Assistive Technology Introduction/Overview
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About me:

• Special Education undergraduate degree

• Masters in Educational Technology

• At LifeScape for 29 years

• Involved with assistive technology for 27 years

• Teach computer classes to all ages of students in our specialty school

• Troubleshoot any issues with instructional technology in the classroom

• Conduct trainings/workshops/presentations in special education technology

• Have participated in assistive technology evaluations
What is Assistive Technology?

IDEA (Individuals with Disabilities Education Act) 2004 states that:

Statute: TITLE I / A / 602 / 1

(1) Assistive technology device.--
(A) In general.--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 functional capabilities of a child with a disability.

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

http://idea.ed.gov/explore/home
What is an Assistive Technology service?

IDEA 2004 states that:

Statute: TITLE I / A / 602 / 2

(2) Assistive technology service.--The term `assistive technology service' means any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device. Such term includes--

(A) the evaluation of the needs of such child, including a functional evaluation of the child in the child's customary environment;

(B) purchasing, leasing, or otherwise providing for the acquisition of assistive technology devices by such child;

(C) selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing 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;

(E) training or technical assistance for such child, or, where appropriate, the family of such 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 such child

http://idea.ed.gov/explore/home
IDEA 2004 requires IEP teams to consider the assistive technology needs of all children with disabilities.

Regulations: Part 300 / D / 300.324 / a / 2 / v

(v) Consider whether the child needs assistive technology devices and services.

The IEP team determines if assistive technology is required in order for the student to receive a free and appropriate education. If it is determined that assistive technology is needed, schools are required to provide assistive technology at no cost to the parents.

Regulations: Part 300 / B / 300.105
Sec. 300.105 Assistive technology.
(a) Each public agency must ensure that assistive technology devices or assistive technology services, or both, as those terms are defined in Sec. Sec. 300.5 and 300.6, respectively, are made available to a child with a disability if required as a part of the child's--
(1) Special education under Sec. 300.36;
(2) Related services under Sec. 300.34; or
(3) Supplementary aids and services under Sec. Sec. 300.38 and 300.114(a)(2)(ii).
(b) On a case-by-case basis, the use of school-purchased assistive technology devices in a child's home or in other settings is required if the child's IEP Team determines that the child needs access to those devices in order to receive FAPE.

http://idea.ed.gov/explore/home
AT (Assistive Technology) is not a goal in and of itself.

AT is a tool that can be used to assist an individual to access and achieve functional goals and objectives. Emphasis should be placed on the needs of the individual and the features that are required, not on specific names of equipment.

(J. Marquette, PennTech)

http://www.aiu3.net/uploadedFiles/Teaching_and_Learning/IDEA_and_Training_Consultation/What%20is%20Assistive%20Technology%20Handouts.pdf

Assistive technology is not a cure. AT can do many wonderful things for an individual, however, it does not replace good instruction, hard work put forth from the student and support and carry over from the team.

Important to keep in mind that you can’t expect the assistive technology to just be used without good support and follow up and the expectation that the student will use it.
QIAT – Quality Indicators for Assistive Technology web site
This is an excellent resource for to help parents, school districts and other personnel to understand the role of assistive technology in the school setting and the IEP.

http://www.qiat.org/index.html
From the QIAT website, AT in the IEP: http://www.qiat.org/indicators.html

COMMON ERRORS:

IEP teams do not know how to include AT in IEPs.

IEPs including AT use a “formula” approach to documentation. All IEPs are developed in similar fashion and the unique needs of the child are not addressed.

AT is included in the IEP, but the relationship to goals and objectives is unclear.

AT devices are included in the IEP, but no AT services support the use.

AT expected results are not measurable or observable.
In the IEP, a description of the type of assistive technology with enough detail including without specifying the brand name should be included. This allows flexibility to update equipment without reconvening the IEP.

**Example:** Speech-generating device with eye gaze capability

List the back up AT in case devices need to be repaired

**Example:** a hard copy print out of symbols from device
Assistive Technology can be...

**Low Tech:** does not require much training, less expensive or complex.
Examples: switches, pencil grips, highlighters, slant boards, visual schedule, magnifying glass

**Mid Tech:** May require some training, may be electronic or battery operated, a little more expensive.
Examples: Time Timer, static display augmentative communication devices, talking calculator, alternative mouse or keyboard

**Hi Tech:** more complex and expensive, requires training and effort to learn.
Examples: Dynamic display augmentative communication devices, computer software, power wheelchairs, environmental control units

If you have high tech assistive tech, it is always good to have a low tech back up in case your equipment needs repair.
Categories of Assistive Technology

Academic and Learning Aids

Communication

Computer Access

Daily Living Aids

Environmental Controls

Ergonomic Aids

Hearing and Listening Aids

Mobility Aids

Prosthetics and Orthotics

Recreation and Leisure

Seating and Positioning

Vision Aids
Academic and Learning Aids

Assistive technology that will help a student to increase their participation and independence in their educational program.

Use of symbols for communication, schedule, writing.
Boardmaker Online: https://www.boardmakeronline.com/
SymWriter 2: http://www.mayer-johnson.com/communicate-symwriter-windows

Word Prediction Software
Co:Writer: http://donjohnston.com/cowriter/
Talking word processor
Write: Outloud:
http://donjohnston.com/writeoutloud/

Talking books and text

https://www.bookshare.org/cms

Start to Finish books: http://donjohnston.com/stflibrary/

Read and Write for Google Chrome:
https://rwchrome.texthelp.com/drive/home/registerteacher

Highlighting tape, pen or computer based highlighting

Software programs like Discrete Trial Trainer:
http://www.dttrainer.com/products/dt-trainer/
Apps for mobile devices:

Apps for Children with Special Needs  
http://a4cwsn.com/

Autism Speaks  
https://www.autismspeaks.org/autism-apps

GeekSLP  
http://www.geekslp.com/

OT’s with Apps and Technology  
https://otswithapps.com/

Switch Accessible Apps for iPad  
https://enablingdevices.com/files/content/SwitchAppsForIPad.pdf
Assistive technology tools for Google

Free Premium subscription for teachers for Read and Write for Google Chrome. This is an extension that will allow a teacher to log into Chrome and hear words, passages, web pages and documents read aloud with highlighting, simplify text on a web page, see the meaning of words in text and picture dictionaries and more. You must use the Google account that you want to use at school for this free subscription. Go here to register: [https://rwchrome.texthelp.com/drive/Home/RegisterTeacher](https://rwchrome.texthelp.com/drive/Home/RegisterTeacher)

ATbar. Toolbar with features including color overlays for webpages, dictionary, text to speech, word prediction and more.

Read Mode. Click on the glasses icon and it will turn the current web page into a nice to read black on white page allowing distraction free reading. Ads and Flash animation are removed in read mode. Click on the Read Mode icon again to go back to normal.


Select and Speak. Read any text in the browser. Highlight text and hit play button-Pause in tool bar.

Speak It Extension (get it in the Chrome store, free). Select text on a web page, right click and click Speak It to read the page.

Visor: Screen masking, dimmer, reading aid.

Voice Typing in Google docs. Open a document, Tools and choose Voice Typing.


Zoom: Easy to use zoom slider to make it easier to read content on web page
Adapted Curriculum

**News-2-You** is a weekly current events newspaper that connects readers to the world with timely, contemporary, applicable topics. News-2-You provides the weekly newspaper in five different reading levels. Subscribers access the weekly newspaper issue online with interactive speaking pages, or offline, using printable pages for instruction. More than 50 accompanying activities are delivered in the weekly theme for multiple guided practice experiences. Activities are engaging and focused on the central topic for the weekly edition of News-2-You.

https://www.n2y.com/news-2-you/

**Unique Learning System®** is an award-winning, online, standards-based set of interactive tools specifically designed for students with special needs to access the general curriculum. Used daily in school districts and classrooms across the country, Unique Learning System provides preschool through transition students with rigorous, standards-based materials specifically designed to meet their instructional needs. Users interact with differentiated, thematic units of study with text to speech, interactive components, hundreds of activities and multiple opportunities to show what they know. Books, lessons & activities are viewable on a variety of hardware platforms, including tablets, whiteboards, and smartboards.

https://www.n2y.com/unique-learning-system/
Adapted Curriculum

AbleNet curriculum is created by professional educators with years of experience in the classroom helping students of all ages with mild, moderate, and severe disabilities achieve their fullest educational potential. AbleNet curriculum writers understand that each student learns in their own unique way, and in some cases, can require adaptations to each lesson to become fully engaged in the learning process. AbleNet curriculum is developed using today's best practices and correlated to today's state standards, alternate standards where applicable, and the Common Core. 
https://www.ablenetinc.com/curriculum

Adapted Curriculum from Attainment
Communication Aids

Assistive technology to help individuals communicate.

Picture Symbols
Boardmaker Online:
https://www.boardmakeronline.com/

PECS Communication books
Picture Exchange Communication System
http://www.pecsusa.com/pecs.php

Object boards or cards

Talking Switches: BigMACK, Step by Step
https://www.ablenetinc.com/technology/speech-generating-devices
Communication Aids

Static display AAC (Augmentative or Alternative Communication) devices:
Go Talk, QuickTalker
http://www.attainmentcompany.com/gotalks
https://www.ablenetinc.com/quicktalker-23

Dynamic display AAC: Tobii/Dynavox T7, T10, T15, and eye gaze Iseries+ devices
http://www.tobiidynavox.com/

Use of tablets with communication apps:
Proloquo2Go, GoTalkNow
http://www.assistiveware.com/product/proloquo2go
http://www.attainmentcompany.com/gotalk-now
Computer Access

Accessibility features in the settings of Windows and Mac machines.

Mouse Alternatives:  
http://www.infogrip.com/products/mice/

Touch Monitors.

Alternative keyboards:  
http://www.infogrip.com/products/keyboards/?p=1

Voice recognition  

Single Switches  
http://www.infogrip.com/products/switches/
Accessibility features on the

iPhone: [https://help.apple.com/iphone/9/#/iph9022b9b2f](https://help.apple.com/iphone/9/#/iph9022b9b2f)


Android devices: [https://support.google.com/accessibility/android.answer/6006564?hl=en&ref_topic=6007234](https://support.google.com/accessibility/android.answer/6006564?hl=en&ref_topic=6007234)

Chromebooks: [https://support.google.com/chromebook/answer/177893?hl=en](https://support.google.com/chromebook/answer/177893?hl=en)
Daily Living Aids
Silverware with adapted handles, Velcro shoes, anti-tip cups and plates, reachers and grabbers, shower and commode chairs, picture based recipes or cookbooks,

https://www.ablenetinc.com/technology/connected-home

http://enablingdevices.com/catalog/useful-devices/household_products

http://www.attainmentcompany.com/search/node/cooking

http://www.attainmentcompany.com/explore-personal-care


http://www.arthritissupplies.com/

Environmental Controls

Devices to control the environment such as lights, appliances, TV, etc.

PowerLink from Ablenet:  https://www.ablenetinc.com/powerlink-4-north-america-parent
HouseMate for iOS:  https://www.ablenetinc.com/technology/connected-home

There are environmental controls you can get commercially for home automation and controls that work off smart phones or both. Less expensive than environmental control units geared toward people with disabilities.

There are a number of environmental controls that are included in the electronics of power wheelchairs at no extra charge as long as you are using their more expensive joysticks or displays. These are the same joysticks and displays that would be used by people who are not able to easily use a joystick or use some other form of power wheelchair access:  https://www.youtube.com/watch?v=Fe1GGn0OFDg

These have pretty much replaced the expensive ECUs from the past:  
http://www.smarthome.com/iphone_apps.html  
http://www.insteon.com/insteon-hub-homekit  

These are a few smart phone remotes. If you use these with some type of adapted phone control like the power wheelchair above you can control anything that already has a remote control:  

The Amazon Echo in various configurations can make most of what is above voice activated:  
https://www.amazon.com/Amazon-Echo-Bluetooth-Speaker-with-WiFi-Alexa/dp/B00X4WHP5E
Hearing and Listening Aids

Products designed to assist individuals who are Deaf or hard of hearing. Includes assistive listening devices, hearing aids, infrared/personal amplification systems, audio/FM loop systems, FM amplification systems, TV amplifiers, TV decoders, visual signaling and alerting systems, open and closed captioning, real time captioning, tactile alerting systems, telephony and accessories, text telephones, TDDs/TTYs devices, adapted phones, etc.

http://www.icanconnect.org/

http://www.independentliving.com/default.asp?division=sb


https://dhs.sd.gov/drs/deafserv/tedp.aspx

https://www.maxiaids.com/

www.Rehabtool.com

http://www.tecear.com/index.html
Mobility Aids

Products that help individuals with mobility impairment move within their environment and give them independence in personal transportation. Includes standing/walking aids, transfer aids, stair lifts, walkers, scooters, wheelchairs and three-wheeled chairs, adapted bikes and Trikes, car seats/bed, stretchers, patient chairs, ramps, recliners, strollers, travel chairs, wheelchair trays, driving controls, seat belts, vehicle conversions, patient and wheelchair lifts, wheelchair loaders/carriers, wheelchair restraint systems, etc.

LifeScape Rehabilitation and Medical Supply:
http://www.lifescapesd.org/services/orthotics-prosthetics-and-mobility-solutions/

http://www.rifton.com/

Prosthetics and Orthotics- Includes splints, braces, foot orthosis, helmets, restraints, supports, etc.
Seating and Positioning: Products that provide individuals with mobility impairment with greater body stability, maintain upright posture, provide trunk/head support and reduction of pressure to the skin. Includes adapted and modular seating, cushions and wedges, contour seats, lumbar support seats, standing tables, positioning belts, braces, wheelchair modifications and cushions, seat lifts, bolster chairs, corner chairs, therapeutic seats, postural support hardware, postural support systems.

LifeScape Rehab Center:  http://www.lifescapesd.org/services/orthotics-prosthetics-and-mobility-solutions/  
http://www.rifton.com/  
**Vision Aids:** Products designed to assist individuals who are blind or visually impaired. Includes auditory and speech output devices, reading machines, scanning/document reading systems, OCR systems, electronic book readers, talking equipment (clocks/watches, calculators, etc.), Braille devices, Braille transcription and translation devices, screen magnifier/enlarger, closed circuit television (CCTV) for magnifying documents, book holders, manual and electric page turners, large button phones, speaker phones, large print books, taped/audio books, Voice Over on iPhone/iPad, etc.

http://www.afb.org/info/living-with-vision-loss/using-technology/assistive-technology/123

https://www.bookshare.org/cms

http://www.familyconnect.org/info/assistive-technology/1

http://www.independentliving.com/low-vision-sitemap.asp

Good one
http://www.pathstoliteracy.org/technology

https://www.maxiaids.com/

**ZoomText products:** [http://store.aisquared.com/collections/all](http://store.aisquared.com/collections/all)

Screen Readers: [http://www.adaptivetr.com/blindness/software-for-the-blind](http://www.adaptivetr.com/blindness/software-for-the-blind)
Examples for IEP:

Does the student require Assistive Technology Devices and Services? Yes  No

If yes, what device or service will be provided?

Speech-generating device with eye gaze capability, Static eye gaze boards, Pain scale, body part identification board to identify pain area, Wheelchair, Gait Belt, Gait Trainer, Location to lay down or for time out of chair, adapted curriculum and work materials, mount for communication device, toileting chair, Orthotics, gait trainer, wheelchair, visual schedule, picture cards, picture symbol cards, voice output switches, adapted curricula, and remote switch for computer and SMARTboard access, adapted bike, bike helmet, gait belt Manual wheelchair, and seating system with maximal postural supports and medical equipment trays. Power wheelchair with maximal postural supports and medical equipment trays, TLSO body jacket for postural support, Lower extremity orthotics, Environmental control unit to access television and staff when in residential unit. Speech-generating device (SGD) (augmentative and alternative communication device). Static picture symbol boards. Microlight switch. Bilateral resting elbow pads on lap tray. Bilateral hand splints.
Examples of Short Term Instructional Objectives or Benchmarks incorporating assistive technology:

When positioned properly to access the visual schedule and leisure activities pages on his/her SGD and supported with aided communication strategies, STUDENT will select from a field of symbols to indicate his/her preference of available activities (e.g.: walk, read, listen to music, play computer games, video conference from family) at least 2 times per day in 80% of all occurrences over the last 10 data points.

When asked a yes/no question, STUDENT will answer yes or no with verbal speech, head nods or speech generating device with 80% accuracy over the last 10 data points.

When presented with learning activities related to core academic content in the area of literature, STUDENT will use auditory scanning to select an answer located in his/her communication device or from a multiple choice selection to answer questions from 11 different literary concepts for comprehension with 80% of all occurrences over the last 10 data points.

When positioned on an adapted three-wheeled bike, STUDENT will independently pedal and steer for 100 feet while navigating a hallway in 80% of all trials for the last 10 data points.

Using a talking word processor with word prediction software, STUDENT will select a grammatically accurate word after identifying and typing the initial letter of the word to construct a paragraph with fewer than two errors, in 80% of all trials for the last 10 data points.
Assistive Technology Resources in South Dakota

Braille and Talking Book Library:  http://library.sd.gov/ BTB/index.aspx#.WBoKyC0rJ48

Communication Services for the Deaf:  http://www.csd.org/ or http://www.csd.org/services/neighborhood/south-dakota/

DakotaLink (South Dakota Assistive Technology program):  http://dakotalink.org/

Deaf/Blind:

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www.usd.edu/cd
LifeScape Rehabilitation and Medical Supply:  
http://www.lifescapesd.org/services/orthotics-prosthetics-and-mobility-solutions/

Service to the Blind and Visually Impaired:  http://dhs.sd.gov/sbvi/

South Dakota School for the Deaf:  http://www.sdsd.sdbor.edu/

South Dakota School for the Blind and Visually Impaired:  http://sdsbvi.northern.edu/
More Assistive Technology Resources:

Assistive Technology Industry Association:  https://www.atia.org/

Center on Technology and Disability: http://www.ctdinstitute.org/

Quality Indicators for Assistive Technology: http://www.qiat.org/

Closing the Gap: https://www.closingthegap.com/

Rehabilitation Engineering and Assistive Technology Society of North America: http://www.resna.org/

Apps for Children with Special Needs: http://a4cwsn.com/

LifeScape staff who can help:

**Arlen Klamm, OTR/L, ATP/SMS**  
Assistive Technology Coordinator (Seating/Mobility/Environmental Control questions)  
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**Tina Miller**  
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