Session Goals

Learn about AT options to promote:

• Social Skill Development
• Behavior
• Communication
• Cognitive Development
• Academic Skills
Session Goals

Introduce a process to match student need to assistive technology

Better understand how to consider and implement AT for students with ASD

Provide resources to help and assist with AT implementation for students with ASD
Why AT – Why Now?

Increase in prevalence of ASD

• 1990’s = 2 per 10,000 in US
• 2013 = between 1-50 and 1-88
• 2004 = .9% of total population of students with disabilities in ND
• 2013-14 = 6.2% of the same population
Why AT – Why Now?

• Increased need for schools to provide programs and interventions that meet the unique needs of students with ASD
• Explosion of assistive technology options to meet the needs of students with ASD
• Evidence-based studies show technology-aided instruction and intervention is effective for students with ASD
ASD Defined

• ASD is a cognitive disorder represented by varying degrees of impairment in communication and social interaction skills,

• ASD is a cognitive disorder represented by the presence of restricted, repetitive, and stereotypical patterns of behavior,
ASD Defined

• ASD describes a set of developmental disorders which affect social and communication skills, and to a lesser or greater degree motor and language skills,

• ASD is a broad diagnosis that can include those with high IQ’s or intellectual disability, those that are chatty or silent, or those that are methodical or disorganized.
AT Defined

- Assistive technology refers to tools and services that assist students with ASD learn and access the curriculum.
- Tools may range from low tech (pencil grips, picture communication systems) to high tech (iPads, dedicated communication devices).
AT Defined

• AT Services assist a student with ASD in the selection, acquisition or use of an AT device

• They range from an AT assessment, leasing or purchasing a device, coordinating therapies and AT training
Why AT for ASD?

• It is a proven best practice
• It promotes learning and independence
• It is mandated under IDEA

‘each public agency shall ensure that AT devices, AT services, or both are made available to a child if required as part of special education, related services or supplementary aids and services’
Where Does AT for ASD Fit?

Birth through 2 = IDEA Part C
- Early Intervention Services
- Individualized Family Service Plan (IFSP)

Three through 21 = IDEA Part B
- Special Education
- Individualized Education Program (IEP)
AT in the IFSP

AT devices should be considered if interventions are required to aid in the developmental tasks such as:

• Interaction with the environment,
• Communication, and
• Cognition
AT in the IEP

The decision to provide AT is based on the IEP team recognition that the student is:

- Struggling to complete one or more specific tasks
- Not able to access specific aspects of the curriculum or environment
- Not able to communicate effectively
- Not as productive as will be needed over the course of the next year
Considering AT

Team decision
Unique to each student
Requires new skills
Looks at a system of devices and services
Follows a process
AT Process

1. Identify the tasks to be accomplished
2. Gather existing background information
   • Functional abilities
   • Personal characteristics
   • AT experiences
AT Process

3. Match student to equipment features:
   • Task to be accomplished
   • Environments to be used
   • Portability
   • Durability
   • Need to integrate with other AT devices
IPAT Can Help

• Call when you know the task to be accomplished and we can talk equipment features (800) 895-4728

• Email ipatinfo@ndipat.org to begin an online conversation

• Compare equipment features as noted in our various blogs ndipat.org
AT Process

4. Examine potential devices:

- Performance
- Ease of use
- Cost
- Flexibility
- Maintenance
- Training Needs
Can Help

- Set-up a visit to a demonstration center in Bismarck or Fargo
- Request a videoconference to have IPAT staff demonstrate devices of interest
- Compare equipment features of items available in our Equipment Rental inventory
  
  [http://ndipat.org/services/equipment-rental-program](http://ndipat.org/services/equipment-rental-program)
AT Process

5. Establish equipment trail use:
   • Accomplish the identified tasks
   • Fit the individuals abilities
   • Work across environments
Can Help

• Try before you buy, rent AT devices from our Equipment Rental Program
  http://ndipat.org/services/equipment-rental-program
• Call (800) 895-4728 to begin the rental process
6. Reconsider options by revisiting step 3

7. Develop training plans to support device use and implementation
   • Who will receive training
   • Timelines
   • Responsibilities
AT Process

8. Identify funding sources

• Rental programs from manufacturers
• Used equipment sources
• Third party payers
• AT Financial Loan Programs
• Charitable organizations
Can Help

• Look on our online used equipment bulletin board
  http://ndipat.org/services/used-equipment-program
Can Help

• Consider an AT Loan
  http://ndipat.org/services/assistive-technology-financial-loan
Can Help

• Apply for an AT grant award
  http://ndipat.org/pedaling-for-possibilities
AT Process

9. Define follow-up

- Who will coordinate training, device modification, reassessment
- How will follow-up be facilitated
- What is the time frame – weekly, monthly, yearly
AT Process

The AT itself is not the goal . . . .

the individual’s increased learning
and independence is the goal.

IPAT’s AT Assessment Process
http://ndipat.org/resources/planning-for-or-delivering-at-services-documents
AT Matching Tools

MATCH http://ndipat.org/blog/at-in-the-iep-use-the-match-up-tool-for-systematic-consideration/

Bridging Apps http://bridgingapps.org/

Pedagogy Wheel for ASD http://ndipat.org/blog/autism-find-an-app-for-that/
AT Matching Tools

• Call Scotland’s Apps for Reading and Writing:
  http://ndipat.org/blog/reading-and-writing-difficulties-there's-an-app-for-that/

• Jeannie Krull’s comparison chart Text-to-speech apps iOS:
AT for Social Skill Development

FOR STUDENTS WITH ASD
Social Skills

Difficult Because:

- The appropriate action changes with the setting and the person you are interacting with
- Many social situations have unwritten rules
Social Skill Development

Low AT

- Social Stories
- Social Scripts
- Turn Taking cards
- Social Rule cards
Social Skill Development

Mid AT

- Camera
- Video recorder
Social Skill Development

High AT

- **Computer Software**
- **Apps**
  - Pictello by AssistiveWare
  - Scene & Heard by Therapy Box
    - Introduction Video: [http://goo.gl/DU8bIr](http://goo.gl/DU8bIr)
AT for Behavior
FOR STUDENTS WITH ASD
AT for Behavior

Service Providers

Apps:

- Behavior Tracker Pro
  - http://goo.gl/9W6meq

- Skill Tracker Pro
  - http://goo.gl/T7Aejj
AT for Communication

FOR STUDENTS WITH ASD
AT and Communication

• All students with autism, by definition of their diagnosis, have communication deficits
AT and Communication

• SLPs are an integral part of their program and planning team
  • Students without language need alternate forms of language; sign, PECs or AAC devices
  • Students with emerging language need continued work on expressive and receptive skills
  • Students with high verbal skills need work on pragmatics and conversational reciprocity skills
AT and Communication

Communication has two aspects:

- Receptive Language
  - What we hear and understand

- Expressive Language
  - What we say to others

Students with ASD may have difficulties in one or both communication areas.
AT and Communication

• How does student take in information
• How should educators present the information
  • Visual
  • Auditory
  • Tactile
AT and Communication

• How does the student communicate
  • Eye point/gaze
  • Hand point
  • Switch
  • Manipulate objects
AT and Communication

- Uses a symbol set with/without auditory output
  - Real objects
  - Pictures
  - Line drawings
  - Words

- Student speaks using their own voice
AT and Communication

• What is the goal of AT use?
  • Language Development
  • Articulation
  • Pragmatics
  • Choice Making
  • Sound Discrimination
  • Build Vocabulary
  • Expression
AT to Build Communication Skills

- Low Tech Tools – no voice output
  - Unaided communication systems – rely on the user’s body to convey meaning

- Sign language
- Gestures
AT to Build Communication Skills

- Low Tech Tools – no voice output
- Aided communication systems require the use of equipment or objects in addition to the user’s body
- Compartments Object Communicator
AT to Build Communication Skills

• Low Tech Tools – no voice output

• Aided communication systems require the use of equipment or objects in addition to the user’s body

• Paper Communication Cards/Books – pages of symbols organized by topic
AT to Build Communication Skills

- Low Tech Tools – no voice output
- Picture Exchange Communication System (PECs) – student gives a picture to another in exchange for what that picture represents
AT to Build Communication Skills

- Low Tech Tools – no voice output
- E-Tran Frames – the student uses eye-gaze to indicate word or symbol
AT to Build Communication Skills

- Low Tech Tools – no voice output
- Alpha Smart or Neo word processors – the student types in what they wish to say
AT to Build Communication Skills

- Mid Tech Tools – with voice output
  - Digitized Speech – recorded messages
  - Static Display – the symbols/items are fixed in a particular location and must be changed manually

![Basic Talk 4](image1)
![Go Talk Express 2](image2)
![iTalk2™](image3)
AT to Build Communication Skills

• Mid Tech Tools – with voice output
• Text-to-Speech Only – student inputs text, accesses speak button and message is voiced using synthesized speech
AT to Build Communication Skills

• High Tech Tools
• Synthesized voice output, computerized speech
• Dynamic Display – a computer screen which user can change display by touch or other input
• Dedicated Devices – limited solely to the generation of speech
• Non-dedicated Devices – computers or tablets that can be programmed to run like a dedicated device
AT to Build Communication Skills

- High Tech Tools
- Dedicated Speech Generating Devices (SGDs)

Tobii C8
Essense Pro
Dynavox T10
AT to Build Communication Skills

• High Tech Tools
• Non-dedicated Speech Generating Devices

DynaVox Maestro™—Unlocked version

iPad with App

Laptop with communication software
AT to Build Communication Skills

• High Tech Tools
• iPads/Androids with Communication Apps
• Pictures with programmable hot spots

AutisMate $150
AT to Build Communication Skills

• High Tech Tools
• iPads/Androids with Communication Apps
• Picture based with prediction
AT to Build Communication Skills

- High Tech Tools
- iPads/Androids with Communication Apps
- Picture scenes with programmable hot spots
- Timer Pages
- GPS Tagging

ChatAble by Therapy Box
$49.99
AT to Build Communication Skills

• High Tech Tools
• iPads/Androids with Communication Apps

Vocab PC
MultiChat 15
Spelling with word prediction
Primary (home, school, community)

$119
AT to Build Communication Skills

- High Tech Tools
- iPads/Androids with Communication Apps

Proloquo2Go $219

Proloquo2text
AT for Cognitive Development
FOR STUDENTS WITH ASD
AT for Cognitive Development

- Reducing Distractibility
- Augmenting Memory Loss
- Organizational Skills
- Task Completion
AT for Cognitive Development

Reducing Distractibility

- Clocks

Time Timer
AT for Cognitive Development

Reducing Distractibility

- Mobile Devices

Stay on Task
AT for Cognitive Development

Memory Loss
AT for Cognitive Development

Organizational Skills

- Calendars

Bath Time:
- Fill tub
- Wash hair
- Wash body
- Rinse Off
- Dry off
AT for Cognitive Development
Organizational Skills

iReward Chart
AT for Cognitive Development

Task Completion

- Single Task

- Multiple Tasks
AT for Academic Skills

FOR STUDENTS WITH ASD
AT and Academic Skills

WRITING

• Writing has two distinct components
  • Motor skills (pencil/paper and keyboarding)
  • Composition skills (idea generation, sequencing, spelling, grammar, vocabulary, idea integration)
AT and Academic Skills

WRITING:

• AT to Address Motor Skill Deficits in the Writing Process
AT to Build Writing Skills

AT to address Motor Skill Deficits

• Low Tech Tools (pencil/paper tasks)
• Adapted pencils/pencil grips
AT to Build Writing Skills
AT to address Motor Skill Deficits
• Low Tech Tools (pencil/paper tasks)
• Adapted papers

BrightLines Paper
AT to Build Writing Skills

AT to address Motor Skill Deficits
- Low Tech Tools (pencil/paper tasks)
- Writing Guides
AT to Build Writing Skills

AT to address Motor Skill Deficits

- Mid Tech Tools (replace pencil/paper)
- Portable Keyboards
AT to Build Writing Skills

AT to address Motor Skill Deficits

- High Tech Tools (augments pencil/paper)
- Recording pens and paper + computer

Echo smartpen
$119

Sky smartpen
$195
AT to Build Writing Skills

AT to address Motor Skill Deficits

- High Tech Tools (augments pencil/paper)
- Mobile tablet apps that act as a notepad and voice recorder

Notability
$2.99

AudioNote
Notepad and Voice Recorder
$4.99
AT to Build Writing Skills

AT to address Motor Skill Deficits

• High Tech Tools (augments pencil/paper)
• Mobile tablet apps take a picture of handout, add text

SnapType Free
AT to Build Writing Skills

AT to address Motor Skill Deficits

• High Tech Tools (replace pencil/paper)
• Computers with specialized software
• Mobile Tablets with specialized apps
AT to Build Writing Skills

- High Tech Tools Motor (computer based)
- Text-to-speech + Word Prediction, provides needed audio paring and list of most likely words based on content
AT to Build Writing Skills

• High Tech Tools Motor (mobile tablet based)
• Text-to-speech + Word Prediction apps

Abilipad $19.99

iReadWrite $19.00
AT to Build Writing Skills

- High Tech Tools Motor (computer based)
- Voice Recognition, takes motor skills out of the writing process
AT to Build Writing Skills

• High Tech Tools Motor (mobile tablet based)
• Voice Recognition, takes motor skills out of the writing process
AT and Academic Skills

WRITING:

• AT to Address Composition Skill Deficits in the Writing Process
AT to Build Writing Skills

• Low Tech Tools for Composition Deficits
  • Word Lists
  • Word Books
  • Word Wall
AT to Build Writing Skills

• Mid Tech Tools for Composition Deficits
• Electronic Dictionary – with or without voice
AT to Build Writing Skills

• High Tech Tools for Composition Deficits
• Boardmaker – software that lets students who use symbols create written work
AT to Build Writing Skills

• High Tech Tools for Composition Deficits
• Organizational software for writing – computer based

$773  $59
AT to Build Writing Skills

• High Tech Tools for Composition Deficits
• Organizational software for writing – mobile tablet based

Popplet iOS $5.00

Simplemind Android $4.99
AT to Build Writing Skills

• High Tech Tools for Composition Deficits
• Software and Apps with Spell Check
• Software and Apps with Word Prediction
• Software and Apps with Text-to-Speech
• Software and Apps with Voice Recognition
AT and Academic Skills

• READING

• Low Tech Tools for visual tracking

Removable Highlighter Tape

Bar magnifier with highlighter

Word-windows
AT and Academic Skills

• READING
• Low Tech Tools for visual tracking

Reading Filters
Magnets
Full page, colored overlay reading guide
AT and Academic Skills

• READING

• Low/High Tech Tools for pairing words with visuals, paper and electronic symbol and rebus supports
AT and Academic Skills

• READING
• Mid Tech Tools for defining/pronunciation

Wizcom Reading Pen  $225.00

Franklin Language Master $125-$500
AT and Academic Skills

• READING
• Mid Tech Tools spoken text to accompany print

Download a free audiobook
150,000+ audiobooks & more. Works with your smartphone and tablet.

JUST GO TO BED
MERGER MAYER
AT and Academic Skills

• READING

• Mid Tech Tools, stand alone book readers

VictorReader Stream
$350

PlexTalk Pocket
$350
AT and Academic Skills

- Electronic Book Services
- Learning Ally (was RFB&D)
  - Membership $119/year for individual
  - Players and Computer Software
  - Learning Ally App
AT and Academic Skills

• Electronic Book Services
• BookShare
  • Free Membership
  • Computer and App based
• Read2Go iOS app $20
• GoRead Android Free
AT and Academic Skills

• Electronic Book Services
  • National Library Services
    • Free Membership
    • Free Books
    • Free Shipping
    • Free Players
    • www.library.nd.gov/talkingbookservice.html
AT and Academic Skills

• Electronic Text Sources
• Publisher
• Internet
• Scanned Documents
AT and Academic Skills

• READING

• High Tech Tools with text-to-speech (OCR)

• Features to consider
  • Speak single words
  • Speaks sentences
  • Speaks paragraphs
  • Highlights
AT and Academic Skills

• **READING**
  • High Tech Tools with text-to-speech software computer based
    • Read & Write Gold/Mobile $645
    • Kurzweil 3000 $1,395
    • ReadOutloud $773
    • ClaroRead Plus $329
AT and Academic Skills

• READING

• High Tech Tools with text-to-speech apps used with a mobile tablet
  • Prizmo   iOS   $10
  • ZoomReader  iOS   $20
  • CapturaTalk  Android   $78
AT Resources
FOR STUDENTS WITH ASD
AT Resources

- Department of Health and Human Services Autism Unit: http://www.nd.gov/dhs/autism/

- Children’s Special Health Services Resource Booklet: http://goo.gl/XXC6Bd

- Autism Society of ND: http://www.autismnd.org/

- ND Autism Connection: http://www.ndautismconnection.org/

- Anne Carlsen Center: http://annecarlsen.org/