

Introduction to Assistive Technology (AT) for Young Learners

Trainer's Manual



Training materials created by the Technology to Improve Kids' Educational Success (TIKES) Project, a project of PACER Center: PACER.org/stc/tikes

Introduction to Assistive Technology (AT) for Young Learners

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Introduction to Assistive Technology (AT) for Young Learners

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Introduction for Trainers

This training material was developed in response to a need based on research findings that assistive technology (AT) is underutilized with children ages birth to 5. That same research also shows that AT can have a significant impact in a short amount of time. Designed with input from Technology to Improve Kids' Educational Success (TIKES) participants, it is intended to help early intervention and early childhood professionals build their capacity for assistive technology and leverage this knowledge to improve outcomes for children with disabilities. A solid foundation and understanding of AT is a first step in what for most children with disabilities is a lifelong journey. Technology will grow and change as they do but may always be a part of their life.

Intended Audience: Historically, parents find out about assistive technology from other parents and not their child's teachers. The intended audience for these training materials is early intervention and early childhood special education teachers to present to their peers and to parents of children they work with.

Purpose and Goal of Training: Many families, and the professionals who work with their children, wonder if their son or daughter could benefit from the use of assistive technology. The goal of this session is to help families, caregivers, and professionals understand the breadth and scope of AT available for young children. Participants will learn what assistive technology is, about the continuum of AT from the very simple to the highly complex, and about the categories of AT. They will also explore a variety of assistive technology with your help.

Workshop Objectives:

Participants will learn about the following:

1. Federal definition of assistive technology
2. Role of assistive technology for infants, toddlers, and preschoolers
3. Benefits of assistive technology
4. Myths related to the use of AT by young children with disabilities
5. Research that supports the use of AT with young children
6. Continuum and categories of assistive technology

Supplies Needed for This Training

1. Most sections contain "related resources" that can be provided to attendees in a packet.
2. Presenters will need a computer, LCD projector, a screen, and a variety of assistive technology tools to share with participants.

Evaluations: Participant evaluations are an important component of any training. Please distribute evaluation forms (located in the appendix) and collect these from all participants. Please send summary of evaluations to: PACER Center, TIKES Project, 8161 Normandale Blvd., Minneapolis, MN 55437, or email to TIKES@pacer.org.

References: This training material is based on an extensive review of the literature, as well as existing training tools and educational material on using assistive technology with young children with disabilities.

Tips for Trainers

You are the key to making this training a success. Knowing your community and bringing your own experience and stories will make the training engaging and relevant for your peers and the families you work with. This training material is based on extensive review of the literature, as well as existing training tools and education materials designed to provide core topical information based in research and best practice. Focus groups and pilots by TIKES project participants have been conducted to ensure the content is high quality, useful, and relevant.

Tips

1. PowerPoint Slides — These can be edited and revised as you feel necessary to engage your audience. This includes eliminating or adding slides, and using different wording or images.
2. Preparation — Information is provided on each slide as a way to prepare your own remarks and examples for the session. Presenters' notes are not meant to be a script. Feel free to organize or add to these notes as needed.
3. Activities, Stories, and Examples — Use “Related Activities” as a way to structure the activities for your audience. Activities, stories, and examples allow participants to better relate information to their own lives and understand how to apply what they are learning.
4. Information Packets — Use “Related Resources” and handouts found in the appendix of this training material as a starting point to create information packets for participants. Add your own handouts and information on local resources. Packets should include TIKES Workshop Evaluation Form (for use at the end of the training).
5. Translations — Translations are provided of the PowerPoint, TIKES evaluation, and handouts. The slides can be revised as you feel necessary to engage participants. This includes eliminating or adding slides, and using different wording or images. Please contact a member of the TIKES team at PACER to receive the handout as a Word Document that can be edited.

Specific to This Training Material

This training material is intended to be delivered to your peers and parents of children ages birth to 5 with all types of disabilities. The use of assistive technology is based on the child's specific needs and can benefit all ages and all disabilities.

Slide 1: Title Page

Title slide.



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Slide 2: Workshop Information

Workshop presenters may wish to insert location, date, and name of presenters on this slide.

Intro to Assistive Technology (AT) for Young Learners Training materials created by PACER Center for Technology to Improve Kids' Educational Success (TIKES) Project

- Paula Goldberg, PACER Center Executive Director
- Bridget Gilormini, Director PACER's Simon Technology Center

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Federally Funded Early Childhood and Assistive Technology Grants

- Education priority based on research that shows assistive technology is underutilized by children with disabilities ages birth to 5
- One of three grants awarded in the country by U.S. Department of Education's Office of Special Education Programs (OSEP)
- You play an important role in equipping not only yourselves but future early intervention and early childhood providers and teachers across the U.S.

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Slide 3: Federally Funded Early Childhood and Assistive Technology Grants

PRESENTER NOTES

TIKES or Technology to Improve Kids' Educational Success is one of three early childhood and assistive technology model demonstration grants awarded nationally. This education grant is based on a priority to improve outcomes for children with disabilities ages birth to 5 by leveraging the use of assistive technology to bridge developmental and achievement gaps. Research shows that assistive technology is underutilized and under documented for children

with disabilities ages birth to 5. The majority of families do not learn about assistive technology from their teachers or providers but from other families. This grant is about developing a model of training materials to equip and support educators and families by increasing their knowledge and awareness of assistive technology and helping them identify appropriate technology solutions for their children or students.

Slide 4: About PACER Center

PACER Center

- An established parent center providing important information to parents and educators for more than 35 years
- More than 30 different programs
- www.pacer.org
- 952-838-9000

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PRESENTER NOTES

PACER Center is a parent center built on the premise of parents helping parents. For more than 35 years, PACER Center has been helping families advocate for the educational rights of their children. PACER Center also works closely with schools and school districts, educators, and providers to help them understand the parent perspective, provide valuable staff training resources, and offer resources from over 30 different programs that include transition, bullying, juvenile justice, early childhood, state personal development grants, and many more.

Slide 5: About the Simon Technology Center

Simon Technology Center

- Celebrating over 27 years of assistive technology services and projects
- Dedicated to making the benefits of technology more accessible
- www.pacer.org/stc
- 952-838-9000

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PRESENTER NOTES

For over 27 years, the knowledgeable staff of the Simon Technology Center have been making the benefits of assistive technology accessible to families, educators, and consumers. The STC does this through a variety of core services and assistive technology projects that include free assistive technology explorations with families and their children, information and referral services, workshops, and a vast AT lending library to support the exploration of assistive technology.

Slide 6: Session Agenda

PRESENTER NOTES

“An Introduction to Assistive Technology for Young Learners” is a workshop designed to help educators and families learn about and use assistive technology to help young children develop, learn, and grow.

Assistive technology is a broad category of specialized technology that helps learners of all ages do something that without this technology they could not do. For young learners, introducing assistive technology can be very powerful in helping them to participate in their daily routines and activities at home, at school,

and in the community. Today we will be giving you an overview of assistive technology. We will talk about the continuum and categories of assistive technology. We’ll spend some time trying a variety of technology as we introduce each category. It is also important to know what the research says about assistive technology. We will share some articles you may be interested in reading and summarize some of the findings.

Session Agenda

1. What is assistive technology?
2. Continuum and categories of assistive technology
3. Hands-on with assistive technology

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Slide 7: Session Agenda, continued

Session Agenda

4. What the research says about assistive technology
5. Closing thoughts, questions, and evaluations

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What is Assistive Technology (AT)?

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 a child with a disability.

–IDEA 2004

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Slide 8: What is Assistive Technology (AT)?

PRESENTER NOTES

Assistive technology devices and services were first defined in federal law in the Individuals with Disabilities Education Act of 1990. These definitions remained unchanged until 2004 with the passage of the Individuals with Disabilities Education Improvement Act when the definition of an assistive technology device was added to clarify what a school system's responsibility is regarding surgically implanted technology such as cochlear implants.

RELATED ACTIVITY OR QUESTIONS

- How does this definition challenge or confirm participants' ideas about assistive technology?
- Based on this definition, do participants feel that they are active users of assistive technology?

OSEP Part C Clarification Letter

“AT devices are required only if they relate to the developmental needs of the infants and toddlers served by the program”

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Slide 9: OSEP Part C Clarification Letter

PRESENTER NOTES

Further, “linking the provision of those devices to an education benefit is not appropriate under a program that serves children from birth to age three.”

Link to OSEP Part C Clarification Letter:
<http://www2.ed.gov/policy/speced/guid/idea/letters/2003-1/goodman032503earlyinter1q2003.pdf>

All children develop within the context of everyday activities which are the primary source of learning opportunities for a child. There are

five developmental domains to consider: Physical, social-emotional, language, cognitive, and adaptive. These developmental areas are inter-related, overlapping, predictable, uneven, and unique for every child. Participation is critical to a child's development and in the context of routines provides both planned and unplanned learning opportunities, and allows for a child to practice functional skills. Everyday routines have many contexts and occur in the home or community, at mealtime or during outside play, and at birthday parties and dance class.

Keep in Mind That...

- AT for infants & toddlers looks different than AT for students and adults
- AT for infants & toddlers is used to support a child's development
- Many changes occur as children grow, requiring dynamic use of AT

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Slide 10: Keep in Mind That...

PRESENTER NOTES

AT for infants & toddlers looks different than AT for students and adults; AT for infants & toddlers is used to support a child's development; and many changes occur as young children grow which requires dynamic use of AT.

Why Use AT?

Assistive technology helps children with disabilities (ages birth to 5) participate in everyday activities in order to grow and learn

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Slide 11: Why Use AT?

PRESENTER NOTES

The purpose of assistive technology is to create opportunities for children. All children need interactions that will allow them to grow and change. Assistive technology needs to be built into the daily routines and activities of the child. Through these opportunities assistive technology can be the bridge from where a child is to where a child could or should be.

RELATED ACTIVITY OR QUESTIONS

Ask each participant to think of their own child or a particular student with a disability. Have them write down three opportunities they would

like this child to have. Ask them to keep this child and the opportunities in mind throughout the workshop.

What Are the Benefits of AT?

- Enhance communication
- Increase independence
- Broaden life opportunities



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Slide 12: What are the Benefits of AT?

PRESENTER NOTES

AT creates opportunities for children to communicate and participate in a way that would not be possible without the use of assistive technology. It increases their ability to do it themselves and empowers children to experience all of life's opportunities.

What Are the Benefits of AT?

- Increase participation
- Promote development
- Enhance learning
- Boost self-esteem



Meet Mason

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Slide 13: What are the Benefits of AT? (continued)

PRESENTER NOTES

Assistive technology helps children build new skills or use the ones they already have. It also allows children to be an active part of their family, classroom, and community. It can increase their participation in activities, promote their development, enhance their learning, and boost their self-esteem.

RELATED ACTIVITY OR QUESTION

Let's look at one example of AT in Action. Meet Mason, a young learner who has and continues to

use assistive technology to help him learn, grow, and develop.

MEET MASON YOUTUBE VIDEO

<http://www.youtube.com/watch?v=IcUNnnwFm4g>

Slide 14: True or False

True or False

There are prerequisite skills that a child must have before using AT, including the understanding of cause and effect.

(Dugan, et al., 2006; Wilcox, et al., 2006; Wilcox, et al., 2006)

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PRESENTER NOTES

False. It is a myth that children must already possess certain skills before they can use or benefit from assistive technology. The truth is that all children can use and benefit from assistive technology.

RELATED ACTIVITY OR QUESTIONS

Ask the participants to think about a child again. Discuss what skills this child has and what skills they believe the child might need before using AT.

Slide 15: No Prerequisites

No Prerequisites

There are no prerequisites for using AT.

(Dugan, et al., 2006; Wilcox, et al., 2006; Wilcox, et al., 2006)

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PRESENTER NOTES

Because it is important, let's say it again. There are NO prerequisites for using AT. Even infants can grow, learn, and increase family and community participation with the use of AT.

Slide 16: True or False

True or False

Assistive technology can hinder development.

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PRESENTER NOTES

False. It is a myth that AT will inhibit development in children. The research actually shows the opposite.

Research

Research supports that in even a short amount of time, the introduction of assistive technology can make a large difference.

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Slide 17: Research

PRESENTER NOTES

Research supports that even in a short amount of time the introduction of assistive technology can make a big difference.

Research

Data suggests that the use of AT can significantly improve outcomes for infants and toddlers and improve both socio-emotional and pre-academic skills.

(Campbell, et al., 2006; Dugan, et al., 2006; Moody, 2012; Wilcox, et al., 2006)

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Slide 18: Research

PRESENTER NOTES

With the use of AT, children can build new academic, social, and emotional skills, often at a rate that is much faster and more effective than building those skills without the use of AT.

RELATED ACTIVITY OR QUESTIONS

Ask participants to think about and discuss a tool they have used in the past to help them master a task or skill.

- How does this experience relate to a child using AT?

The Assistive Technology Continuum

<p>Without Any Technology Simple Modifications</p>	<p>Medium Technology Relatively Complicated Mechanical Devices</p>
<p>Low Technology Less Sophisticated Affordable Tools</p>	<p>High Technology Very Advanced Incorporate Computers</p>

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the needs of the child. It is also likely that a child will benefit from an array of technology across the continuum depending on what their needs are.

RELATED ACTIVITY OR QUESTIONS

Give each table or group of participants a bag with four to eight assistive technology items and give them 10 minutes to explore and discuss their items within the smaller group. Give each group a different selection of assistive technology tools.

The Assistive Technology Continuum

Without Any Technology
Simple Modifications



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schedule, social stories, reward charts, behavior charts, and much more.

RELATED ACTIVITY OR QUESTIONS

Ask the small groups to identify their items without any technology components. Have them report to the group about what the item is (or what they guess it is) and how it might be helpful to a young child.

Slide 19: The Assistive Technology Continuum

PRESENTER NOTES

When individuals talk about AT, devices and systems are put on a continuum ranging from no technology to high technology. On one end of the continuum there are simple non-electronic devices. Looking higher up on the continuum, things become more complicated, have more moving parts, have batteries and wires, and generally can be more costly. It is also important to remember that low tech is not better than high tech and high tech is not better than low tech. It is about matching the right technology with

Slide 20: The Assistive Technology Continuum – Without Any Technology

PRESENTER NOTES

AT Items without any technology components are very simple adaptations that have no working parts. They include things like pencil grips or visual supports. Pencil grips come in an array of materials, shapes, and weights and are meant to help the child improve their grasp of the writing tool such as a pencil or a crayon. Visual supports are used to support learning and understanding. They consist of objects, pictures, gestures, etc. Some recognizable examples include morning

The Assistive Technology Continuum

Low Technology

Less Sophisticated
Affordable Tools



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Slide 21: The Assistive Technology Continuum – Low Technology

PRESENTER NOTES

Low tech items are items that have simple parts and batteries. Components are simple and easy to operate. They include things like toys with lights, vibrations, and textures that you can purchase at a toy store.

RELATED ACTIVITY OR QUESTIONS

Ask the small groups to identify their low technology item(s). Have them report to the group about what the item is (or what they guess it is) and how it might be helpful to young a child.

The Assistive Technology Continuum

Medium Technology

Relatively Complicated
Mechanical Devices



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Slide 22: The Assistive Technology Continuum – Medium Technology

PRESENTER NOTES

Medium technology items are becoming more sophisticated. They have more moving parts and may take some time to learn and implement. They include things like switches used to activate a toy and communication devices programmed by an adult to provide a voice to a child who has limited or no speech.

RELATED ACTIVITY OR QUESTIONS

Ask the small groups to identify their medium technology item(s). Have them report to the group about what the item is (or what they guess it is) and how it

might be helpful to a young child.

The Assistive Technology Continuum

High Technology

Very Advanced
Incorporate Computers



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Slide 23: The Assistive Technology Continuum – High Technology

PRESENTER NOTES

High tech AT consists of devices that have complex electronic components and moving parts. They include things like computers and high tech communication devices with a feature called dynamic display.

RELATED ACTIVITY OR QUESTIONS

Ask the small groups to identify their high technology item(s). Have them report to the group about what the item is (or what they guess it is) and how it might be helpful to a young child.

Categories of Assistive Technology

- Aids to daily living
- Mobility and positioning
- Vision and hearing
- Computer access



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Slide 24: Categories of Assistive Technology

PRESENTER NOTES

We also put AT into broad categories to make it easier to talk about. The next two slides list all of the categories traditionally used to talk about assistive technology. In the upcoming slides, each category will be defined and examples of items that fall into each category provided. There is some crossover between categories, but you will find that most AT devices fit well within these areas.

1. Aids to daily living provide support in daily routines and activities such as eating, bathing,

sleeping, etc. Pictured here is a spoon designed with a handle that makes it easier to grip.

2. Mobility and positioning is a category that is designed to help people with physical disabilities get around and be in the proper position to participate in daily routines and activities. Pictured here is a power mobility device.
3. The category of vision and hearing addresses tools that help people with the range of vision and hearing disabilities, including blindness and deafness. Pictured here is an example of braille labeling.
4. The category of computer access consists of tools that help someone overcome the barrier that having a disability presents and provides access to a computer or tablet device. Pictured here is a joystick mouse which allows the user to access the pointer on the computer, move it across the screen, and make selections as someone else might use a traditional computer mouse.

The above descriptions talk about the pictures layered and embedded within the PowerPoint that will be shown during the electronic presentation of this slide.

Slide 25: Categories of Assistive Technology (continued)

Categories of Assistive Technology

- Education
- Communication
- Recreation
- Sensory aids
- Environmental control



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PRESENTER NOTES

5. Assistive technology for education helps children with educational goals such as reading and writing. Pictured here is the Bookworm, a device by AbleNet designed to help give a child independent access to reading, shared reading, etc. Individual pages of the book can be recorded and then accessed by the child with the push of a button or switch.

6. Assistive technology for communication helps children find and use their “voice.” It is appropriate for children with little or no speech

or unintelligible speech. Pictured here is an eye gaze system where letters are used to form words.

7. Recreation is an important part of life so we have assistive technology that helps us access recreation activities. This includes games, toys, sports, etc. Pictured here are small manipulatives tethered to a piece of felt.
8. Assistive technology for sensory aids provides children either with needed sensory input or a calming effect when there has been too much sensory input. Pictured here is a disco sit. The bumps on this round disc provide sensory input to a child who is sitting in a chair or on the floor which may help them focus and pay attention during a routine or activity.
9. Environmental controls help give children access to a wide variety of home and school tools such as a blender, radio, TV, etc. Pictured here is the Power Link which allows the user to control things that plug in.

The above descriptions talk about the pictures layered and embedded within the PowerPoint that will be shown during the electronic presentation of this slide.

Slide 26: Aids for Daily Living

PRESENTER NOTES

First we will talk about assistive technology for daily living. This category includes items that assist in self-care and daily living. Items such as dressing aids, adapted feeding tools, and AT for personal hygiene fall into this area.

1. Pictured here is a utensil cuff designed to be used by a child with limited functionality of the hands to improve their ability to grasp and use forks and spoons. It can be used with handles of many sizes and shapes.

2. Next we have a nose cup which is a standard type cup with a cut out for the nose to

allow drinking without bending the neck or tilting the head. Some nose cups also come with handles.

3. For our last example we have elastic shoelaces. The elastic shoelaces allow a child to put on their shoe and get a snug fit without having to be able to tie their shoes.

The above descriptions talk about the pictures that will be shown during the electronic presentation of this slide.

Aids for Daily Living

- Feeding and eating aids
- Dressing and grooming aids
- Bathing and toileting aids
- Executive function aids
- Sleeping aids
- Fine motor development aids



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Slide 27: Mobility and Positioning

PRESENTER NOTES

Mobility and positioning is a category that people are most familiar with today. This category includes devices that vary a great deal in complexity. There are very low tech items like a bean bag chair and devices as complex as a power wheelchair.

1. Wheelchairs come in many sizes and with a variety of technology capabilities. Wheelchairs are designed to improve mobility.

2. Gait trainers are designed for use by people

of all ages who have a physical disability. It is a wheeled device that helps a person who is unable to walk independently to learn or relearn to walk safely and efficiently as part of gait training.

3. A walker is also designed to help with independent mobility and provide support.

4. Positioning forms are designed to help provide support for babies and toddlers who have low tone or difficulty maintaining a position.

5. Stenders provide partial weight bearing support to help strengthen critical motor skills so a child can progress toward independent standing. They also provide alternate body positions for children with physical disabilities.

The above descriptions talk about the pictures layered and embedded within the PowerPoint that will be shown during the electronic presentation of this slide.

Mobility and Positioning



- Wheelchair
- Gait trainer
- Walker
- Positioning aids
- Stander

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Go Baby Go: Video



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Slide 28: Go Baby Go

PRESENTER NOTES

For very young children there are few choices when it comes to mobility devices. Cole Galloway from the University of Delaware and a team of people are trying to change this by adapting readily available motorized cars designed for young children and modifying them for children with disabilities. Let's look at this video about the possibilities of powered mobility for young children.

LINK TO YOUTUBE VIDEO

How One Man's Trip to Toys 'R' Us Brought Mobility to Hundreds of Kids With Disabilities -

<https://www.youtube.com/watch?v=U-NE7B0RTdA> (4:48).

Vision and Hearing

- Lighted visual display
- Magnifiers
- Braille display
- Screen reader
- Talking products
- Digital book players
- Alerting devices
- Assisted listening devices



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Slide 29: Vision and Hearing

PRESENTER NOTES

Assistive technology for vision and hearing is also a category that people are familiar with today. However, it is a much bigger category than many realize. Audio books use technology to provide live or electronic narration of a book and are in this category, as well as large print text and vibrating phone alerts.

1. A light box is designed to help teach basic visual skills as well as more complex visual-motor and visual-perceptual skills. The high contrast background created by the light box's illuminated surface makes a variety of visual tasks easier to

perform. The goal is that using brightly colored items will motivate students to use their vision. There are many devices that help magnify what someone is looking at.

2. Pictured here is a magnifying bar designed to help magnify words and lines in printed material such as in a book or worksheet.
3. Screen readers (not pictured) are computer software that use a computer voice to read a variety of text or help someone with a visual impairment navigate the computer screen.
4. The personal sound amplifier helps someone with a hearing impairment hear important noise such as the teacher talking while minimizing potentially distracting background noise. The amplification of the teacher is better than the amplification of the noise.
5. The vibrating alarm clock provides an alternate alerting system to someone who cannot hear the clock's auditory alarm.

The above descriptions talk about the pictures layered and embedded within the PowerPoint that will be shown during the electronic presentation of this slide.

Slide 30: Computer Access

Computer Access

- Alternative keyboards
- Adapted mice
- Guided computer interface and safety controls
- Computer accessibility
- Switches
- Switch interface



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PRESENTER NOTES

Computer access is a category of technology that helps children use traditional technology like a computer. There are a wide range of access methods including a smaller size mouse, a joystick, or rollerball mouse. There are also more complicated scanning and switch systems that make computing accessible to a wide variety of users.

1. Alternative keyboards come in a variety of shapes, sizes, and configurations, including a plug and play keyboard that plugs in and works instantly, a programmable keyboard which gives

more flexibility in creating layouts, and an onscreen keyboard pictured here is a small colorful QWERTY layout.

2. Trackballs and joysticks provide alternative ways of moving the mouse and interacting by clicking, selecting, and moving things.
3. The touch screen allows users to interact with the content on the computer by touching the screen. The finger essentially becomes the mouse, allowing you to select things, move things and much more.
4. When other options do not work, then we might look at a switch. Switches come in a wide range of sizes, touch sensitivity, and function.
5. Along with a switch, we need a switch interface which is a device that helps the computer understand what the switch is telling it to do.

The above descriptions talk about the pictures layered and embedded within the PowerPoint that will be shown during the electronic presentation of this slide.

Slide 31: Education

Education

- Adapted books
- Accessible books
- Adapted paper
- Adapted writing tools and grips
- Writing positioning aids
- Math manipulatives
- Alternative calculators



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PRESENTER NOTES

The education category is particularly important for young children and assists them in participating in classroom activities. It allows them to access instructional and play materials in novel ways and helps them build those priceless early skills that will be the base for their future learning success.

1. Electronic digital books often combine elements of print with audio, making them very interactive and engaging.
2. A talking calculator provides audio support for numbers and calculations. This one is also large for someone with vision or motor difficulty.

3. Adapted paper consists of tools such as raised line paper, different weights or thickness of paper, and more. Raised line paper provides a visual and tactile boundary of where writing should occur.
4. Audio books are live narrated books or books read with a computer voice.
5. Adapted writing grips help the user interact with a writing tool to write, color, and draw.
6. Adapted scissors provide support when cutting is difficult with traditional scissors.

The above descriptions talk about the pictures layered and embedded within the PowerPoint that will be shown during the electronic presentation of this slide.

Slide 32: Communication

Communication

- Picture symbols
- Single message device
- Mid-tech voice output device
- High-tech voice output device



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PRESENTER NOTES

Communication is also a crucial category. Children who are able to communicate effectively are able to have their needs met, express thoughts and emotions, and build relationships with those around them. Assistive technology for communication can be as simple as a picture symbol and as complex as a dynamic display device. As previously mentioned, there are no prerequisites for introducing a tool to help increase speech and language skills. The pictures selected here represent the continuum of communication.

1. Picture communication uses symbols or picture representations to communicate a single concept. Here you see what might be called a PECS (Picture Exchange Communication System) book with a variety of symbols that the users search through to communicate their intent. The picture symbols include items commonly found in a user's book (e.g., food, activities, rewards, etc.).
2. Moving up the continuum, we have a single message device. This particular one is called a Big Mac. Typically a single message is programmed on the device and placed near an activity or the user to support communication. A common first message might be, "I want more juice."
3. Next we have a mid-tech device. There are approximately 32 "cells" containing a variety of words. A voice recording is made for each word or selection. The user directly selects them with a finger. If that is not possible, the user can activate a switch or get help from a communication partner, which is often a parent, a sibling, or a teacher.
4. Highest on the continuum are sophisticated devices with many features. Pictured here is an iPad with the communication app Proloquo2Go. These more sophisticated, complex devices often come pre-loaded with a wide range of vocabulary and function and can be customized by the parent or teacher for the individual user.

It is important to understand the **language system** of the many devices available when choosing a device for a user.

The above descriptions talk about the pictures layered and embedded within the PowerPoint that will be shown during the electronic presentation of this slide.

Slide 33: Recreation

Recreation

- Adapted arts and crafts
- Adapted sports equipment
- Adapted toys
- Adapted play



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PRESENTER NOTES

Play is essential to early childhood development. It is through play that children learn to interact with their physical and social worlds. Assistive technology can improve a child's ability to learn through both structured play and free play, and helps build peer relationships.

1. Adapted art tools like these special paint brushes provide a different kind of grip that makes it easier to use and manipulate to create art.
2. Adapted bikes give children the opportunity to pedal and participate in an activity common to many children.

3. Adapted toys allow children to control something with a switch, with sound, and engage in an activity that brings them learning and socialization opportunities. It also brings them joy!
4. Adapted swings provide a safe, supportive environment to give children the opportunity to engage in another common play activity.
5. Adapted games give players of all abilities access to the same games and play opportunities.

The above descriptions talk about the pictures layered and embedded within the PowerPoint that will be shown during the electronic presentation of this slide.

Slide 34: Sensory Aids

Sensory Aids

- Tactile toys and fidgets
- Auditory stimulation
- Deep pressure and weighted items
- Choice board with calming choices



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PRESENTER NOTES

Many people are surprised by the category of sensory aids. Yet this category is truly as important as all of the others. Children who are receiving too much or too little sensory input are not able to focus on pre-academic or social skills. Sensory AT helps children focus on these skills by giving them extra sensory input. It can also be a way of providing a calming strategy in response to an overload of sensory input.

1. Tactile toys and fidgets provide little fingers and hands something to do. They can help the user pay attention and fidget in an appropriate manner.

2. Noise cancelling headphones help block out sound when noise is too much sensory input for the child. It helps children participate in activities that they may not have been able to because of the noise.
3. Weighted vests provide sensory input at the vestibular system, helping to calm and regulate the sensory nervous system.
4. Calming choice boards help the child learn about and understand their bodies and how they operate, and how to make choices to regulate their sensory system.

The above descriptions talk about the pictures layered and embedded within the PowerPoint that will be shown during the electronic presentation of this slide.

Slide 35: Environmental Controls

Environmental Controls

- Control access:
 - Direct, voice, switch, remote, and eye gaze
- Wired and wireless
- Automated controls
- Mobile device controls



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PRESENTER NOTES

Environmental controls allow the user to participate in and impact their environment. It can include using a remote control to turn a bedroom light on and a switch to turn a television on and off.

1. Pictured here we have a switch and switch interface being used to control music on an iPod or iPhone. The device is being held by a suction cup table mount.
2. Next we have a device called the Wemo which uses an app to interface with the device

and control things that you plug into the device such as a lamp.

The above descriptions talk about the pictures that will be shown during the electronic presentation of this slide.

RELATED ACTIVITY OR QUESTIONS

Ask participants to categorize the items from their bag of assistive technology. Discuss as a large group any item that does not fit neatly into one category. Discuss how many assistive technology tools can achieve multiple goals in multiple categories.

- Have the participants seen or discussed any familiar objects or devices during this conversation that they did not previously view as assistive technology?
- Do the categories expand their view of assistive technology or how assistive technology is used?

Hands-on with Assistive Technology



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Slide 36: Hands-on with Assistive Technology

PRESENTER NOTES

Now let's take a look at some of the items we've been talking about. We have set up four stations with a variety of assistive technology for you to see, touch, and try.

Gather a variety of assistive technology for participants to explore. Check with a local lending library such as the Simon Technology Center to get items you may not have.

Research

- Strong research-based evidence demonstrates the positive effects of many types of assistive technology to use with children ages birth to 5
- Particularly strong evidence supports the use of switches and visual supports

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Slide 37: Research

PRESENTER NOTES

New studies are being done and published in increasing numbers. The research that exists shows strong support for the use of assistive technology for all children, including infants and toddlers. Items ranging from low-tech to high-tech have all been found to be effective. The use of switches and visual supports have been studied a great deal and research suggests both of these are extremely effective.

Slide 38: Research

Research

In a review of a number of studies done by Carl Dunst and others, a wide variety of assistive technology makes a noticeable difference in just a few sessions of use with children.

Systematic Review of Studies Promoting the Use of Assistive Technology Devices by Young Children with Disabilities.
(Research Brief Volume 8, Number 1 2013)



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PRESENTER NOTES

This slide references a synthesis of research done by Carl Dunst, Carol Trivette, Deborah Hamby, and Andrew Simkus called Systematic Review of Studies Promoting the Use of Assistive Technology Devices by Young Children with Disabilities. (Research Brief Volume 8, Number 1 2013)

RELATED ACTIVITY OR QUESTIONS

Ask participants to share anecdotal stories about the positive effects of AT in the life of a child they know.

- Are there particular items that you have seen great success with?
- Are there items you or the children you work with have struggled with using?
- If you have struggled with using items, what was the problem?
- Was the problem with the assistive technology or the way it was used?

Slide 39: Effective Use of AT

Effective Use of Assistive Technology

AT needs to be:

- Used on a consistent basis
- Integrated into daily life
- A part of daily activities and routines
- Used as a tool to interact with others



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To be effective, AT needs to become a part of the child's daily routine and be consistent across all environments. AT use should also increase and even allow children to initiate participation.

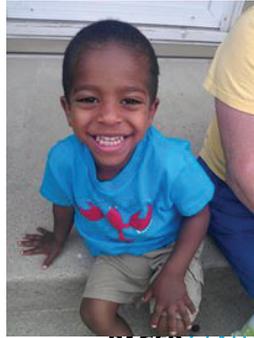
We know AT makes a difference because of the stories the educators and families share with us. In one case, a young child came to the Simon Technology Center for an exploration of assistive technology. She was physically impaired but the specialist noticed she could move her toe. The team quickly set up a switch activated toy, which was a bear that sang, and she used her toe to operate it. Her mother shared that this was the first time her daughter had controlled anything in

her life.

How precious are the words, "I love you" from a child to a parent – especially when a child who cannot verbalize those words finds a way to communicate them through technology? One child we know had difficulty with their communication skills and unlike other parents, this mom had yet to hear her child say those magical words. With the introduction of a simple 9-message communication device, the child activated a message telling her mom, "I love you." It was a joyous moment for the mother.

Closing Thoughts

Remember the child is the focus; assistive technology is a tool to help the child.



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Slide 40: Closing Thoughts

Assistive technology devices can be powerful tools, but we need to be aware that they are tools. The child and the child's needs are the most important part of the equation. Teachers and parents play a critical role in identifying those needs and identifying technology that might help.

RELATED ACTIVITY OR QUESTIONS

Ask participants to think back to the child they thought about in the first part of the presentation.

- Did they see a piece of AT that might be appropriate for that child?
- What about that child makes that piece of AT an appropriate choice?

Closing Thoughts

AT is a powerful tool that will improve learning and positive outcomes for children.



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Slide 41: Closing Thoughts

With the right device, assistive technology can be a powerful tool to improve outcomes for children and increase their opportunities for learning.

RELATED ACTIVITY OR QUESTIONS

Encourage participants to think first about the child and then about the desired outcome. Remind them that this is an introduction and that as they move forward in the workshop series, they will learn more about AT devices, how to implement the use of AT in the home and classroom, and most importantly, how to keep the child in mind when exploring AT.

Questions?

Slide 42: Questions

PRESENTER NOTES

Thank you for letting us share this very important topic with you. Please take a minute to complete the TIKES workshop evaluation. We appreciate your feedback and comments very much.

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Slide 43: Contact Information

Contact Information

Technology to Improve Kids'
Educational Success (TIKES)

PACER.org/stc/tikes
952-838-9000

Funded by the U.S.
Department of Education,
Office of Special Education
Programs (OSEP)

TIKES is a project of
PACER Center

PACER.org | 952-838-9000 | 888-248-0822



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For information about this or other training materials available through the TIKES project, please contact them using the above contact information.

Funding Statement

The contents of this publication were developed under a grant from the U.S. Department of Education, # H327L120005. However, the content does not necessarily represent the policy of the U.S.

Department of Education, and you should not assume endorsement by the Federal Government. While permission to reprint this publication is not necessary, the citation should be: Simon Technology Center (2015). Technology to Improve Kids' Educational Success (TIKES), Minneapolis, MN, PACER Center.

Alternate formats available upon request.



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Slide 44: Funding Statement

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TIKES Workshop Evaluation: Providers

We'd appreciate your feedback on this workshop.

1. Are you a: (Please check all that apply)

- Part C (birth to 3) Educator Part B (3 to 5) Educator Administrator Para professional
 Related Service Provider (OT, PT, SLP, etc.)
 Other (please specify) _____

2. What school district are you part of?

- ISD#271 Bloomington ISD#196 Rosemount-Eagan-Apple Valley
 ISD#11 Anoka-Hennepin Other (please specify) _____

3. Are you a participant of the TIKES project?

- Yes No

4. On the whole, how would you rate this event?

- Poor Fair Good Very Good Excellent

5. Have you learned anything new at this workshop? Yes No

I found these topics most worthwhile: _____

6. I have gained awareness of the vast variety of AT options and features as a result of this training.

- | | | | | | |
|---------------------|------------|---------------------|------------------|---------|------------------|
| I strongly disagree | I disagree | I somewhat disagree | I somewhat agree | I agree | I strongly agree |
| 1 | 2 | 3 | 4 | 5 | 6 |

7. I have gained knowledge of AT, evaluating appropriateness, strategies and use of AT as a result of this training.

- | | | | | | |
|---------------------|------------|---------------------|------------------|---------|------------------|
| I strongly disagree | I disagree | I somewhat disagree | I somewhat agree | I agree | I strongly agree |
| 1 | 2 | 3 | 4 | 5 | 6 |

8. This training was of high quality.

- | | | | | | |
|---------------------|------------|---------------------|------------------|---------|------------------|
| I strongly disagree | I disagree | I somewhat disagree | I somewhat agree | I agree | I strongly agree |
| 1 | 2 | 3 | 4 | 5 | 6 |

Evaluation continues on pg. 2

9. This training was highly relevant?

I strongly disagree	I disagree	I somewhat disagree	I somewhat agree	I agree	I strongly agree
1	2	3	4	5	6

10. This training was highly useful?

I strongly disagree	I disagree	I somewhat disagree	I somewhat agree	I agree	I strongly agree
1	2	3	4	5	6

11. What suggestions do you have for improving this workshop? _____

12. Other Comments: _____

TIKES Workshop Evaluation: Parents

We'd appreciate your feedback on this workshop.

1. Are you a: (Please check all that apply)

- Parent Surrogate/foster parent Grandparent Other relative/guardian
 Other (please specify) _____

2. Parents and guardians, does your child have a: (please check all that apply)

- Individualized Family Service Plan (IFSP, birth to 3)
 Individualized Education Program (IEP, 3 to 5)
 I don't know

3. What school district are you part of?

- ISD#271 Bloomington ISD#196 Rosemount-Eagan-Apple Valley
 ISD#11 Anoka-Hennepin Other (please specify) _____

4. Are you a participant of the TIKES project? Yes No

5. Does your child have a child-specific AT plan in place? Yes No

6. Parents and guardians, what is your child's age? _____

7. On the whole, how would you rate this event?

- Poor Fair Good Very Good Excellent

8. Have you learned anything new at this workshop? Yes No

I found these topics most worthwhile: _____

9. I have gained awareness of the vast variety of AT options and features as a result of this training.

I strongly disagree	I disagree	I somewhat disagree	I somewhat agree	I agree	I strongly agree
1	2	3	4	5	6

10. I have gained knowledge of AT, evaluating appropriateness, strategies and use of AT as a result of this training.

I strongly disagree	I disagree	I somewhat disagree	I somewhat agree	I agree	I strongly agree
1	2	3	4	5	6

Evaluation continues on pg. 2

11. This training was of high quality?

I strongly disagree	I disagree	I somewhat disagree	I somewhat agree	I agree	I strongly agree
1	2	3	4	5	6

12. This training was highly relevant?

I strongly disagree	I disagree	I somewhat disagree	I somewhat agree	I agree	I strongly agree
1	2	3	4	5	6

13. This training was highly useful?

I strongly disagree	I disagree	I somewhat disagree	I somewhat agree	I agree	I strongly agree
1	2	3	4	5	6

14. What suggestions do you have for improving this workshop? _____

15. Other Comments: _____
