



# **Assistive Technology: A System of Support for Including Students with Disabilities within General Education Programs**

## **A General Overview**

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# Purpose of Today's Presentation

- Increase awareness of Assistive Technology and AT's potential role in the education of students with disabilities.
- Understand how Assistive Technology is considered throughout the IEP Process.
- Gain insight into how Assistive Technology can support students with disabilities in General Education Settings.

# An Introduction to Assistive Technology

- *A case study*



- Common misconceptions about AT

# Assistive Technology

## A Case Study

- **Who is this person?**
  - *High level Spinal Cord Injury*
    - **Abilities**
      - Able to Speak
      - Able to Hear
      - Able to See
      - Able to Think
    - **Limitations**
      - Paralyzed from C-2 level
      - Ventilator dependent
      - Dependent in all activities of daily living



# COMMON MISCONCEPTIONS About AT

- All AT is computer based
- All AT is complex
- Only students with the most severe disabilities need AT
- AT solves all problems
- Only AT specialists deal with AT
- AT is a one-shot process



# Definitions

# Individuals with Disabilities Education Act (IDEA) and AT

- Defines AT Devices and Services
- Provides guidance to states regarding the consideration of AT devices and services within educational programs for students with disabilities.

# AT Definitions

## Federal Definitions

### IDEA 2004

Sec 300.5 - AT Devices

Sec 300.6 - AT Services

## New Jersey Definitions

Administrative Code 6A:14

Appendix F and G



# IDEA 2004 and NJAC 6A:14

## AT Device Definition

The term “assistive technology device” means any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability.

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

# IDEA 2004 and NJAC 6A:14

## AT Service Definition

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

# IDEA 2004 and NJAC 6A:14

## AT Service Definition

- (A) the **evaluation** of the needs of a child including a functional evaluation of the child's customary environment;
  
- (B) **purchasing, leasing, or otherwise providing for the acquisition of** assistive technology devices by a child;

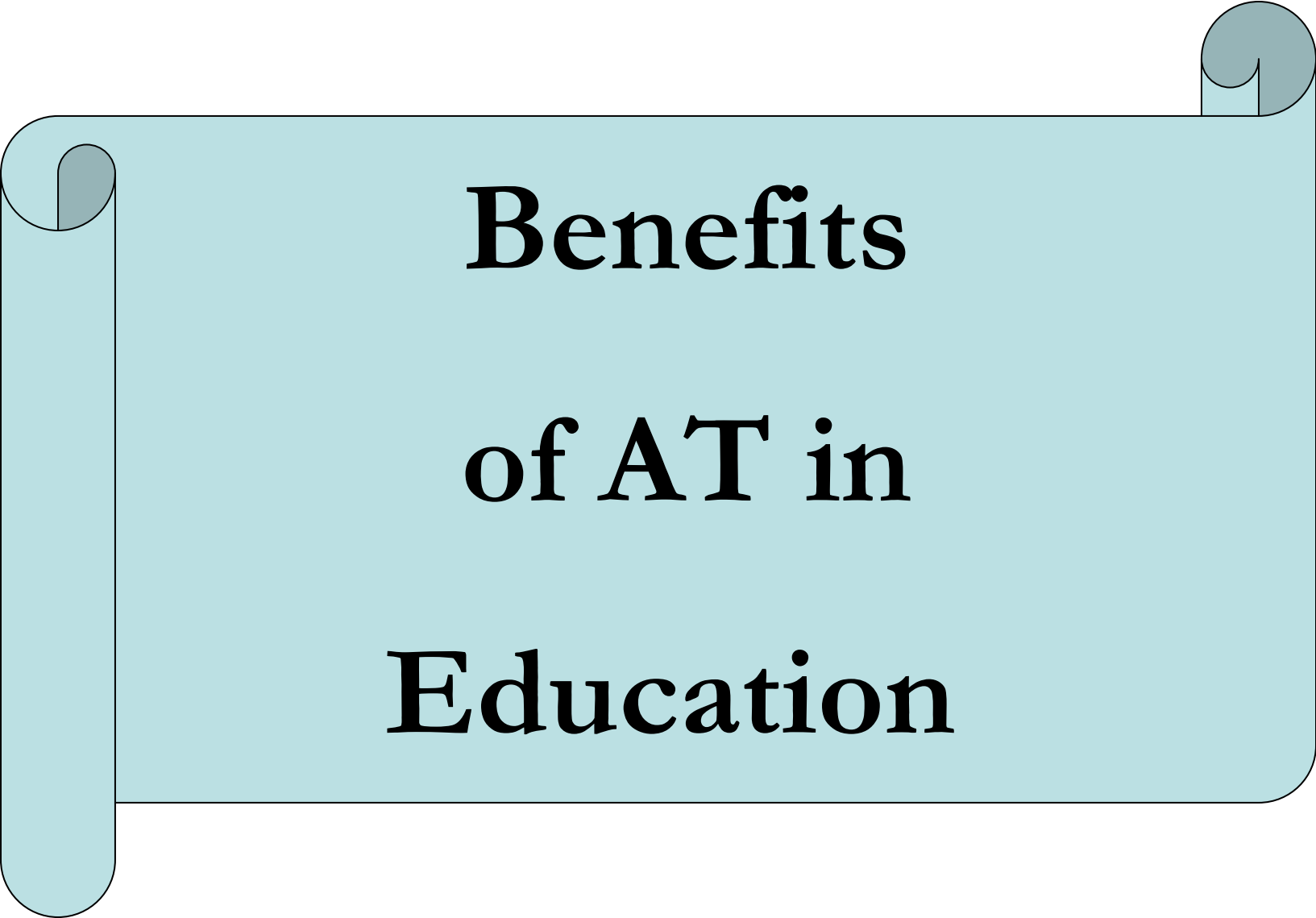
# **IDEA 2004 and NJAC 6A:14 AT Service Definition**

- (C) selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing of assistive technology devices;**
  
- (D) coordinating and using other therapies, interventions, or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs;**

# **IDEA 2004 and NJAC 6A:14**

## **AT Service Definition**

- (E) training or technical assistance for a child**, or, where appropriate, the family of a child; and
- (F) training or technical assistance for professionals** (including individuals providing education and rehabilitation services), employers, or other individuals who provide services to, employ, or are otherwise substantially involved in the major life functions of a child.



# **Benefits of AT in Education**

# What Are The Benefits?

- Increase Independence
- Increase Participation
- Increase Access

*Which result in:*

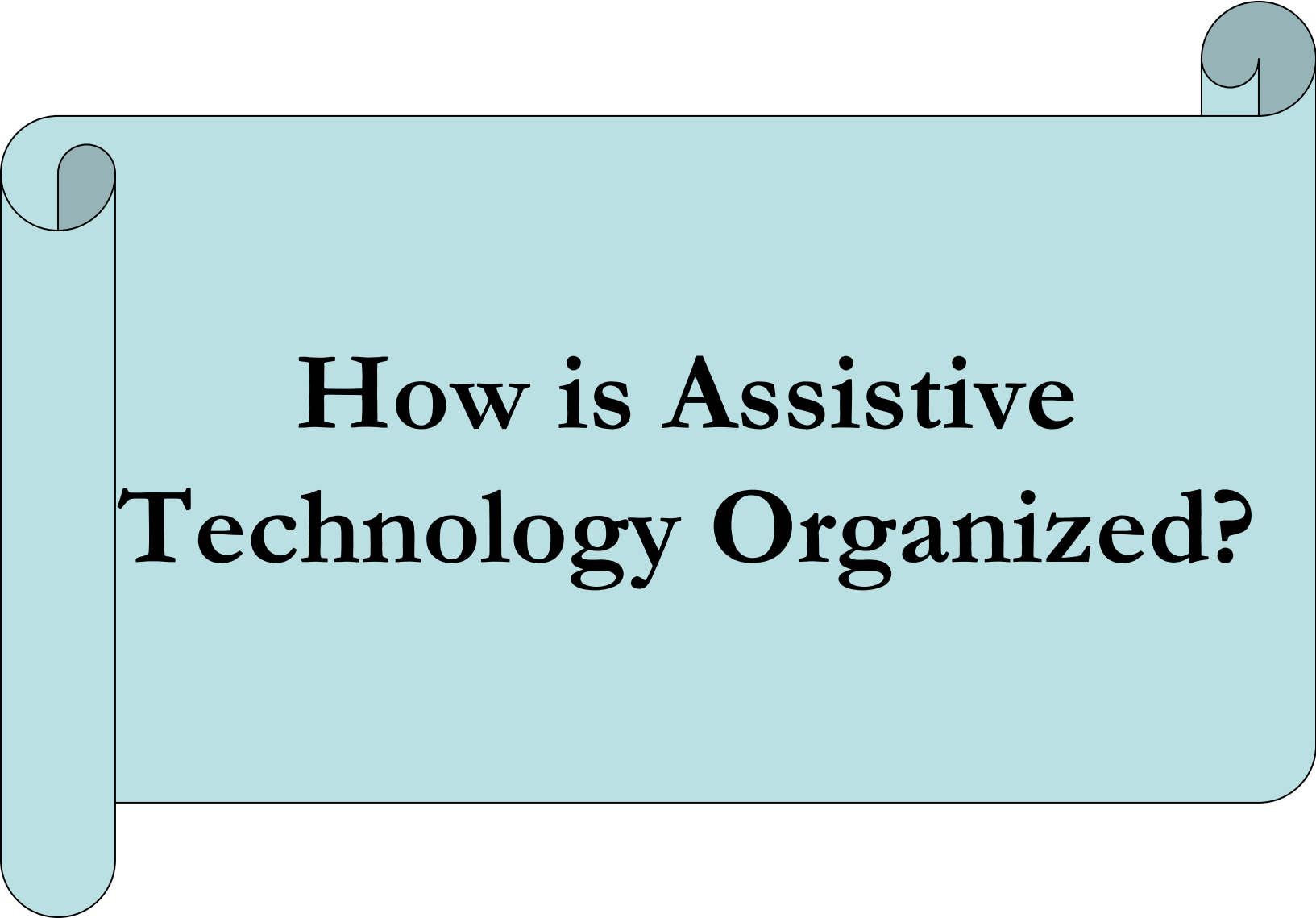
- Demonstration of Competencies
- Raised Self-Esteem



# **Individuals Involved in Assistive Technology**

# Individuals Who May Be Involved With AT

- Special Education Teachers
- General Education Teachers
- CST members
- Parents/Family Members
- **Student**
- Peers
- Related Service Personnel (OT, SLS, PT)
- Community Learning Site personnel
- Specialty Teachers (Art, Music, etc.)
- Administrators
- Others familiar with the student in their school environment
- AT Specialist

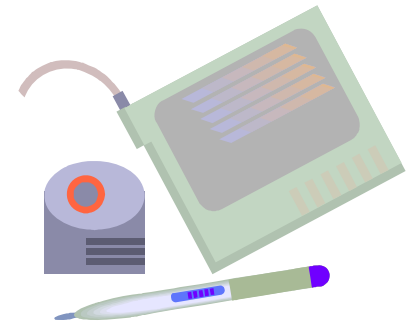


# **How is Assistive Technology Organized?**

# How Do You Organize Information About AT?

- There are many possible ways to classify or categorize Assistive Technology Devices. The most common classification is:

*Low Tech to High Tech*



# AT Continuum

## CHARACTERISTICS



**Low Tech**

**Mid Tech**

**High Tech**

- Readily Available
- Simple
- Low Cost
- Easy to use
- Limited Capability
- Limited Features
- Little Maintenance

- Not readily available
- Complex Electronics
- Expensive
- Complex to learn and use
- Greater Capability
- More Features/Functions
- High Maintenance



# Performance Areas

# What Are Performance Areas?

Performance Areas are categories, established through best practices, in which measurable tasks can be identified

**AND**

which may require some form of accommodation, modification and/or AT to enable the student to perform at their highest level.

# How does consideration of the Performance Areas assist the student?

- AT Devices and Services are not identified through:
  - The student's disability
  - The student's grade level
  - The student's educational environment
- Instead, they are identified by the specific task the individual student is having difficulty performing or is unable to perform at all.

# 16 Performance Areas

- Spelling
- Compose Written Material
- Mechanics of Writing
- Computer Access
- Vision
- Calculation
- Reading
- Study & Organizational Skills
- Communication
- Hearing
- Seating & Positioning & Mobility
- Listening/Attending
- Recreation & Leisure
- Activities of Daily Living
- Transition to Adult Life
- Behavior

# Spelling

If a student spells at a lower level than others or is experiencing difficulty with spelling strategies...

A mid-tech example:



This is a portable, full keyboard based dictionary and spelling assistant with speech output

# Compose Written Material

If a student has difficulty with composing written material in multiple environments...

A mid-tech example:



Organizational software is designed to assist with the brainstorming of idea formulation and organization for later conversion to a linear outline.

# Mechanics of Writing

If a student has difficulty with generating legible material in multiple environments...

A low-tech example:

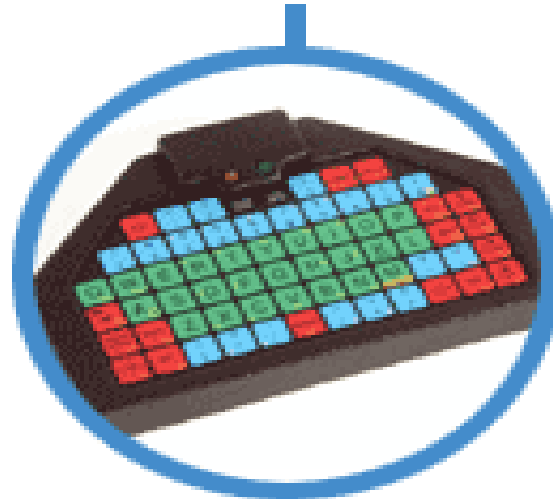


Many different types of pencil grips and related devices are available to help the student develop writing capabilities.

# Computer Access

If the student has difficulty accessing or controlling the computer through standard keyboard and mouse...

A mid-tech example:



This is one of many options for use by students with limited ROM or strength. An adapted keyboard

# Vision

If a student has difficulty seeing standard size print or print contrast combinations...

A high-tech example:



A Closed Circuit Television (CCTV) provides enlargement, color adjustments and contrast adjustments to a wide variety of print and three-dimensional devices.

# Calculation

If a student has a hard time handling traditional math ‘manipulatives’, or understanding basic calculation concepts... A low-tech example:

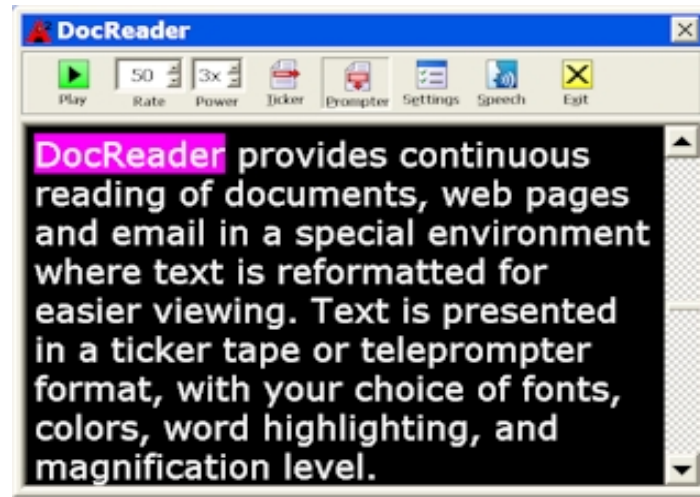


A Mathline is easy to manipulate and shows the relationship between concrete objects and abstract numbers

# Reading

If a student reads at a lower level than others or is struggling with the written word...

A mid-tech example:



Document reading software is able to “read” aloud most text and html documents and has multiple features including contrast adjustments, spacing, type of voice and speed of speech.

# Study and Organizational Skills

If a student has difficulty with mastering good study skills and organizational habits...

A low-tech example:



A three-sided highlighter can be used to indicate priority to material being studied.

# Communication

If a student does not have functional communication skills, a wide variety of Augmentative and Alternative Communication (AAC) devices are available...

A high-tech example:



This is an example of a symbol based AAC device for students of all cognitive levels.

# Hearing

If a student is having difficulty hearing in a large classroom or other environment...

A mid-tech example:



A Portable FM Sound Loops can be easily installed in any environment and used by a student with a T-Switch feature on their hearing aid.

# Seating and Positioning and Mobility

If the student has difficulty functioning in the classroom or transitioning from classroom to classroom because of poor positioning or mobility..

A mid-tech example:



A posture-control walker is designed to make walking less energy consuming, improve alignment and maximize potential for walking.

# Listening/Attending

If a student has a difficult time with focus and attention...

A mid-tech example:



An amplification system highlights (by classroom speaker or personal headset) the teacher's voice as the critical feature to attend to in the environment.

# Recreation and Leisure

If the student has difficulty participating in recreational and extra-curricular activities....

A low-tech example:

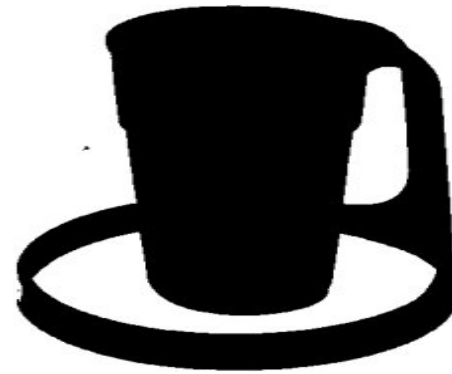


Self-opening scissors require only half the hand strength of conventional scissors. Wide finger loop for easy grip. For those with very limited hand movement, fingers can be placed over the loop.

# Activities of Daily Living

If a student has difficulty completing basic functional living tasks...

A low-tech example:



A wide variety of adaptive living aids are available from a range of manufacturers to address the needs of individuals with both physical and cognitive based disabilities. The above is a plastic drinking cup designed to minimize spills by someone with poor motor control.

# Transition to Adult Life

If the student is having difficulty adjusting to the responsibilities associated with adult life in work, school, and the home environment...

A mid-tech example:



Programmable Watches can serve as a reminder and to prompt when certain activities need to be initiated or completed.

# Behavior

If the student has challenging behaviors that interfere with his/her education...

A low tech example:

David's Monday Schedule

 hang up jacket	Get ready for class	 sit at desk
 show and tell	Show the class something special you brought from home	
 desk work	Work at your desk on what the teacher give's you to do	
 lunch	Get your lunchbox and eat what is in it	 lunch box
 recess	Go outside and play with class	
 story time	Sit on mat and listen to teacher read a story	 sit on mat
 time to play	Play until Mom comes to pick you up	

A “Visual Schedule” can be used to assist the student to sequence and complete activities.

# Summary of 16 Performance Areas

- Performance Areas are those for which AT has been proven to demonstrate an impact.
- Performance Areas are related directly to the individual task or tasks the IEP has identified as being difficult for the student.
- Only a few of these areas will apply to most students.



# **AT and the IEP Process**

# NJAC 6A:14

## Individualized Education Program

### 6A:14-3.7 Individualized Education Program

(c) When developing the IEP, the IEP team shall:

9. Consider whether the student requires assistive technology devices and services:
  - i. The district board of education shall ensure that assistive technology devices or assistive technology services, or both, as defined in IDEA, are made available to a student with a disability if required as part of the student's special education, related services or supplementary aids and services.
  - ii. On a case-by-case basis, the use of school-purchased assistive technology devices in a student's home or in other settings is required if the IEP team determines that the student needs access to those devices in order to receive a free, appropriate public education.

# **When do we think about Assistive Technology?**

- Prior to the IEP Meeting
- During the IEP Meeting
- After the IEP Meeting

# Prior to the IEP Meeting

## Information Gathering

*Who is involved??*

and

*What information* will assist in determining whether or not assistive technology is needed as a component of the student's instructional program??

# Who may be involved in the gathering of information prior to the IEP Meeting?

- Special Education Teachers
- General Education Teachers
- CST members
- Parents/Family Members
- **Student**
- Peers
- Related Service Personnel (OT, SLS, PT)
- Community Learning Site personnel
- Specials Teachers (Art, Music...)
- Administrators
- Others familiar with the student in their school environments
- AT Specialist

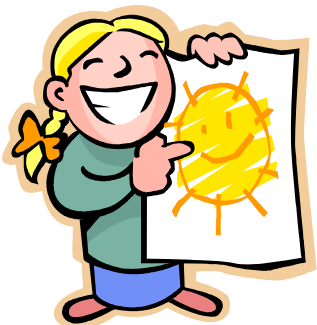
# Parent's Role in Information Gathering

## **YOU KNOW YOUR CHILD BEST**

Parents contribute by sharing their own observations, potential recommendations, and concerns

**AND**

providing requested information to various educational professionals.



# Finally...



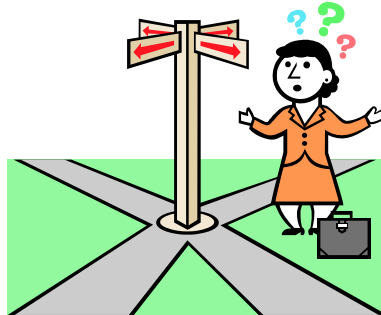
Do you think your child/student exhibits difficulties in any of the Performance Areas which may require an AT device or service?



<b>Performance Area</b> <b>(Handout Provided)</b>	<b>Area of Strength</b>	<b>Area of Concern</b>	<b>NOTES: You can list specific tasks that your child excels at or may be experiencing difficulty with...</b>
<b>Calculation:</b> Does your child have a hard time handling math manipulatives or understanding basic calculation concepts?			
<b>Reading:</b> Does your child read at a lower level than his/her peers or struggle with the written word?			
<b>Spelling:</b> Does you child spell at a lower level than his/her peers or experience difficulties with spelling strategies?			
<b>Compose Written Material:</b> Does your child have difficulty composing written work in the classroom and/or at home?			
<b>Mechanics of Writing:</b> Does you child have difficulty producing legible written work in the classroom and/or at home?			
<b>Computer Access:</b> Does your child have difficulty accessing or controlling the computer through a standard keyboard or mouse?			
<b>Activities of Daily Living:</b> Does your child have difficulty performing basic self care tasks?			

# During the IEP Meeting

## Decision-Making



**How is the gathered information  
used for IEP decision-making  
regarding Assistive Technology?**



# IEP Team Discusses:

- The student's strengths, abilities, preferences and interests;
- Performance Areas of concern;
- Current instructional strategies, accommodations, modifications or AT which are effective for the student and how they are being implemented across the content areas;
- Specific tasks or activities in which the student is struggling and for which AT may be utilized;

# After the Discussion the IEP Team Shall:

- Consider if any Accommodations are necessary
- Consider if any Modifications are necessary
- Consider if any AT Devices and/or Services are required to support the student's access to the curriculum and GE learning environment

# Possible Outcomes of Consideration of AT

- Conclude that current *AT* devices and services are meeting present needs

**-OR-**

- Identify appropriate *AT* devices and/or services to meet present needs

**-OR-**

- Conclude that additional information is required or additional assessments are needed to address the *AT* needs of the student

**-OR-**

- Conclude that no *AT* devices and/or services are needed at this time

# After the IEP Meeting



## Implementation and Coordination of AT Devices and Services

Implementation is the key to the successful integration of AT into the student's overall educational plan.

# Best Practices in Implementation May Include:

- Identification of school personnel responsible for implementation of AT services
- Establishment of a time schedule for implementation
- Coordination of AT services
- Acquisition of appropriate devices/services
- Conducting trial periods (**See handout**)
- Monitoring impact of AT devices and services on student performance across the school day

# Measurable Impact on Student Performance

Successful implementation of AT can result in observable changes in student performance demonstrated through:

**Increased Independence** - Tasks previously done for the student can now be done independently with greater speed, less reliance on others and with better control.

**Increased Participation** - Students who were unable or afraid to participate in class can now participate in classroom activities with increased conversations, increased interactions with peers, and increased socialization.

**Increased Access** - Students who were unable to complete classroom assignments can now access the same materials as their classmates leading to increased potential for learning as well as increased quality, quantity and accuracy of work.

# Parent's Role in Implementation

- Maintain communication between school and home regarding the use of the device
- Know how the device works and how your child is using the device in school
- Engage your child in conversation regarding the use of the device
- Provide observations and feedback to school personnel and your child
- Stay knowledgeable about AT and its role in accessing the curriculum, developing friendships/social networks, and supporting the inclusion of your child in general education classrooms.

# Summary of AT Decision-Making Process

SEE HANDOUT PROVIDED



# Resources

# Assistive Technology Resources for Parents and Families

- A variety of organizations exist to promote the concept of Assistive Technology (AT), provide education or information about specific products, and to serve as an overall resource for professionals/parent/caregivers seeking information pertaining to some aspect of AT. We have included a comprehensive yet not exhaustive list of available resources.

**SEE HANDOUT PROVIDED**

*All students  
must be headed in the same  
direction, even if they are traveling at  
different speeds, or in different  
vehicles.*



~ Barbara Gantwerk ~  
Assistant Commissioner  
New Jersey Department of Education