.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____
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	YES	NO	COMMENTS
ages and disabilities.			_____
I. Collaborative agreements exist between entities to insure individuals maintain uninterrupted access to assistive technology if and when they transition between entities.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____

**V. PROFESSIONAL GROWTH IN ASSISTIVE TECHNOLOGY**

A. A comprehensive analysis of the program's assistive technology personnel needs has been completed.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
B. The program has defined assistive technology knowledge/skill levels.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
C. An inventory exists of staff's assistive technology knowledge/skills.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
D. Assistive technology is included in the system's professional growth plan. Areas include: * Policy * Funding * Assistive Technology Devices * Assessment * Implementation Strategies * Administration * Advocacy	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____
E. The program budget includes funding for assistive technology training identified within the assistive technology plan.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
F. The program is engaged in collaborative efforts with other entities to support assistive technology training.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
G. A process exists for funding and identifying assistive technology consultant services.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
H. The program has a process in place to	<input type="checkbox"/>	<input type="checkbox"/>	_____

	YES	NO	COMMENTS
obtain, provide, and maintain current assistive technology information.			_____ _____
I. The program maintains a resource center of assistive technology publications and resource materials.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
J. A mechanism is in place to evaluate the impact of assistive technology training.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____

**VI. PARTICIPATION OF THE INDIVIDUALS AND FAMILY MEMBERS**

A. The program recognizes the importance of consumer participation within each area of the assistive technology program.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
B. A mechanism is in place for systematic inclusion of consumers in educational opportunities.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
C. A mechanism is in place for systematic information dissemination to consumers regarding assistive technology issues.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
D. The program serves as a resource to network consumers interested in and/or using assistive technology.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
E. Consumers participate in program monitoring and evaluation.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____

**VII. MEETING INDIVIDUALS' UNIQUE NEEDS**

A. The program has adopted an assistive technology screening tool which provides a systematic method to screen for potential assistive technology solutions for a variety of needs.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____
B. The program implements a formal referral mechanism for the identification of potential assistive technology users.	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____



	YES	NO	COMMENTS
* Evolving growth potential			_____
* Other			_____
C. There is a method to measure the following assistive technology program outcomes:	<input type="checkbox"/>	<input type="checkbox"/>	_____
* Staff knowledge levels			_____
* Building level implementation			_____
* Physical access to equipment			_____
* Job descriptions			_____
* Work distribution			_____
* Other			_____
D. There is a method to measure the following changes within the system:	<input type="checkbox"/>	<input type="checkbox"/>	_____
* Policies			_____
* Hiring practices			_____
* Budget			_____
* Personnel management			_____
* Other			_____
E. The program has procedures for annual review of assistive technology devices and services.	<input type="checkbox"/>	<input type="checkbox"/>	_____
			_____

**IX. FITTING THE PIECES TOGETHER**

A. A comprehensive assistive technology plan exists which addresses the following elements:	<input type="checkbox"/>	<input type="checkbox"/>	_____
* Administrative Support for Assistive Technology			_____
* Program Analysis			_____
* Guiding Documents			_____
* Assistive Technology Devices			_____
* Professional Development in Assistive Technology			_____
* Participation of Individuals and Families			_____
* Meeting Individuals' Unique Needs			_____
* Outcome Measures			_____
B. There is a mechanism in place to modify the comprehensive assistive technology plan in response to results of outcome measures and monitoring.	<input type="checkbox"/>	<input type="checkbox"/>	_____
			_____
			_____

Based upon the results of the program analysis, goals and action steps will be written to address those elements not in place within the system. When task forces and/or subcommittees are utilized, diverse representation should be maintained to ensure a broad perspective.

The following worksheet entitled, **Critical Component Action Steps**, has been designed to assist in the process of writing these goals and action steps. The worksheet serves as a reminder to identify key players, timelines, and outcome measures for each action step required to accomplish a goal.

### **Critical Components Action Steps**

**Critical Component** Guiding Documents

**Goal** To write guiding documents upon which policies & procedures will be adopted for the inclusion of AT services within the district.

**Action Step 1** Obtain and analyze district's existing mission statements. If needed, modify to include AT. Present proposed changes to district's governing board.

**Key Players:** Subcommittee: principal, parent, related services provider, general ed teacher

**Timeline:** 2 months

**Outcome Measures:** District's mission statement(s) reflect assistive technology for all.

**Action Step 2** Define content of a district AT guide which reflects state and federal laws and best practices.

**Key Players:** Subcommittee: special ed administrator, AT coordinator, speech pathologist, parent, classroom teacher, special education teacher

**Timeline:** 1 month

**Outcome Measures:** Table of contents designed for district AT  
guidelines

## Guiding Documents

**“I am excited that the Department of Public Instruction is developing guidelines for assistive technology because each of us is interpreting our responsibilities for AT differently. The extent of AT services depends on which school and teacher are involved which isn’t very fair.”**

Linda, Elementary Teacher

***“You can’t get the right answer if you’re asking the wrong question.”***

## Guiding Documents

Writing guiding documents will establish belief statements upon which policies and procedures will be adopted for the inclusion of assistive technology services within the system. Documents may already be in place which can be modified to include assistive technology language. Others may need to be designed specifically to address assistive technology.

A program's foundation is based upon its mission statement, its belief statements, and its policies and procedures.

A **mission statement** will define the continuing responsibility undertaken by the system with the clarification that assistive technology is included as an integral part.

*Example of a Mission Statement:*

To establish and sustain a comprehensive assistive technology program that will increase, maintain, and improve functional capabilities of all individuals with disabilities.

**Belief statements** will provide the foundation upon which policies and procedures will be developed and evaluated and will become a public declaration of the system's convictions upon which programs are based.

*School Example:* Assistive Technology shall be available to all students who require such technology in order that they may receive an appropriate educational program.

*School Example:* Assistive Technology shall support student participation in learning experiences in the least restrictive environment.

*Rehabilitative/Vocational Example:* Interagency cooperation is essential for individuals to access assistive technology devices and services across all environments.

*Rehabilitative/Vocational Example:* Each entity shall develop, adopt, and implement assistive technology policies and procedures which address evaluation, consultation, and services.

**Policies and procedures** will insure access to assistive technology devices and services.

*Example:* Assistive technology can be a related service such as audiology, physical therapy, or speech if it is necessary for the individual to benefit from his or her program.

## Assistive Technology Devices

***“I got very tired doing my school work on the computer, but it was the only way I could write because of my muscular dystrophy. My parents thought there must be a way to make it easier but the school thought it would cost too much. One day an assistive technology consultant came to see another kid and my computer teacher talked to her. We found out that the computers in our lab had built-in features that saved keystrokes and increased my speed. She also recommended a mini keyboard. The little keyboard wasn’t too expensive so the school bought it. It is hard to believe that the things to make using the computer easier were in our computer lab all along.”***

Chad, High School Student

***“Technology can be anything from a modified drawer handle to a computer. Technology makes thing easier for everyone and makes things possible for people with disabilities.”***

Bob, Individual with a Disability

## Assistive Technology Devices

Addressing assistive technology devices within plan development creates a mechanism for cost-effective purchasing, coordination of inventories, and consideration and utilization of all types of equipment.

First, it is necessary to conduct an inventory of existing assistive technology equipment. Upon completion of the inventory, a system to store, track, maintain, and circulate the equipment should be established. It is important to have a complete picture of what exists, where it is located, its working condition, and how to access it within the system before deciding what needs to be purchased.

A comprehensive assistive technology program will require an array of low, medium and high tech devices for assessment and program implementation in the areas of augmentative communication, environmental control/adaptive living aids, computer access, sensory aids, seating and mobility, and recreation/leisure.

Good purchasing decisions depend upon a thorough understanding of a system's needs and where and how the technology is going to be used. Reliance upon recommendations from professionals knowledgeable in the field of assistive technology will help to insure technology purchases which produce the intended results while being cost effective. Speech language pathologists and occupational and physical therapists usually serve as the specialists when purchasing equipment in the areas of augmentative communication, environmental control, and mobility. However, it is important to recognize that not all of these professionals had training in assistive technology as part of their pre-service education. Therefore the use of consultants and the provision of in-service assistive technology training is critical.

A special section of this document addresses computer access for individuals with disabilities. Their needs must be considered in general computer purchasing for schools, governmental entities, and other systems. Currently, there is no independent review entity that provides buyers with information regarding the accessibility of electronic equipment, educational or other types. Limited information has been available regarding technology access issues.

However, the Missouri Assistive Technology Project and Missouri Technology Center for Special Education has developed a technical assistance packet. Although this technical assistance packet has been designed to assist with educational technology purchasing, it also serves as a guide for other entities addressing computer access issues, such as Americans with Disabilities Act (ADA) coordinators, Vocational Rehabilitation programs, rehabilitation centers, and governmental purchasing departments.

The ***Missouri Technical Assistance Packet*** includes an overview of computer technology access and a quick list tool for access considerations. The reference

notes provide the information necessary to purchase computer equipment that can be made accessible for individuals with disabilities. The **Missouri Assistance Packet Quick List** is included as a guide for purchasing considerations.

**Missouri Assistance Packet Quick List  
Access Considerations Quick List**

<b>1.0 Basic System Access</b>	<b>Limited</b>	<b>Adequate</b>	<b>Substantial</b>
<b>1.1</b> What is the memory capacity of the system to efficiently operate current and projected hardware and software including adaptations? Substantial access would include memory needed to run standard applications plus additional memory needed to accommodate adaptations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>1.2</b> What is the processing capacity of the system to efficiently operate current and projected hardware and software adaptations? Substantial access would include processing speed needed to run standard applications plus additional memory needed to accommodate adaptations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>1.3</b> What is the capacity of the architecture of the system to allow for expansion, such as the addition of specialized cards, memory chips, and port connections? Substantial access would include the availability of open ports, slots, etc. to meet adaptation needs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>1.4</b> What is the capacity of the architecture of the system to allow for each of physical access to features such as on/off switches, volume,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Limited      Adequate      Substantial**

contrast, brightness controls, and disk/CD-ROM drives? Substantial access would include controls on the front of the system or accessible from the control panel.

- 1.5** What is the capacity of the individual user station in a network system to provide adaptations, both built-in and add-on access features? Substantial access would include network ability to deliver adaptations from the server and independently through the end unit.

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- 1.6** What is the capacity of the cabling system to transmit a variety of electronic information? Substantial access would include cabling able to deliver multiple types of electronic information, e.g. adaptations of visual information to auditory and auditory to visual.

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**2.0 Input Access** (Operating System, User Application, & Instructional Software)

- 2.1** What is the capacity of the operating system, application and/or instructional software to deliver keyboard and mouse adjustments, internally or as an add-on? Substantial access would include:
- execution of multiple keystroke commands sequentially rather than

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- simultaneously
- adjustment of acceptance rate for keystrokes and keyboard repeat feature
- adjustment of mouse features (click speed, latching)
- delivery of mouse or pointing device input via keyboard commands
- visual indication of system warning beep
- visual and auditory indication of toggle key status
- carryover of all operating system adjustments into applications and/or instructional software

**2.2** What is the capacity of the operating system, user application, and/or instructional software to accept input from alternative keyboards and alternative pointing devices? Substantial access would be efficient utilization of alternative input devices to transmit any valid input available from the standard keyboard and mouse.

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**2.3** What is the capacity of the operating system, user application, and/or instructional software to accept input from a voice dictation system? Substantial access would be efficient utilization of speech input to transmit any valid input from the standard keyboard and mouse with effective user control.

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**Limited      Adequate      Substantial**

**3.3** What is the capacity of the operating system, user application, and/or instructional software to provide visual information, text and other visual images through tactile output? Substantial access would include:

- conversion of all critical visual information, text and other visual images to tactile
- user control of visual information converted to tactile output via pre-set & user defined parameters

**3.4** What is the capacity of the operating system, user application, and/or instructional software to provide auditory information, speech or other sound signals through enhanced output and visual display? Substantial access would include:

- user definable volume & availability of audio output options (direct input to personal amplification)
- conversion of all critical auditory information to text, graphics, etc., as appropriate for user literacy
- on and off toggle of visual display (such as text captioning)

**3.5** What is the capacity of the application and/or instructional software to provide adjusted and alternative hard copy output such as enlarged, enhanced, and spatially manipulated print and images, and Braille or other tactile imaging? Substantial access would

**Limited      Adequate      Substantial**

include:

- adjustment mechanism (font type/ size) that enables enlargement/ enhancement of text hard copy
- capacity to manipulate the special layout of text and graphics to produce adapted hard copy
- capacity to save text in ASCH (text file) to support conversion of text to Braille

**4.0 Related Access**

<p><b>4.1</b> What is the capacity of the system to provide documentation or associated materials in accessible form? Substantial access would be the availability of all associated materials in alternative formats such as Braille, text-file, audio-cassette, large print, etc.</p>			
<p><b>4.2</b> What is the physical accessibility of buildings and rooms in which computer systems are located, including buildings and rooms that are electronically connected? Substantial access would be the location of computer systems in fully accessible facilities.</p>			
<p><b>4.3</b> What is the physical accessibility of end user structures such as computer stations, desks, tables, etc. and the accessibility of adaptations that are not permanently fixed to a particular computer station? Substantial access would include availability of physical structures that can meet the needs of students with disabilities and ready access (within the general area rather</p>			

**Limited      Adequate      Substantial**

than in another building) to the adaptations needed for a particular student.

**4.4** What is the capacity of hardware and software product vendors to provide initial and on-going technical support regarding system access for students with disabilities? Substantial access would be availability of vendor support to assist with operation of built-in access features specific to their product and to assist with operation of their product with add-on access systems.

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Staff considerations are another integral part of the Assistive Technology Devices component. Assigning staff responsibilities for purchasing, training, and monitoring on-going needs is necessary to develop an accessible system for all. For a more detailed discussion regarding staff development see section “Professional Growth in Assistive Technology.”

Funds for technology purchases can be obtained from federal, state, and local resources. Some programs provide funds directly to eligible persons with disabilities and others are available to support local programs. Investigation of potential funding streams and alignment of fiscal resources increases the options within the Assistive Technology Devices budget. As a starting point for further funding information, contact your state’s Technology-Related Assistance for Individuals with Disabilities Act (Tech Act) project. There is a Tech Act Project in each of the 50 states and territories. The Interagency Program for Assistive Technology (IPAT) is North Dakota’s “Tech Act Project,” 1-800-265-IPAT (4728) V/TT.

## **Professional Growth in Assistive Technology**

**“Knowing where to start training staff in the area of assistive technology was overwhelming. Everyone needed training but until we determined what level of knowledge was necessary for each person to do their job, we were trying to provide the same training for all. Developing a plan helped us align our program needs and staff training needs making it much easier to prioritize and implement training in the area of assistive technology. It ended up fitting nicely into our existing professional development plan.**

Bill, Special Education Administrator

***“Without clarity of thought,  
technology creates computerized incompetence.”***

## **Professional Growth in Assistive Technology**

A professional growth plan provides a mechanism for systematic training in the areas of assistive technology necessary to implement all components identified within a system's comprehensive assistive technology plan. It addresses the needs of new and experienced staff.

It is important to inventory and analyze the types of personnel skills required to implement the system's assistive technology plan. Alignment of personnel resources is important in all areas of the plan.

Based upon identified program needs, it will be necessary to define the knowledge and skill levels required of personnel to provide assistive technology services within the system. Decisions must be made as to the levels of knowledge/skills needed to carry out the responsibilities of each particular position. Some positions may need only an awareness level of general assistive technology issues and other positions may require a high level of expertise in a specific area of assistive technology.

Existing personnel resources must also be identified. Assistive technology areas that will likely be included are policy, funding, assessment, technology devices, administration, training/implementation, and advocacy. Once a staff member has been identified to have skill in a particular area of assistive technology, it will be important to ascertain the level of that knowledge/skill in order to assign job responsibilities and to plan for professional growth. A recommended description of knowledge levels is as follows:

### **Level 1: AWARENESS**

*This level of knowledge consists of a basic awareness, leads to attitude change, and establishes a foundation for subsequent learning.*

### **Level 2: INFORMATION**

*This level of knowledge consists of adding new and more detailed information. The information can be used to make decisions about next steps in whatever assistive technology area to which the information pertains.*

### **Level 3: APPLICATION**

*This level of knowledge consists of the necessary expertise to effect or facilitate change.*

### **Level 4: OPERATIONAL**

*This level of knowledge consists of AWARENESS, INFORMATION, and APPLICATION which results in integration of change within a system.*

Included here is an example of a survey conducted by a school system to identify existing personnel resources with assistive technology device knowledge. This ***“Inventory of Personnel Resources for Assistive Technology Devices”*** was able to identify those individuals having expertise in specific areas in need of development. It also was able to identify resources who did not recognize themselves as having expertise but who others relied upon for support with assistive technology devices.

### **Inventory of Personnel Resources for Assistive Technology Devices**

**The Assistive Technology Committee would appreciate your time in completing this survey. The purpose of this survey is to gather information regarding personnel in the school district having exposure/experience in low to high assistive technology. This information will be used to compile a list of current resources available to you within our district and will identify resources in need of further development.**

**Please answer each of the following questions by checking Level 1, 2, 3, 4, or None, reflecting your level of knowledge. The definition of each knowledge level is as follows:**

**Level 1: AWARENESS**

**This level of knowledge consists of a basic awareness, leads to attitude change, and establishes a foundation for subsequent learning.**

**Level 2: INFORMATION**

**This level of knowledge consists of adding new and more detailed information. The information can be used to make decisions about next steps in whatever assistive technology area to which the information pertains.**

**Level 3: APPLICATION**

**This level of knowledge consists of the necessary expertise to effect or facilitate change.**

**Level 4: OPERATIONAL**

**This level of knowledge consists of AWARENESS, INFORMATION, and APPLICATION which results in integration of change within a system.**

### Computers

	Level	I	II	III	IV	None
Apple II.....		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mac.....		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IBM.....		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Adaptive Computer Access</b>						
Alternative Keyboards..... (i.e., IntelliKeys, AlphaSmart, PowerPad, TouchWindow, Unicorn Board)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assistive Keyboards..... (i.e., MacAccess, switches, joystick, keyguard)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Computer Interfaces..... (i.e., Ke:nx, Adaptive Firmware Card)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adaptive Software..... (i.e., screenreaders, Co:Writer, Write-OutLoud, Megadots, HandiWord, grammar/spell check)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others (by name): _____						

Names of people I rely on for support in this area:

\_\_\_\_\_

### Curriculum Modification

	Level	I	II	III	IV	None
Types of Modification..... (i.e., worksheet adaptations, books on tape, text highlighting, modification of test content/administration, task reduction, teacher/peer notes)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____						

Names of people I rely on for support in this area:

\_\_\_\_\_

### Communication

Level	I	II	III	IV	None
Augmentative/alternative communication (AAC)					
Picture boards.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sign language.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eye gaze.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Encoding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Theme boards.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Switch use.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Computers.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electronic devices..... (i.e., Liberator, Macaw, Cheaptalk)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please list by name: \_\_\_\_\_

Other: \_\_\_\_\_

Names of people I rely on for support in this area:

\_\_\_\_\_

### Hearing-Vision

Level	I	II	III	IV	None
Hearing aids.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Personal devices.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Room devices.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Light boards.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closed circuit television.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Text enlargement.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other: \_\_\_\_\_

Names of people I rely on for support in this area:

\_\_\_\_\_

### Mobility

Level	I	II	III	IV	None
Access to:					
Parking.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stairways, building entrance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Classroom.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Playground.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lunchroom, music, library.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gym.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Braille labels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wheelchairs					
Manual.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Power.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transferring					
Hoyer lifts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wheelchair lifts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual lifts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assisted walking.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____					

Names of people I rely on for support in this area:

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**Posture**

	<b>Level</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>None</b>
Preferential seating.....		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative seating.....		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative desks.....		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Switch placement.....		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Writing.....		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____						

Names of people I rely on for support in this area:

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**Functional Skills – Self Help Skills**

	<b>Level</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>None</b>
Eating utensils.....		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bathroom accommodations.....		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dressing accommodations.....		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental controls.....		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____						

Names of people I rely on for support in this area:

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*A survey will follow to obtain specific information in the categories of your identified experience.*

Name: \_\_\_\_\_

Title: \_\_\_\_\_

School: \_\_\_\_\_

Grades of students with whom you are experienced in technology: \_\_\_\_\_

The next step in planning for professional growth is the inclusion of the identified training needs within the system's existing professional growth plan. Those systems lacking a professional growth plan will need to develop a flow chart to address the needs of new and experienced staff.

The development and implementation of a process to evaluate the impact and outcomes of the professional growth program provides a mechanism for monitoring and improving the quality of assistive technology services. For more detailed information on program evaluation, see section "Outcome Measures."

Developing a method to disseminate current assistive technology information will also provide for on-going professional growth.

In order for the vast numbers of publications, on-line resources, and other literature to be of value and to be utilized, a systematic process for circulating these resources among staff is needed.

Funds and resources will be required to support the professional growth plan. An analysis will include examination of fiscal, personnel, and available equipment resources. Potential may exist for embedding assistive technology issues within established staff development methods and/or career ladders. Collaborative efforts with other entities having assistive technology responsibilities can provide opportunities to pool resources. Accessing available resources and working with other entities will maximize the dollar and the numbers impacted.

## **Participation of the Individuals and Family Members**

**Five blind men were asked to identify an animal. No individual man could touch and feel the whole creature. Only by combining the impressions of all five men could the animal be identified as an elephant.**

***“None of us is as smart as all of us.”***

Ken Blanchard

## **Participation of the individuals and Family Members**

Consumer participation as decision-makers is necessary in the development and implementation of comprehensive assistive technology plans in order to have successful assistive technology outcomes.

Recognizing the importance of consumer participation within each step of the assistive technology plan development and implementation leads to the following recommendations:

1. Include consumers in the development of comprehensive planning for assistive technology.
2. Design a mechanism for systematic inclusion of consumers in educational opportunities.
3. Design a mechanism for systematic information dissemination to consumers regarding assistive technology issues.
4. Serve as a resource to network consumers interested in and/or using assistive technology.
5. Design a plan for consumer participation in program monitoring and evaluation.

## Meeting Individuals' Unique Needs

**“I heard about voice activated computers and thought that was what I needed because of my disability. When I requested this system from my vocational rehabilitation counselor, he said we needed to gather more information and go through a process for selecting the best equipment to meet my needs. I thought he was just stalling and I was frustrated. However, I did go through the process and found out that an adapted keyboard and word prediction software worked better than the voice activated system. I am sure glad we checked out other equipment.”**

Gerry, Vocational Rehabilitation Client

***“Opportunity is missed by most people because it is dressed in overalls and looks like work.”***

## Meeting Individuals' Unique Needs Screening for Assistive Technology

Systematic procedures for identification, evaluation, and individual program planning for assistive technology needs of individuals will assure equitable access to assistive technology solutions. The development and adoption of protocols for addressing assistive technology which have been systematized assure best practices and equal access for all persons throughout the continuum of the system's responsibility.

An **assistive technology (AT) screening tool** provides a systematic method to screen for potential assistive technology solutions for a variety of needs. Screening each individual eliminates the potential for presumptive denial of the need for assistive technology. The following are examples of assistive technology (AT) screening tools. the **AT Trigger: Screening Documents for Potential Assistive Technology Needs**, developed in North Dakota for use in schools, and the **Screening for AT Within VR**, developed by Florida Vocational Rehabilitation.

### AT Trigger: Screening Document for Potential Assistive Technology Needs

Completion of the following questionnaire will assist in identifying the student's potential need for a consultation regarding assistive technology accommodations and/or evaluation.

Student's Name \_\_\_\_\_

Date of Referral \_\_\_\_\_ Age \_\_\_\_\_

Grade Level \_\_\_\_\_ Teacher \_\_\_\_\_

<b>Physical Characteristics</b>	Does the student have physical characteristics which significantly set him/her apart from same age peers (i.e., posture/habits)?	<input type="checkbox"/> yes	<input type="checkbox"/> no
<b>Mobility/Gross Motor</b>	Does the student need special assistance to get to and from places?	<input type="checkbox"/> yes	<input type="checkbox"/> no
<b>Fine Motor Skills</b>	Does the student have difficulty performing basic age appropriate tasks which require the use of hands?	<input type="checkbox"/> yes	<input type="checkbox"/> no

<b>Hearing, Speech, Vision</b>	Does the student have difficulty hearing, speaking, or seeing?	<input type="checkbox"/> yes	<input type="checkbox"/> no
<b>Academic</b>	Does the student experience academic difficulties?	<input type="checkbox"/> yes	<input type="checkbox"/> no
<b>Recreation and Leisure</b>	Does the student have difficulty participating in playground activities, sports, or other pastimes?	<input type="checkbox"/> yes	<input type="checkbox"/> no
<b>Jobs and Vocations</b>	Does the student avoid or have difficulty securing part-time job opportunities?	<input type="checkbox"/> yes	<input type="checkbox"/> no
<b>General Health</b>	Does the student need assistance with academic tasks due to problems related to alertness, vitality, stamina, strength, endurance, or independent work skills?	<input type="checkbox"/> yes	<input type="checkbox"/> no
<b>Self Help</b>	Does the student need help from anyone in regard to self help skills, such as eating, dressing, personal hygiene and grooming, or using the restroom?	<input type="checkbox"/> yes	<input type="checkbox"/> no

Please complete the following similarly titled follow-up section(s)  
for each Yes response from previous page.

**AT Trigger: Screening Document for Potential AT Needs**

<b>Physical Characteristics</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Can the student sit upright while completing tasks at his desk (i.e., not slouched, resting head on desk or hand, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Can the student participate in and complete classwork regardless of habits (i.e., thumbsucking, chewing on pencils, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the student maintain an appropriate posture while seated and actively engaged in a motor task (i.e., keyboarding, cutting)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Can the student participate in playing and running activities without atypical body postures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Can the student sit on floor without assuming asymmetrical postures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Can the student walk independently within the school setting at a rate consistent with that of peers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_

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<b>Mobility/Gross Motor</b>			
1. Does the student have the motor skills necessary to get to/from school and/or get around within the school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Can the student participate in physical activities (structured or independent) and navigate within the classroom without tripping or stumbling?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Does the student climb and descend stairs independently?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is the student able to open heavy doors independently?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the student aware of directionality (i.e., right or left, following the flow of traffic)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is the student able to maintain balance while performing an activity (i.e., putting on boots, getting up from floor)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Can the student carry objects while walking independently?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_

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**Fine Motor Skills**

	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Can the student cut and/or handle scissors independently?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Can the student use writing utensils (i.e., markers, paint brush, pencil, crayons) independently?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the student complete written tasks independently?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Can the student copy materials from a book?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Can the student copy materials from a board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Can the student tie shoes, button, snap, and/or use zippers independently?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Can the student open doors, turn door knobs or handles, water faucets, pages in a book, and use manipulatives?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Can the student keyboard?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Can the student draw, form letters, stay on the line, and/or trace?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_

---

**Hearing, Speech, Vision**

1. Does the student speak to communicate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are others in the school environment able to understand the student's speech?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Does the student respond appropriately to speech and noises in the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is the student able to see printed materials presented in the classroom?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the student able to see toys/objects in the classroom environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is the student able to transfer information from a book, chart, and/or chalkboard to paper?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_

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**Academic**

1. Does the student understand basic cause/effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does the student exhibit choice making skills?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Does the student have the attention span needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	N/A
to handle school/daily living tasks?			
4. Does the student have the sequencing skills necessary to accomplish school/daily living tasks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does the student have the memory and problem solving skills necessary to accomplish school/daily living tasks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Can the student visually track along a line of print?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Can the student read texts independently?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Can the student write legibly at a reasonable rate in a reasonable time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Can the student write legibly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Can the student accomplish written tasks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Can the student spell enough of the words needed to communicate in written form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Can the student perform math tasks needed for school or for daily living?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Can the student take notes at the level needed in school and/or in daily living?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_

---

### Recreation and Leisure

1. Is the student able to use the playground equipment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Is the student able to participate in group recreational activities, such as sports and group games?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Is the student able to take part in activities requiring fine motor skills, such as board games, art, etc.?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is the student able to participate in extra-curricular activities, such as clubs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_

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### Jobs and Vocations

1. Can the student access/participate in vocational or job activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Is the student able to maintain a position for extended periods of time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the student use a computer without modifications?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Can the student hold the phone and dial independently?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the student able to access everything at a job site (i.e., desk, bathroom, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_

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	Yes	No	N/A
<b>General Health</b>			
1. Does the student breathe without difficulty?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does the student demonstrate sufficient stamina to maintain academic involvement throughout the school day?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Is the student able to utilize doors, stairs, lockers, etc. within the school environment independently?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is the student able to maintain focus and engagement with the academic material presented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does the student demonstrate physical strength needed to participate in school activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is the student's health condition adequate for satisfactory school performance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_

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<b>Self Help</b>			
1. Can the student independently use various clothing fasteners?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Can the student organize and maintain his/her school supplies and materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Is the student able to participate in school lunch independently?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Can the student maintain personal hygiene necessary for social acceptance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the student able to use restrooms independently?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_

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If the answer to any of these questions is NO, then a consultation by the Assistive Technology Team should be requested.

## Screening for Assistive Technology Within Vocational Rehabilitation

Please answer the following questions by checking the appropriate box. Your answers will assist your counselor in providing services you may require to successfully complete your rehabilitation. If the answer to any of these questions is YES, then proceed to the companion section of the Pre-Assistive Technology Assessment Form.

	Yes	No
Do you need assistance to get to and from places, such as work, school, or the grocery store?	<input type="checkbox"/>	<input type="checkbox"/>
Do you use a cane, walker, wheelchair, or other aid in walking?	<input type="checkbox"/>	<input type="checkbox"/>
Has learning new information ever been difficult for you?	<input type="checkbox"/>	<input type="checkbox"/>
Have you ever had any difficulty hearing, speaking, or seeing?	<input type="checkbox"/>	<input type="checkbox"/>
Do you need assistance to write?	<input type="checkbox"/>	<input type="checkbox"/>
To perform your work do you use devices other than the tools provided by your employer?	<input type="checkbox"/>	<input type="checkbox"/>
Do you need help from anyone with your daily living skills, such as dressing, preparing meals, or bathing?	<input type="checkbox"/>	<input type="checkbox"/>

### Assistive Technology Pre-Assessment Form

Counselor: The questions below are recommended as follow up to YES answers offered by your client to the Application's general questions regarding their use or need of rehabilitation technology. The questions below are worded for general context only and should be amplified, clarified or re-worded as per your client's level of understanding. Note: If the answer to any of these questions is NO then a rehabilitation engineering and AT assessment may be appropriate. If the answer to any of these questions is N/A then a call to the Rehabilitation Engineering Technology Team for clarification is appropriate.

		Yes	No	N/A
<b>T</b>	<b>Transportation</b>			
1.	Do you have access to transportation?_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	If you use a mobility device, can you transfer to a car seat?_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Do you have a driver's license?_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Have you completed a driver's education course?__	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Can you drive a vehicle from the existing seat?_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Can you ride a city bus?_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_  
\_\_\_\_\_

<b>A Ambulation</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Can you walk by yourself? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Can you walk up a hill or flight of stairs by yourself? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can you stand up by yourself? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Can you stand for 30 minutes? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Can you lift a telephone book? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Can you lift a bag of potatoes? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Are you able to reach above your head? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_

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<b>L Learning</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. Can you learn by watching? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Can you learn by listening? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can you learn by doing? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Can you write down your thoughts? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Can you remember things well? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Can you read printed or hand-written messages or notes? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Can you follow verbal directions? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Can you follow written directions? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Can you write with a pen or pencil? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Can you spell most words? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Can you keep your own check book? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_

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<b>HSV Hearing/Speech and Vision</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. Can you understand voices most of the time? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Can you use the telephone? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can you hear clearly when you use the telephone? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Can you speak to communicate? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Can people understand you when you speak to them? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Can you read the paper, books, or your mail? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Can you distinguish sounds, i.e., horns, bells, sirens? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_

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<b>W Writing</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. Can you hold a pen or pencil? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Can you write notes, messages, reports? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_

<b>J</b>	<b>Job Site</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1.	Can you sit for longer than 30 minutes without pain? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Can you use a computer without help? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Can you hold the phone and dial by yourself? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Is the chair that you sit in comfortable for you? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Do your feet touch the floor when you sit at your workstation? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Can you type or work for 30 minutes without pain in your hands, arms, shoulders, neck, or back? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Can you use the rest room facilities at your school or work? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____				

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<b>PC</b>	<b>Personal Care</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1.	Can you get up and dress without help? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Can you shop and prepare your own meals? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Can you do your own laundry without help? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Can you bathe or shower without assistance? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	In an emergency can you get out of your home by yourself? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	In an emergency can you dial 911 and give directions to rescue persons to get to your house and help you? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Can you get in and out of your home by yourself? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____				

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An **assistive technology assessment process** provides a comprehensive approach to determine individual needs. Generally accepted components of an assistive technology assessment process include:

- a) *Identification of an individual's functional needs*, i.e., communication, education/vocational, mobility/seating and positioning, recreation/leisure, and environmental control.
- b) *Gathering background information on individual's functional abilities*, i.e., disability type, prognosis, motor, cognition, communication, sensory, education, and vocational, individual's person characteristics (assistive technology experience, interests, motivation, attitude, desire for independence, environment)
- c) *Matching the individual and assistive technology* by insuring that the technology solution is individualized, fits individual's functional abilities, personal characteristics, and environments, and remains as

- simple as possible.
- d) *Investigating device options*, i.e., ease of use, reliability, cost.
  - e) *Providing experiences in trial use* with selected assistive technology devices.
  - f) *Re-examining options*, if necessary.
  - g) *Developing training plans* to support the individual, family members, and support personnel in device use and implementation.
  - h) *Identification of funding sources* to provide for equipment trial use and for purchasing of devices.
  - i) *Identifying follow-up activities* to ensure an on-going process for systematic examination of device use and implementation necessary to meet the individual's evolving needs.

**Individual programming for assistive technology** needs to fit within the decision making sequence that meets the legal requirements under whichever program the individual is served.

Under the Rehabilitation Act Amendments of 1992 (Public Law 102-569), state rehabilitation agencies must look at all options, including assistive technology interventions. Therefore, vocational rehabilitation agencies' plans should identify how assistive technology is addressed within the Individualized Written Rehabilitation Plan (IWRP).

Children with disabilities who need assistive technology devices and services in order to benefit from education are entitled to have access to such devices and services under three laws: the Individuals with Disabilities Education Act (IDEA), Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990. Therefore, school systems should identify how assistive technology is addressed within the Individualized Educational Plan (IEP) or the 504 Plan.

## Outcome Measures

**“The central motivation for developing outcome measures for assistive technology is to improve our understanding and documentation of the effectiveness of assistive technology devices and services. This information will make it possible to enhance the independence of people with disabilities and the options and opportunities available to them. It is also important to expand access and avoid undue hardship for everyone involved in matching the most appropriate technologies to all persons who want them.”**

Jan C. Galvin and Marcia J. Scherer

***Be wary of overreacting to mistakes. The freedom to risk mistakes is critical to quality improvements.***

## **Outcome Measures**

Outcome measurement and reporting systems track person-specific, program, and system information. This provides a mechanism for monitoring and improving the quality of assistive technology services.

Recognizing the value of outcome information in providing quality assistive technology services, the following recommendations are made:

***Identify information that will reflect impact. This can be accomplished by designing methods to measure the following:***

*Individual outcomes, i.e., functional impact, consumer satisfaction, and evolving growth potential.*

*Assistive technology program outcomes, i.e., staff knowledge levels, building level implementation, physical access to equipment, job descriptions, work distribution.*

*System changes, i.e., policies, hiring practices, budget, personnel management.*

***Identify participants in program evaluation and define their roles. Participants to be considered include.***

*Direct assistive technology service providers.*

*Associates of the assistive technology user, i.e., classroom teachers, employers, friends, colleagues.*

*Consumers and/or family members.*

*Program administrators.*

***Establish time frames in which to collect and utilize evaluation data.***

*Obtain and compile data.*

*Analyze the compilation.*

*Modify plans, as necessary.*

*Maintain systematic method to monitor progress.*

## Fitting the Pieces Together

**“Writing an Assistive Technology Plan seemed absolutely overwhelming. I did not want to create another program. When I saw how we could integrate assistive technology within our existing plans, however, I bought into the planning phase. Thinking about the plan in pieces helped us realize we were further along in some areas than we thought.”**

Russ, Rehab Administrator

***“Even though the distance between you and your goal is great, it is never too far to the next step.”***

## **Fitting the Pieces Together**

As each of the nine puzzle pieces is addressed, a critical component of an overall plan is written. Pulling all of the pieces together results in a comprehensive assistive technology plan. Without each of the puzzle pieces in place, the vision of a comprehensive assistive technology plan meeting the needs of all people remains only a vision.

No particular order needs to be followed when addressing each of the **Nine Critical Components** within plan development. All components are equally important and are interdependent. Because Administrative Support is usually necessary in order for the process to begin, it is a suggested starting point.

The program analysis results will define pieces of the planning puzzle already in place. The goals and action steps written in response to those missing pieces become the framework for the comprehensive assistive technology program plan document. The outcomes of the goals and action steps eventually become the technology program. The goals and action steps will necessarily change as the program evolves in response to outcome measures and monitoring.

The following sample includes the methods used and components compiled in a written assistive technology plan completed by a rural school district.

### ***Sample***

#### **Methods Use and Critical Components of a Sample Assistive Technology Plan Rural School District, North Dakota**

##### **Administrative Support for Assistive Technology**

The district's administration pledged its commitment to the establishment of a system-wide atmosphere and mechanism to provide comprehensive and ongoing assistive technology solutions. Administration acknowledged the district's responsibility for assistive technology under IDEA and Section 504 of the Rehabilitation Act. Administration recognized that its responsibilities for assistive technology include meeting staff needs, budget planning, and engaging in interagency collaboration.

The administration understood the importance of selecting diverse committee membership to ensure a broad perspective within planning. They recognized the time commitments required to accomplish the task. They provided the necessary staff release time for committee meetings and to complete evolving activities.

## **Assistive Technology Committee**

A diverse committee membership was established to include: parents, elementary, middle and high school teachers, related service personnel, paraprofessionals, administrators, and general education technology specialists. Selected members have an interest in technology, have the respect of their peers, are team players, and portray visionary and leadership skills.

The Assistive Technology Committee has defined their roles and responsibilities in the areas of authority of the task force, leadership selection, subcommittees, time commitments, task assignments, membership rotation, and reporting methods.

The Assistive technology Committee recognized the necessity of assessing the current assistive technology practices and resources within the system in order to know where program planning needed to start. They agreed to complete a program analysis which addressed each of the areas of a comprehensive assistive technology plan.

### **Program Analysis Completed**

The Assistive Technology Committee used the ***Program Analysis for Assistive Technology*** and completed it as a group. The areas examined include: administrative support for assistive technology, guiding documents, assistive technology devices, professional growth, participation of the individuals and family members, meeting individuals' unique needs, outcome measures, and written technology plans.

Results of the program analysis identified starting points in all areas of planning. Subcommittees and task forces were established to focus on specific activities within the plan development and to provide periodic status reports to the Assistive Technology Committee. These reports ensured continuity and integration of the information within all areas throughout the evolution of the plan. The reports were submitted to the Assistive Technology Committee and included goals, activities completed, and next steps which eventually became a part of the written assistive technology plan.

The Assistive Technology Committee meetings provided the opportunity for the entire membership to assimilate the information from all committees and integrate in into the comprehensive assistive technology written plan.

An example of a **status report** provided by a subcommittee in the area of guiding documents follows.

## **STATUS REPORT**

### **Guiding Documents**

**Goal** To write guiding documents that will establish belief statements upon which policies and procedures will be adopted for the inclusion of assistive technology services within the district.

**Activities Completed** The Rural School District's technology task force reviewed the district's general and special education mission statements and wrote a vision statement to reflect assistive technology. The district adopted the following vision statement:

It is the vision of the Rural School District to establish and sustain a comprehensive assistive technology program that will increase, maintain, or improve functional capabilities of all individuals with disabilities.

The Rural School District adopted the following belief statements upon which policy and procedures will be based for the inclusion of assistive technology services within the system.

1. Assistive technology shall be available to all students who require such technology in order that they may receive an appropriate educational program.
2. Assistive technology increases student opportunities for education, integration, social interactions, and potential for meaningful employment.
3. Students who use assistive technology may not necessarily require special education programs and services.
4. Assistive technology shall support student participation in learning experiences in the least restrictive environment.
5. As needs change with student growth and development, assistive technology shall remain appropriate and relevant for the student.
6. Families, students, and educators shall participate in the assistive technology decision-making process.
7. Recommendations for assistive technology shall be based upon student needs rather than financial resources or life career expectations.
8. Interagency cooperation is essential for students to access assistive technology devices and services across all appropriate environments.
9. Early planning and coordination with adult service agencies shall insure appropriate transitioning of assistive technology devices and services for students.
10. The Rural School District shall develop, adopt, and implement assistive technology policies and procedures which address student evaluation, consultation, and services.
11. The Rural School District shall offer on-going staff development in order to appropriately meet the needs of students requiring assistive technology.

**Next Steps** To assure best practices and equal access for all students in the district, assistive technology guidelines reflecting existing state and federal laws and best practices will be developed. Systematic procedures for identification, evaluation, and individual program planning will be included in the guidelines. Immediate next steps include the following:

- Assign a task force to identify and adopt an assistive technology screening mechanism to prevent presumptive denial.
- Assign a task force to identify and adopt an assistive technology assessment process.

## **Guiding Documents**

A subcommittee was formed to write an assistive technology vision statement which supports the district's existing mission statement. The vision statement defines the continuing responsibility undertaken by the district with the clarification that assistive technology is included as an integral part of the system.

The same subcommittee investigated assistive technology belief statements from other schools. They designed the district's belief statements upon which local policies and procedures are developed and evaluated. These statements are a public declaration of the district's convictions upon which programs are based.

A subcommittee has been assigned to write the district's assistive technology guidelines. This document will be compiled when the policies and procedures that provide systematic practices for identification, evaluation, and individual program planning are adopted.

## **Assistive Technology Devices**

A subcommittee inventoried all assistive technology devices within the district. They developed a database to track and circulate the equipment. A central storage area was identified to house equipment when not in use. Equipment maintenance was assigned to the district technology coordinators.

A subcommittee developed a procedure to provide technical assistance to the general technology coordinators responsible for district computer purchases to address accessibility issues at the front end. The technology budget includes funds for long and short range equipment purchases.

Collaborative agreements were developed with Vocational Rehabilitation, Early Intervention Program, and five area school districts to insure students maintain uninterrupted access to equipment when they make the transition between these entities.

## **Professional Growth Plan**

The Assistive Technology Committee inventoried the district's personnel skills in the area of assistive technology. They created a resource database of this information. They developed long and short range plans to systematically address training in the areas of assistive technology necessary to implement all components identified within the school district's comprehensive assistive technology plan. The district's plan addresses the needs of new and experienced staff.

## **Participation of Students and Parents**

Students and/or parents were recruited to serve on the Assistive Technology Committee and its subcommittees. Inclusion of students and parents in decision making helps to ensure a comprehensive perspective of assistive technology issues.

### **Meeting Students' Unique Needs**

A subcommittee developed a screening tool for identification of potential assistive technology solutions. A comprehensive assistive technology assessment protocol was identified. The district adopted the assistive technology screening tool and assessment protocol for system-wide implementation. The program is monitored to guarantee legal requirements are met.

### **Outcome Measures**

The Assistive Technology Committee developed and adopted reporting systems which annually measure individual outcomes, assistive technology program outcomes, changes within the school district, and consumer satisfaction. The district's assistive technology plans will evolve in response to the results obtained through outcome measures and monitoring.

## ANTICIPATED IMPACT

### Technology for All

***“Success is a journey  
not a destination.”***

Ben Sweetland

## Anticipated Impact

A well developed and implemented assistive technology plan will increase an entity's ability to provide assistive technology solutions for individuals with disabilities. Those proceeding with a comprehensive assistive technology plan recognize the potential of technology to help persons with disabilities achieve maximum independent functioning. Although the challenges are numerous and significant effort is required to complete and follow a plan, the impact is life changing for individuals.

As a result of having a plan,

- *Necessary resources are committed to realize the goals within long range plans and cost effective decisions are made avoiding reactionary responses to immediate needs.*
- *A mechanism is in place to identify and address barriers within local interpretations, regulations, and practices for consumers to obtain and utilize assistive technology.*
- *Processes are in place resulting in best practices which insure that the unique needs of individuals are met.*
- *A staff knowledgeable in current assistive technology issues is developed and maintained.*
- *Collaborative efforts are pursued.*
- *Consumer involvement in program planning and assessment is promoted.*
- *Regional and statewide support networks for consumers and service providers are established based upon the commitment to integrating assistive technology into the lives of individuals with disabilities.*
- *Individual, program, and system outcomes are tracked and analyzed to insure quality of services.*

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*Computer Technology Access Quicklist* (1996). Missouri Department of Elementary and Secondary Education, P.O. Box 480, Jefferson City, MO.

*Program Analysis for Assistive Technology (PAAT), Nine Critical Components for Comprehensive Assistive Technology Plan Development*.

*Critical Components Action Steps, Inventory of Personnel Resources for Assistive Technology Devices, Screening Document for Potential Assistive Technology Needs (AT Trigger)*. Interagency Project for Assistive Technology, P.O. Box 743, Cavalier, ND 58220. (701) 265-4807

*Screening for Assistive Technology Within VR Tool*. Vocational Rehabilitation, Florida.

## Glossary

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

**Assistive Technology Devices:** Any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.

**Assistive Technology Services:** Any service that directly assists an individual with a disability in the selection, acquisition, or use of an assistive technology device. Including: a) the evaluation of needs . . . in the individual's customary environment, b) purchasing, leasing, or otherwise providing . . . assistive technology devices, c) selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing of AT devices, d) coordinating with other therapies, interventions or services with assistive technology devices, e) training or technology assistance for the individual with disabilities, or, where appropriate, [his/her] family . . . and f) training or technical assistance for professionals . . . employers, or others who provide services to, employ, or are otherwise, substantially involved in the major life functions of individuals with disabilities.

**Augmentative and Alternative Communication (AAC):** A set of communication modes such as sign language, gestures, and communication devices that are used to supplement or replace oral language.

**Americans with Disabilities Act (ADA):** Federal law which prohibits discrimination on the basis of disability in employment, State and local government, public accommodations, commercial facilities, transportation, and telecommunications. It also applies to the United States Congress.

**Communication Device:** A device used to enhance a person's ability to communicate.

**Computer Access:** See adaptive computer access.

**Daily Living Aids:** Self-help aids for use in activities such as eating, bathing, cooking, dressing, toileting, and home maintenance for persons with physical, sensory, cognitive disorders.

**Environmental Control Systems:** A hardware device that allows the user programmed or spontaneous control over remote, electrically operated appliances.

**Hardware:** The physical apparatus of a computer system.

**High Technology:** Devices which are difficult to make, harder to obtain, and generally, expensive. Examples include electronic communication devices, computer hardware and software, and power wheelchairs.

**Individuals with Disabilities Education Act (IDEA):** The federal law which mandates that all children with disabilities are entitled to a free and appropriate public education (FAPE), in the least restrictive environment (LRE). They are also entitled to supplementary services necessary for them to benefit from their education, and with parent consent, a fair assessment must be completed to determine the student's educational needs.

**Individualized Education Program (IEP):** Public Law requires that an IEP be developed by the educational team for each exceptional child; the IEP must be prepared annually and must include a statement of present education performance, instructional goals, educational services, and criteria and procedures for determining that the instructional objectives are being met.

**Individualized Written Rehabilitation Plan (IWRP):** The required vocational rehabilitation written plan which outlines the vocational objectives and the services to be provided for the individual with disabilities.

**Low Technology:** Aids or devices which are inexpensive, simple to make, and easy to obtain. For example, picture communication boards, modified eating utensils, reaching devices.

**Rehabilitation Act of 1973:** Mandates reasonable accommodation and least restrictive environment in federally funded employment and higher education; requires both assistive technology devices and services. The 1997 reauthorization of the Rehabilitation Act defines rehabilitation technology as rehabilitation engineering and assistive technology devices and services and mandates rehabilitation technology as a primary benefit to be included in the Individualized Written Rehabilitation Plan.

**Seating and Positioning Systems:** Accommodations to a wheelchair or other seating system to provide greater body stability, trunk/head support and an upright posture, and reduction of pressure on the skin surface (cushions, contour seats, lumbar) for persons with mobility impairments.

**Section 504:** This section of the Rehabilitation Act of 1973 is a civil rights statute that requires equal access and equal opportunity to persons with

disabilities. It provides that no otherwise qualified handicapped individual shall, solely by reason of his handicap, be excluded from the participation in, be denied benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

**Section 504 Plan:** The written individualized plan which describes the accommodations and modifications necessary to ensure equal access and equal opportunity.

**Sensory Aids:** Devices which augment or replace sensory function for individuals with sensory impairments, i.e., hearing loss, deafness, vision loss, blindness, tactile limitations.

**Software:** Instructions, usually stored on disks, that give the computer directions on what to do. Also called programs and application software.

**Switch:** An input device for computers and other technologies. When activated, a signal is sent to the computer or other device.

**Technology Related Assistance for Individuals with Disabilities Act (Tech Act):** The Tech Act, which was re-authorized in 1995, provided federal funds to assist states in developing consumer responsive systems of access to assistive technology, technology services, and information.

**Vocational Rehabilitation:** A federal program which provides funds to states to administer programs to assist individuals with disabilities to enter, remain in, or return to employment.

**Wheelchairs/mobility aids:** Manual and electric wheelchairs, mobile bases for custom chairs, walkers, three-wheel scooters, and other utility vehicles for increasing personal mobility.

## IPAT Resources

### North Dakota Interagency Program for Assistive Technology Products and Services

**AT Info-Line:** A place to begin finding answers to all types of AT questions. 1-888-214-2780.

**“AT Key”:** IPAT’s bi-monthly assistive technology newsletter available at no charge. Articles include current assistive technology trends, funding information, consumer AT anecdotes, a calendar of events, equipment spotlights, and more.

**A Picture of Assistive Technology in North Dakota:** A booklet which provides a picture of assistive Technology (AT) use in North Dakota. Includes definitions of AT, first hand accounts of AT use, explanations of the Tech Act & IPAT, and identifies remaining AT device and/or service challenges.

**Adaptive Equipment Services:** Services subcontracted by IPAT which provide outreach services for fabrication and customization of equipment. 1-800-252-4911, ext. 4583.

**Advocacy Services:** Contact for help in resolving AT service/device barriers. 1-800-472-2670.

**Assistive Technology Trigger (ATT):** A screening document for potential assistive technology needs for school-age children. This document is also within *Technology for All: A Guide to Solving the Puzzle*. 1997

**Compilation of North Dakota Public Forums:** A compilation of a series of forums where comments on any and all aspects of assistive technology in North Dakota were gathered. 1995

**Consumer-to-Consumer Assistive Technology “Hands-On” Outreach Kits for Seniors:** Demo kit filled with low-tech items for seniors. These kits (10) are routed throughout the state by consumers. Each kit is equipped with a script and purchasing information for each device.

**Consumer-to-Consumer Assistive Technology “Hands-On” Outreach Kits for Young Children:** Demo kit filled with low-tech items for young children. These kits (10) are routed throughout the state by consumers. Each kit is equipped with a script and purchasing information for each device.

**Doodads, Gadgets, and Thingamajigs:** A booklet highlighting simple assistive technology tools for daily tasks. 1998

**Guide to Policy and Funding for Assistive Technology in North Dakota:**

This instrument was developed in response to statewide consumer requests and contains policies and regulations relating to funding for assistive technology in North Dakota. 1996

**IPAT Brochure:** Brochures describe IPAT's mission, its structure, and services.

**IPAT Equipment Expo:** A resource for people with disabilities, educators, senior citizens, advocates, service providers, and employers to explore simple to complex assistive devices through demonstration and hands-on opportunities. Call IPAT to arrange an Expo.

**IPAT Equipment Loan Library:** The IPAT Equipment Loan Library is housed at the School for the Blind in Grand Forks, North Dakota. Consumers may access the loan library to borrow AT equipment for trial use. 1-800-421-1181

**IPAT Regional Coordinators:** Call for help in addressing AT barriers, problem solving, and locating AT resources. 1-800-265-4728

**IPAT Training Modules:** Those available include: 1) Basic Computer Technology, 2) Adaptive Computer Access: Inputs and Outputs, 3) Assistive Technology Assessment Process, 4) Funding Communication Devices Through Medicaid of North Dakota, 5) AlphaSmart ©: An inexpensive, Portable Input Device, 6) Assistive Technology for Individuals With Learning Disabilities. New modules are developed on an on-going basis in response to requests. Please call IPAT for updated module information.

**IPAT Video Resource Library Directory:** A compilation and description of IPAT's video lending library inventory. 1997

**Key Facts Information Sheets:** Information sheets developed for general dissemination in regard to Technical Assistance (advocacy, funding, assessment, IPAT programs, accessibility, and miscellaneous) and Devices and Implementation (communication, mobility/seating, environmental control, computer access, vision/hearing, transportation, and recreation). These fact sheets are developed on an on-going bases.

**Nine Critical Components for Comprehensive Assistive Technology Plan Development:** A table that provides recommendations which are intended to serve as a guide in program analysis and plan development for assistive technology. 1998

**The North Dakota Assistive Technology Program (IPAT) (Videotape):** A videotape describing IPAT's purposes, goals, and services in North Dakota and examples of assistive technology. 1995

**North Dakota Medicaid Coverage Policy for Augmentative & Alternative Communication Devices & Services:** Decision making criteria describing the scope of North Dakota Medicaid coverage and funding for augmentative and alternative communication devices and services, as well as reviewing criteria that will be applied to funding requests by North Dakota Medicaid beneficiaries for these devices and services. 1995

**Program Analysis for Assistive Technology (PAAT):** A tool designed to help an organization assess their existing assistive technology program. 1998

**Selecting and Obtaining Assistive Technology Brochure:** Brochure which defines assistive technology devices and services and provides guidance in their selection.

**A Survey of Assistive Technology Assessment Providers Within North Dakota:** This summary reflects the data compiled through interviews with twenty-one evaluation centers in North Dakota that include assistive technology in their assessments. 1995

**A Survey of Regional Special Education Assistive Technology Practices in North Dakota:** This survey provides statewide information regarding policies and practices relating to assistive technology within local special education units. 1995

**A survey of State and Regional Vocational Rehabilitation Assistive Technology Practices in North Dakota:** Survey conducted to study the delivery of rehabilitation/assistive technology services in North Dakota. 1997

**Technology for All: A Guide to Solving the Puzzle:** A guide to assist systems in writing comprehensive assistive technology plans. It includes checklists, worksheets, tables, and other resources to assist in analyzing and designing an assistive technology program. 1998

**Used Equipment Bulletin Board:** List and look for AT equipment – sell, swap, or donate. 1-800-214-2780.