Interprofessional Collaboration for Assistive Technology (AT) Applications in School-Based Services

Session 16
OTAC Western States
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(https://symposium.otaconline.org/index.php)

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(In collaboration with Kerrie Lemons Chitwood, PhD, CCC-SLP)

Today's Session Agenda
(Don't worry, we have sensory motor breaks planned!;-)

- **Meet the team**
- **School-based OT/AT Mindset**
- **AT Overview, Continuum & Process**
- **Collaboration**
- **TRC Model**
- **Student Needs to match AT Tools & examples**
- **Reframing our Thinking & What's Next?**

Meet our Collaborative, Interprofessional TEAM

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Daniel Phillips, MS, CCC-SLP,
TRC Director, AT Specialist

Laura Greiss Hess, PhD, OTR/L
Occupational Therapist

- Associate Professor, Dominican University, Department of Occupational Therapy
  - Assistive Technology, Pediatrics and Research Coordinator & Mentor
  - Dominican University of California Land Acknowledgement Statement
    (https://www.dominican.edu/about/diversity-equity-and-inclusion#:~:text=A%20land%20acknowledgement%20formally%20recognizes,indigenous%20people%20and%20the%20land.)
- 28 years of experience serving children and families with neurodevelopmental disorders, teaching and research
- Background as a special education teacher and school-based occupational therapist and AT specialist in the schools
- Occupational therapist at the U.C. Davis MIND Institute
  - BS, Special Education & Human Development, Vanderbilt University
  - MS, Occupational Therapy, UNC Chapel Hill
  - PhD, Education, Learning & Mind Sciences, U.C.Davis

Dan Phillips, MS CCC-SLP

Tech Resource Center Marin

- B.A. - Communication Disorders - New York University
- M.S. Communication Disorders - San Francisco State University
- Emphasis in Augmentative Communication
- 28 years with the Marin County Office of Education - SLP
- Designed and created the Technology Resource Center of Marin (TRC)
- Served as the Director of TRC for the past 21 years
- Co:Founder of the Nika Project - non profit organization in 2013
- Professor at San Francisco State University (SFSU) with the AAC for ALL program
- AT Teaching support with SFSU, Dominican OT program, Touro University - Special Education credential program
- Collaboration with Dominican internship program/research team/AT course

Who is with us today? (Raise your hand please!)

- School OT
- School OT who actively addresses AT on your caseload
- School OT who wants to expand AT expertise
- AT specialists?
- Other professionals
- Parents

Objectives for today

- Participants will be able to discuss the scope of practice of OT and how AT is part of a collaborative approach to best practice in school-based services.

- Participants will explore AT practice models, application examples, clinical reasoning and implementation strategies for school-based services.

- Participants will be able to engage in student needs and examples highlighting interprofessional collaboration in AT applications for students with disabilities

    - **Note - Most reference links directly on slides as well as photo credits.*
        - *Additional resources & references at the end of the slide deck*

A School-Based AT / OT Mindset

AT and IDEA

AT can and should be at the foundation of your school-based OT practice

Where can you weave it in?

Where are you currently successfully implementing AT + OT thinking?

DISABILITY = DIVERSITY
INCLUSION = ACCESSIBILITY

DISABILITY = DIVERSITY
INCLUSION = ACCESSIBILITY

[Hanna Eide]

Fabqueensart.com

“For many, technologies makes things easier. For people with disabilities, technology makes things possible”

IBM, 1988

As Defined by IDEA - Assistive technology device

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

https://sites.ed.gov/idea/regs/b/a/300.5

As defined by IDEA, Assistive Technology Service is:

- **Evaluation of the needs** of a child with a disability
- **Purchasing**, leasing, or otherwise **providing for the acquisition** of assistive technology devices
- Selecting, designing, fitting, **customizing**, adapting, applying, retaining, **repairing**, or replacing assistive technology devices
- **Coordinating** other therapies, interventions, or services with assistive technology devices
- **Training** or technical assistance for a child with a disability and that child's **family**
- **Training** for **professionals** who provide services to a child with a disability

https://sites.ed.gov/idea/regs/b/a/300.6

Sec. 300.105 Assistive technology

AT
IDEA

Statute/Regs Main » Regulations » Part B » Subpart B » Section 300.105
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 §§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 §300.39;
(2) Related services under §300.34; or
(3) Supplementary aids and services under §§300.42 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.
(Approved by the Office of Management and Budget under control number 1820-0030)

https://sites.ed.gov/idea/regs/b/b/300.105

SETT - Student Environment Tasks & Tools (Zabala, 2005)

S

is for student's strengths, current performance and weaknesses in:

- Reading
- Math
- Writing
- Communication
- Learning and studying
- Vision, hearing and mobility
- Activities of daily living

E

is for learning environment:

- How is the classroom physically arranged?
- What materials and equipment are used?
- How is instruction given (small groups, whole class)?

T

is tasks for learning:

- What is the class expected to be able to do?
- Which tasks are essential for your child to be successful?

T

is for tools being used to help your child and other tools that may help.

The IEP team considers the assistive technology range:

Low/No Tech

Mid-Level Tech

High Tech

https://exceptionalchildren.org/blog/sett-framework-and-evaluating-assistive-technology-remotely

https://www.joyzabala.com/links-resources

Occupational Therapy Practice Framework: Domain and Process Fourth Edition

OTPF, 2020

- YOUR Role as a School-Based OT
- Building your foundational knowledge and expanding your expertise
- Not just “AT Specialist” which is not exactly a thing
- Certainly not exhaustive- but examples of specific mentioning AT

ACOTE Accreditation Standards

B.4.11. **Assess the need for and demonstrate** the ability to design, fabricate, apply, fit, and train in **assistive technologies and devices** (e.g., electronic aids to daily living, seating and positioning systems) used to enhance occupational performance and foster participation and well-being.

B.4.15. **Demonstrate** knowledge of the **use of technology in practice,** which must include:
Electronic documentation systems
Virtual environments
Telehealth technology

B.4.18. **Assess, grade, and modify** the way persons, groups, and populations perform occupations and activities by **adapting processes, modifying environments, and applying ergonomic principles** to reflect the changing needs of the client, sociocultural context, and **technological advances**

B.4.26. **Evaluate and discuss** mechanisms for **referring clients to specialists** both internal and external to the profession, including community agencies.

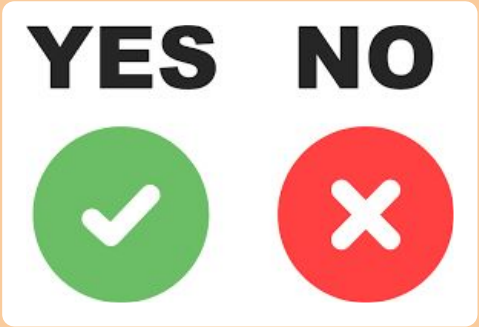
B.4.12. **Assess the need** for orthotics, and **design, fabricate, apply, fit, and train** in orthoses and devices used to enhance occupational performance and participation. **Train** in the safe and effective use of prosthetic devices.

B.4.13. **Provide recommendations and training** in techniques to enhance functional mobility, including physical transfers, wheelchair management, and mobility devices.

When we think about OT and AT they conceptually & philosophically go together…BUT HOW can we do this in School-OT?

Let's take a look at how AT is currently fitting in your daily school-based OT practice

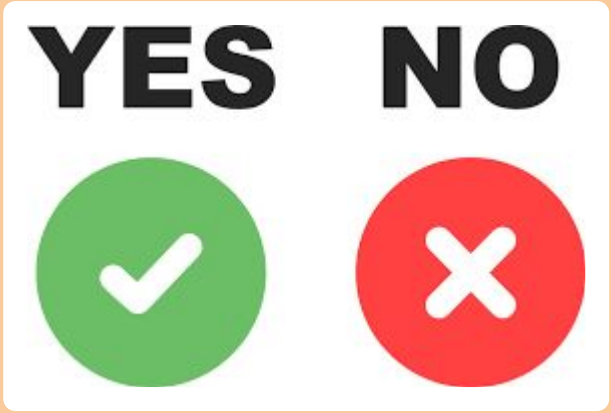
Please raise your hands for YES



Is AT currently part of your school-based OT workload / caseload?

Do you, as the school-based OT report on Present Levels of Functioning re: AT on IEPs the majority of the time?

Do you, as the school-based OT collaborate on AT goals as they relate to scope of OT practice?



Do your current OT evals / triennials include a section for AT?

Do your IEPs currently consider AT within related and / or supplementary aids and services?

Does your district / county / SELPA have clear and current understanding of related service provider's expertise related to AT and therefore clear mechanisms for referrals? Services?

Do you feel you have had enough training, mentoring, support to implement AT as part of your daily OT practice?

Do you have access to AT tools / resources to implement with students?

Do you have or use a local Tech Center in your area?

The intention of these YES vs NO questions was to prompt some reflection broadening your AT practice after today's conference

MYTH

(OT / AT & Handwriting)

- **School OTs are required to focus on handwriting**
- **When a student needs AT due to handwriting challenges, the OT should be the person to help teach typing skills**

FACT
(OT / AT & Handwriting)

- **The school OT and the team should examine how AT can supplement and / or replace handwriting based on individual differences to facilitate access to and engagement in the occupation of education**

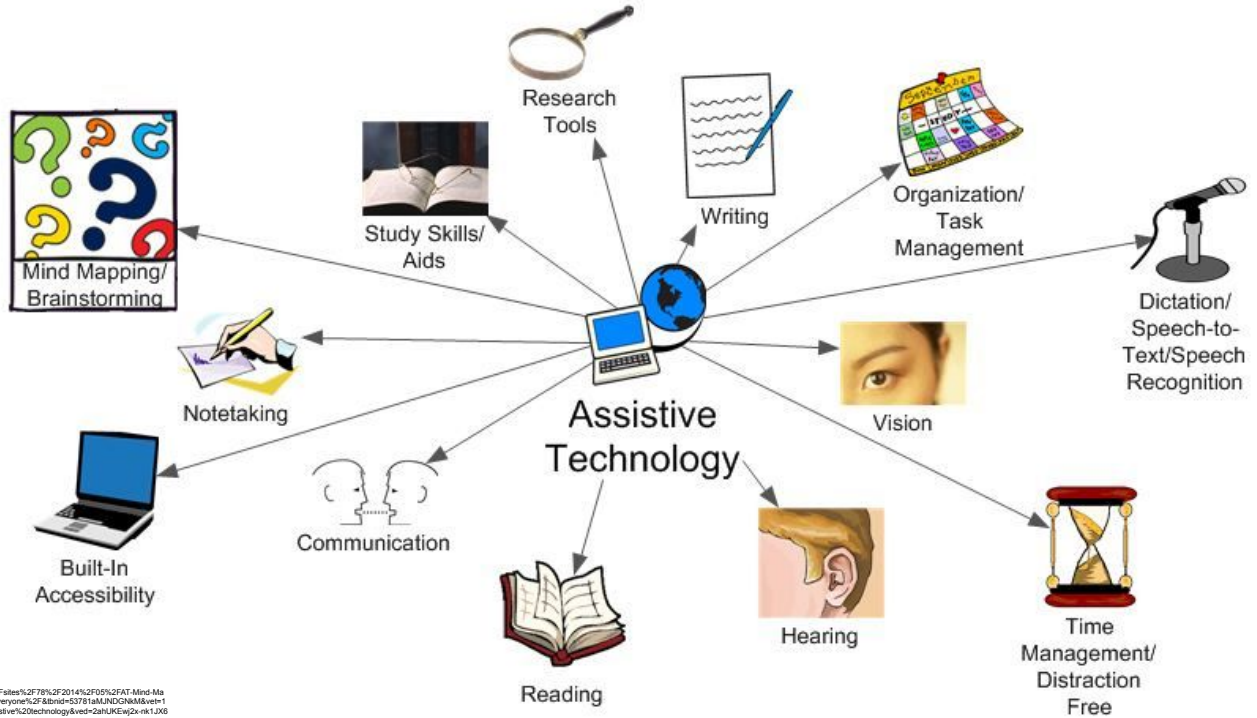
(we're going to be discussing much more today!!!)

KNOW your strengths, training & expertise

- **As a school-based OT know that AT is within YOUR scope of practice**
- **KNOW where you have some solid foundations and where you have some professional gaps**
- **FILL the gaps & expand your knowledge & expertise = COLLABORATE + Continuing education**
  - **Today's conference**
  - **Closing the Gap**
  - **CSUN, ATIA**

AT Overview, Continuum and Process

MANY areas of AT - ask yourself whether you OT practice is inclusive ot the breadth of OT as it relates to school participation



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Universal Design & Mainstream Tech

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AT Continuum

A few examples (not at all exhaustive)

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MYTH

(no - low - high tech AT)

- **Students need to “go through” low tech AT before “qualifying and demonstrating readiness” for any high tech AT**

FACT

(no - low - high tech AT)

- **ANY student may use a combination of no - low - high tech AT based on individual needs across activities, throughout the daily routine to engage meaningfully in their daily occupations**

(See case studies at the end of this slide deck for examples)

“NO TECH” Strategies

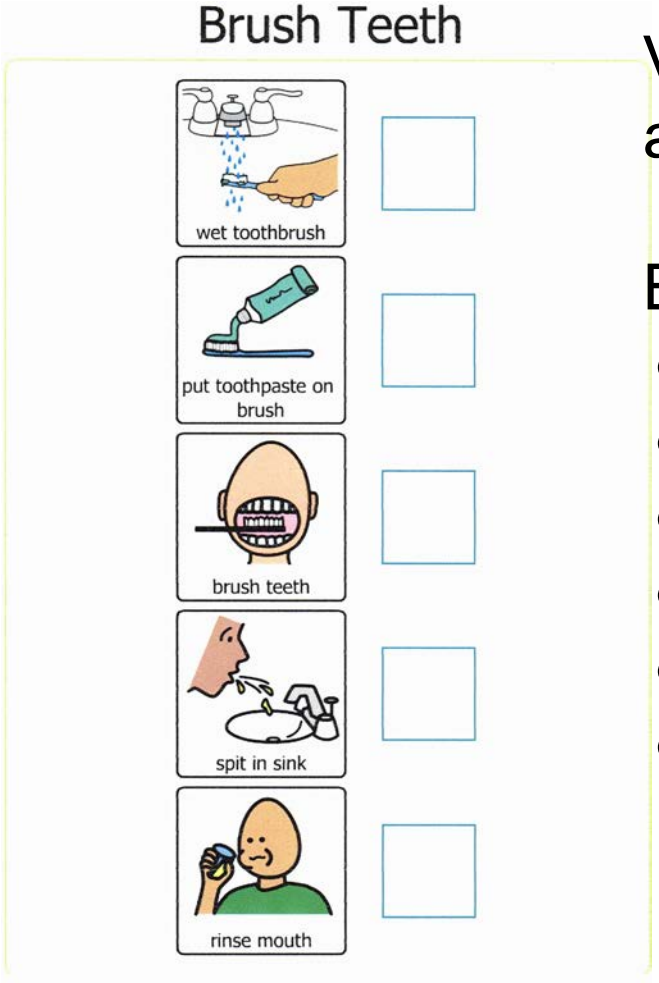
- May include seating strategies for distractibility (e.g. sit near the teacher, sit near the door).
- Specific planning
  - Breaking tasks into smaller / more manageable steps
  - Supporting directions and steps to activities.
- Thoughtful Universal Design & Environmental design considerations
  - HOW the classroom / home etc is “set up”

https://www.flaghouse.com/Furniture-Storage/Classroom-Furniture/Desks/Multi---Purpose-Cube-Chair-Set.axd

LOW Tech AT Strategies

- Typically simple, less complex items / devices
- Examples:
  - Pencil grips
  - Timers (visual timers found at www.timetimer.com)
  - Adaptive feeding utensils
  - Ball chairs, Fidgets, Weighted vests / blankets
  - Keyboard stickers
  - Printed / laminated visuals
    - Visual schedules
    - Object schedules
    - Social Scripts
  - Switches
  - Simple speech generating devices

https://www.timetimer.com/products/time-timer-12-inch

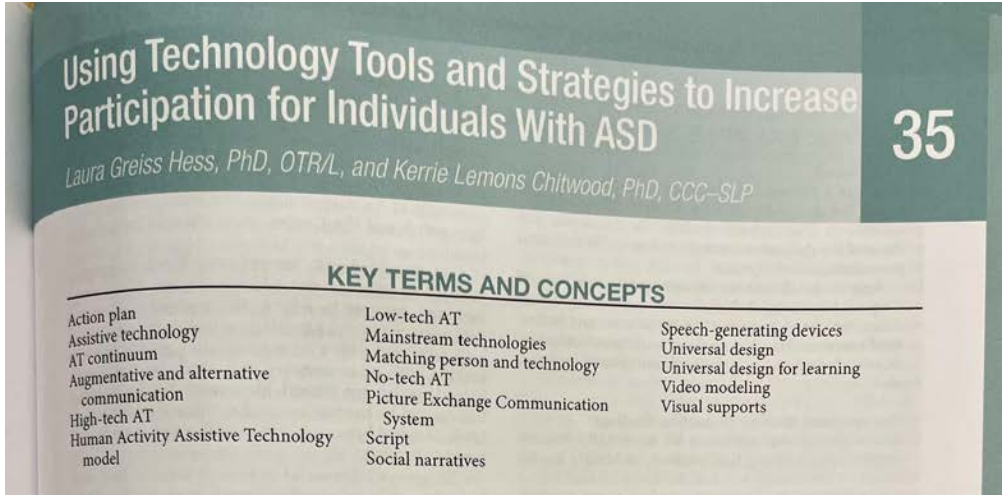


Visual Supports can be used for **ANY** activity.

Benefits:

- Provides consistency
- Clear expectations
- Increases independence
- Helps with transitions
- Reduces auditory prompts
- Helps teach VERBS = movement / what to DO + nouns
    - Notice how this list isn't just nouns

(Hess & Chitwood, 2018)



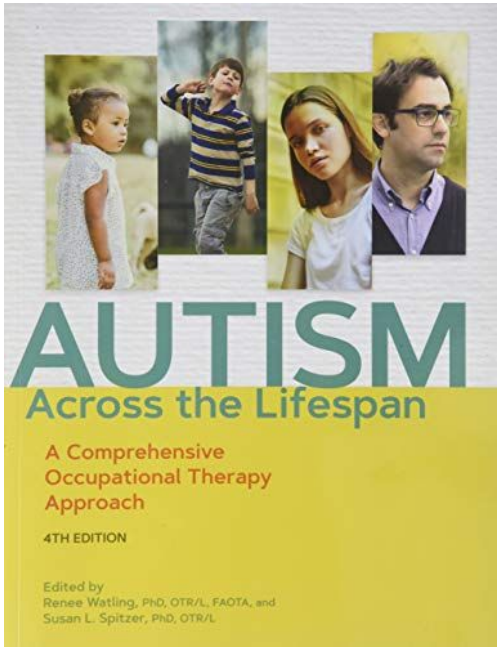
Using Technology Tools and Strategies to Increase Participation for Individuals With ASD

35

Laura Greiss Hess, PhD, OTR/L, and Kerrie Lemons Chitwood, PhD, CCC–SLP

KEY TERMS AND CONCEPTS

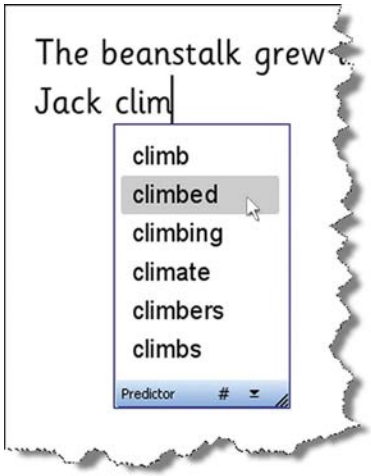
Action plan
Assistive technology
AT continuum
Augmentative and alternative communication
High-tech AT
Human Activity Assistive Technology model
Low-tech AT
Mainstream technologies
Matching person and technology
No-tech AT
Picture Exchange Communication System
Script
Social narratives
Speech-generating devices
Universal design
Universal design for learning
Video modeling
Visual supports

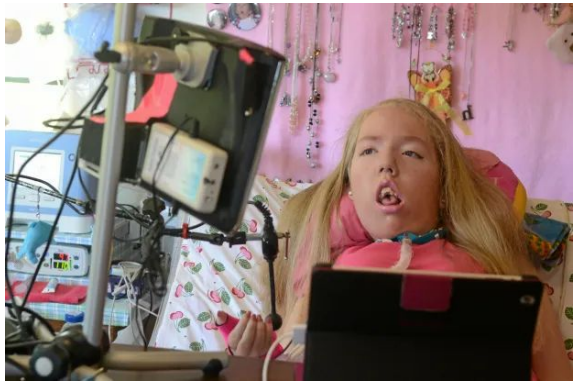


AOTA, Autism Across the Lifespan (Watling & Spitzer 2018)
Chap 35 - Hess & Chitwood, 2018 - CO: Authored, OT & SLP
Overview & general premises good for ASD and other disabilities
Focus on Visuals, EBP and their applicability

HIGH TECH AT Examples

- Dynamic display speech generating devices (SGDs)
- Computers and software systems (the following examples available through (www.donjohnston.com)
  - CO:Writer (word prediction that reduces # of keystrokes)
  - Text to speech (many options now)
- Gaming
- iPads with apps





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MYTH
(AT Eval)

- **When considering AT the EVAL is the essential piece. It is required for consideration and affords opportunity to obtain necessary AT.**

FACT
(AT Eval)

- **AT MUST be considered on EVERY IEP (not just about a specific AT Eval).**

- **ESSENTIAL OT / AT service is AFTER the eval for:**
  - **Training**
  - **Implementation**
  - **Customization**
  - **Generalization**
  - **Modifications**
  - **Tailoring TO occupational engagement**
  - **Documentation of progress and addressing goals**

Do’s and Don’ts

DO:

- Conduct an interdisciplinary / interprofessional evaluation or consultation
- Put the individual before the device
- Collaborate and have an action plan
- Use trial and error
- Consider AT at every IEP
- Focus on goals, documentation and measurable outcomes
- Plan your customization, implementation, training & follow up
- Train the student, team, family, etc
- Build skilled AT time into your workload & caseload

(Hess & Chitwood 2007; Hess & Chitwood, 2018)

Do’s and Don’ts

DON’T:

- Don’t rely solely on standardized assessment
- Don’t start with the device in mind
- Don’t rely on a one a size fit all approach
- Don’t expect a device to fix everything without customization and training
- Don’t stop your service and support at the eval

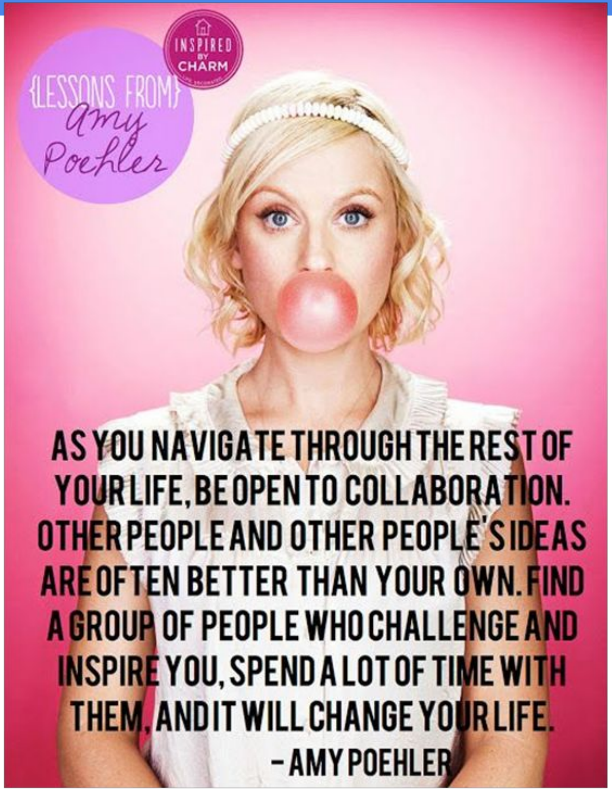
AT Abandonment

What is this? Why is this important?Is this happening for your students?

- Lack of training
- Insufficient funding
- Time restrictions
- Ineffective assessment and planning process
- Procurement and management difficulties
- Policy barriers
- Society's prejudice
- Knowledge and skill barriers
- Access barriers

Collaboration for the WIN!!!

The Collaborative Process



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Collaboration with teachers, specialists, and families is essential.

COLLABORATION

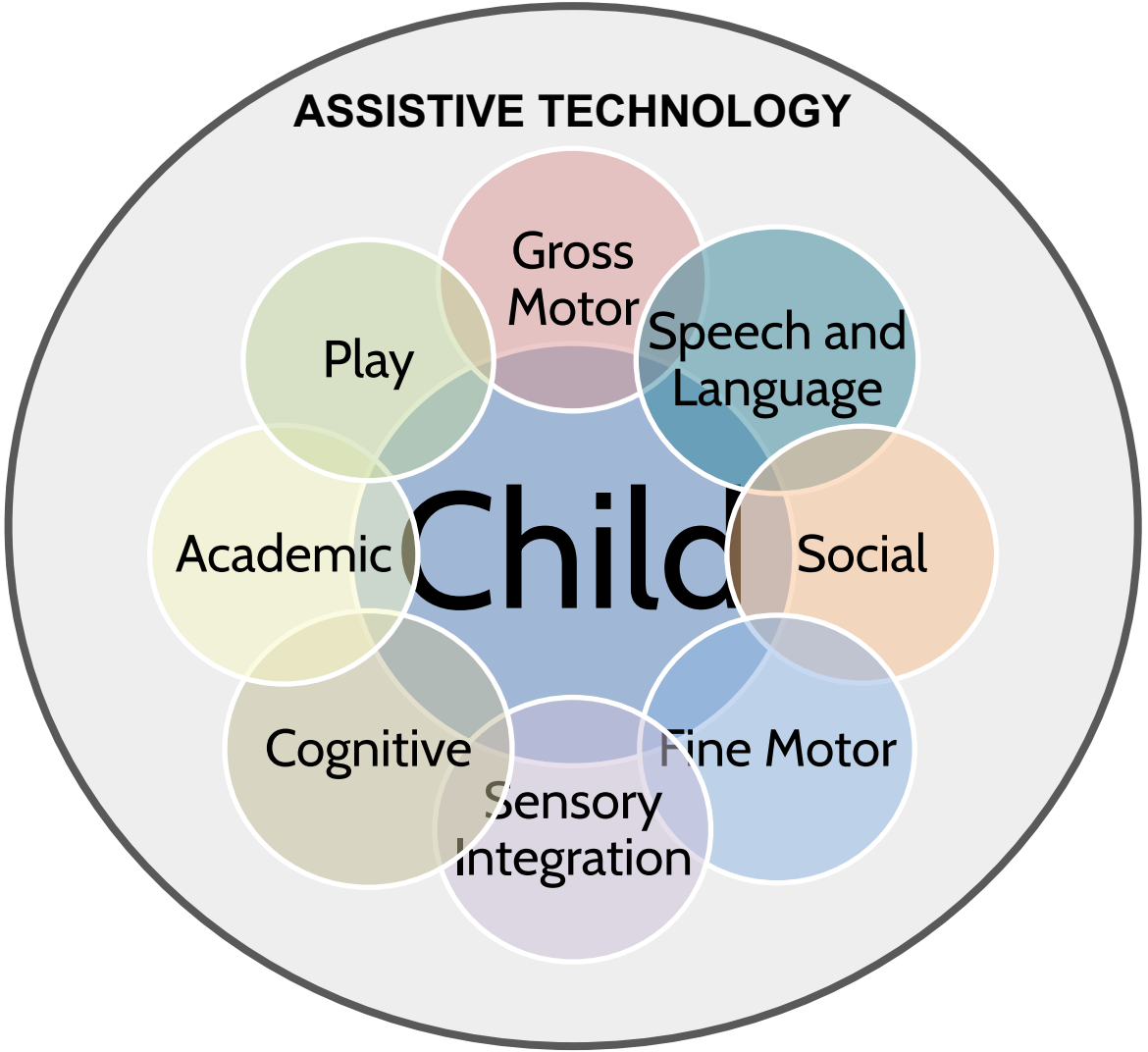
working together in a joint intellectual effort.

Benefits of Collaboration

- More effective problem solving
- Best Practices for curriculum development
- Each team member brings a unique perspective
- Increased efficiency and consistency
- Consistent attention to goals
- TEAM LEARNING & INNOVATION!!!
- ***Parent as key collaborator***

Development happens simultaneously

Therefore services must happen simultaneously



Understanding the scope of practice of the specialists on the team = Collaboration

A limited view Collaboration

WHO is on the AT Team?
It's the IEP team!!!

- Student (as appropriate)
- Teacher
  - General ed
  - Special Ed
- Parents

- Related Services
  - OT
  - PT
  - SLP
  - APE
  - Behavioral support personnel

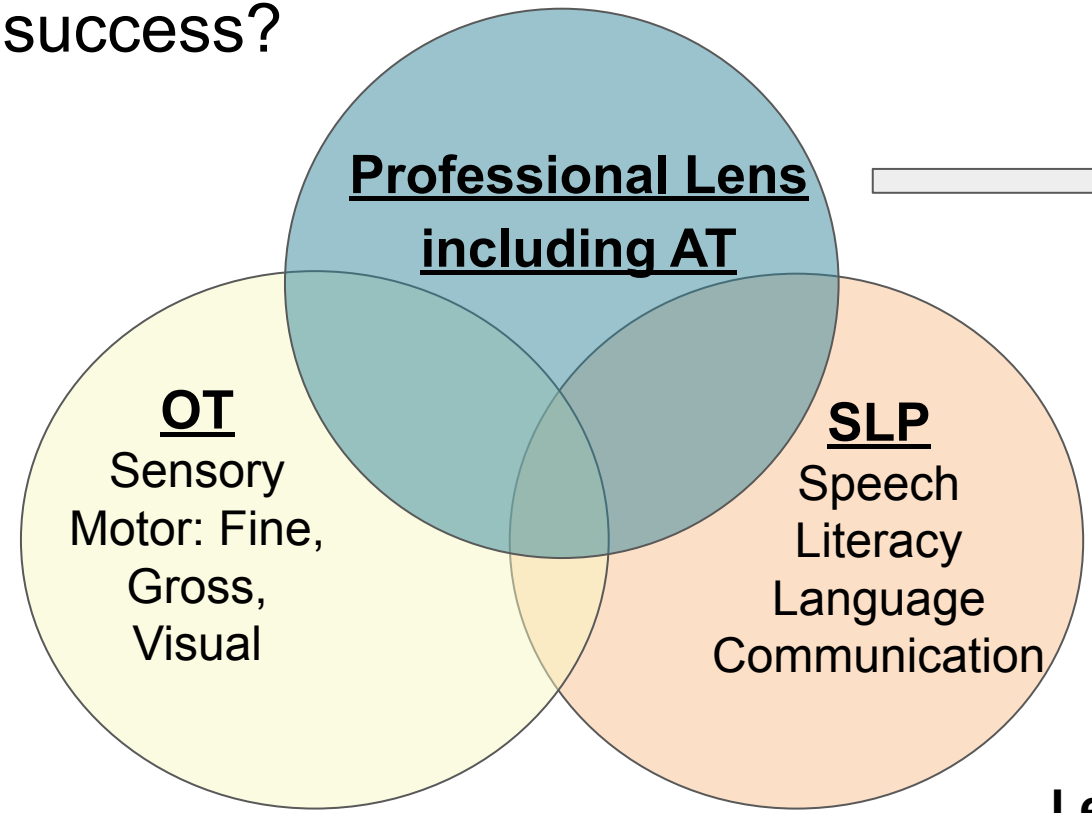
Who/What is an AT Specialist?

EVERYONE

IDEA - Every IEP team MUST consider Assistive Technology options

No legal requirement for an AT specialist

How do OT and SLP compliment each other for student success?



- Child centered
- Social & play
- Participation
- Functional / Meaningful
- Activity and task analyses
  - (breaking down into manageable / teachable parts)

Let's look at some examples…

The tie between language and motor

For beginning and emergent

Communicators - we focus on CORE

language

Core language is made up of a large

Percentage of VERBS

Verbs create action, directives and syntax

Strong connection between explosion in speech development and movement/mobility

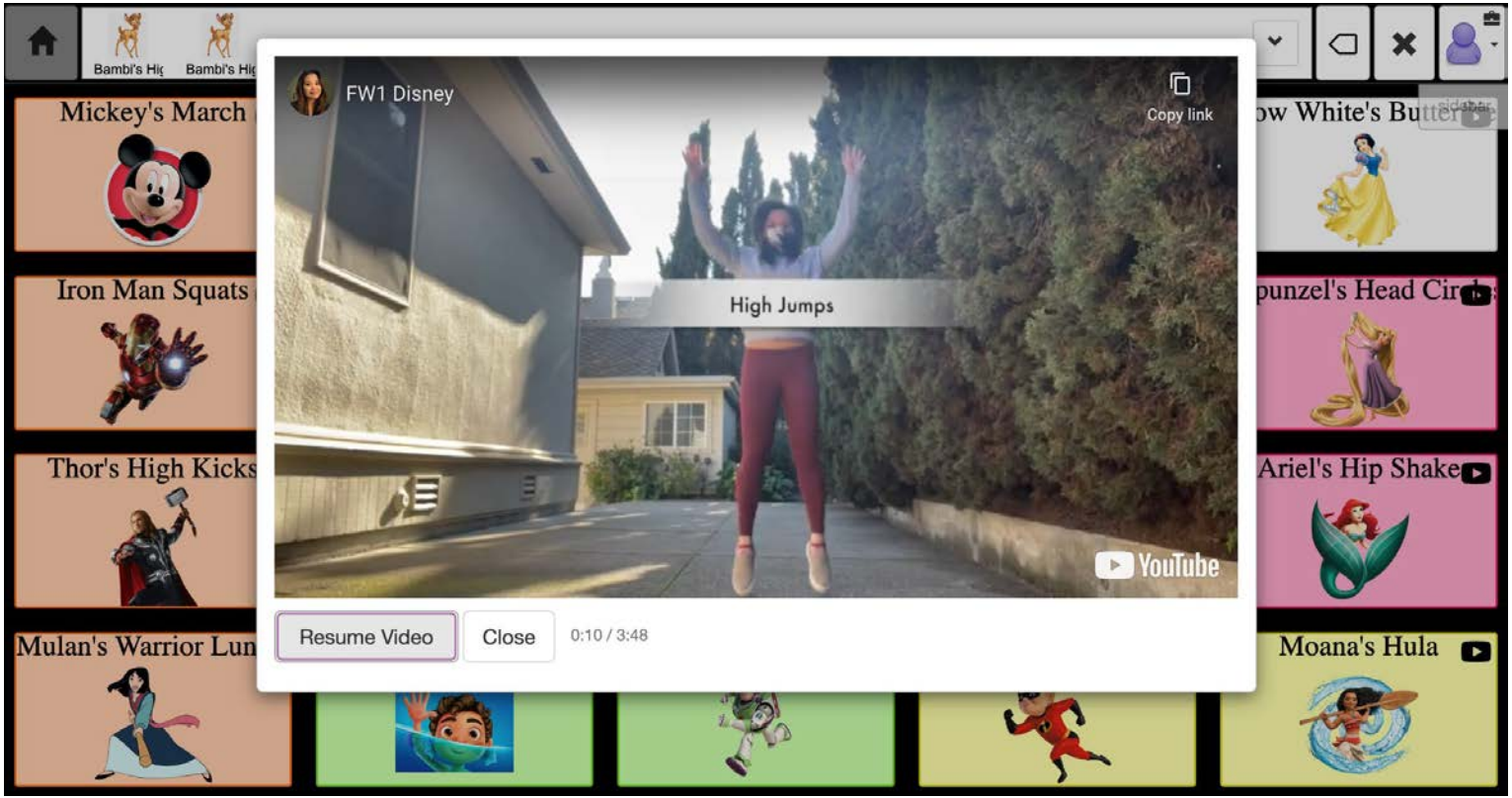
Dressing Sequence

- The student uses the same pictures at home and at school.
- Notice the Nouns & the verbs

(Hess & Chitwood, 2018)

Collaborative Morning Dressing Routine *(Look for: sensory, motor, language (nouns + verbs), communication, literacy & visuals)*

Love Gifty Cough Drop



Where does AT show up every day in School OT? Collaboration in AT should include:

- Evals & reports
- Present Levels on the IEP
  - NOT just OT or SLP “section”
  - Child focused
- Goals & persons responsible
- Service delivery & progress reporting
- Communication with the team and shared accountability
- Action plans
- Service delivery & progress reporting
- Communication with the team and shared accountability

MUST INCLUDE TEACHER

Red Flags

Do your IEPs, Present Levels, Evals look like separate professionals engaged in parallel play and they are merely stapled together??

What can you DO differently?

Planning and ACTION Considerations for the IEP Team

AT does NOT stop at the end of the evaluation….

Who is responsible for addressing AT on the IEP?

Is AT being considered for all areas of development / functioning?

Schedule your time

- **Is it weekly, monthly, quarterly, what do you NEED to plan for?**
- **Otherwise ALL other things will get in the way if you don't book and honor the collaborative time**

Develop an action plan

Zoom, google docs, use your tools!

Workload / Caseload considerations - YOUR skilled time as clinicians

Dan Phillips, MS, CCC-SLP
TRC Director, AT Specialist

Technology Resource Center, Marin
Trcmarin.org

Our History

Tech Resource Center Marin

TRC came out of the need for additional resources for our students

Our students need:

DEDICATION TO SPECIAL EDUCATION

- Access to assistive technology tools to try
- Knowledge about how to use these tools

Parent group - Dedication to Special Education - started our center in 2001. www.specialed.org

TRC serves 18 school districts - 36,000 general education students - 4,000 with identified special needs

System Barriers

No formalized AT evaluation process

Lack of resources - ability to try tools in a **TIMELY** manner

Lack of a funding budget (or person) to repair and maintain equipment

No time set for training

Does your district have an identified “AT” person or is that left in the hands of each IEP team?

What is the timeline for provision of equipment (not the IEP to review recommendations)

Is there a budget for repairs? Do you have replacement devices?

Do you have a trial policy prior to recommendations?

Our Model

www.trcmarin.org

Collaborative **Multi-Disciplinary** Model - NOT a single expert model

4 Targeted Areas of Intervention:

- Consultation (Assessment)
- Open Labs
- Trainings
- Resources

Consultations

Online referral - must be filled out by the district

Meant to be:

- Collaborative
- Multi-disciplinary
- Directed by lead team member - depending on needs
- Dynamic - needs to evolve

Our definition of our consultation: An AT Consultation is a focused team meeting with identified IEP team members, the student and his/her family whose purpose is to identify targeted technology supports to address identified student needs.

Open Labs

Technology is full of questions - from teachers, therapists, families and students

Open lab is a weekly chance to arrange a 45 minute meeting both in person or via Zoom

- Follow up training for tools
- Outlet for families to solve problems/answer questions
- Often a “first step” for a referral
- Allows professionals to discuss individual students or learn tools

If you create a system where the only way to receive AT services or knowledge is through an assessment, that is what everyone will do!

Trainings

An essential part of AT service delivery (3 of the 6 areas)

Often gets missed due to time/coordination

Online resources and trainings with TRC always available for FREE for anyone

Past Trainings

Ongoing Collaboration with TRC Marin & Dominican Occupational Therapy

Innovative model

- **Collab for AT / OT course**
- **Level 1 FW opportunity with SLP / AT specialist**

Opportunity for innovation in OT higher education

Collaboration between TRC and Dominican University

AT course

- Collaborative teaching (both on campus and at TRC)
- VIP days - adult/student users of assistive technology
- Lab days (focus/highlight some specific tools)

OT Level 1 Fieldwork placement

- Students each semester that have an assistive technology focused internship for a “deeper dive”

Why are we focusing on traditional tools?

Are these the tools that are relevant for the future?

Do motor skills for traditional tools translate to digital ones?

What is the “shelf life” for paper and pencil tasks in our schools?

"If we teach today's students as we taught yesterday's, we rob them of tomorrow." - John Dewey

What “should” we be doing?

Are we tied into doing certain things because of:

- Developmental norms?
- Traditional practice models?
- How long have you had “those goals”
- Scissors?

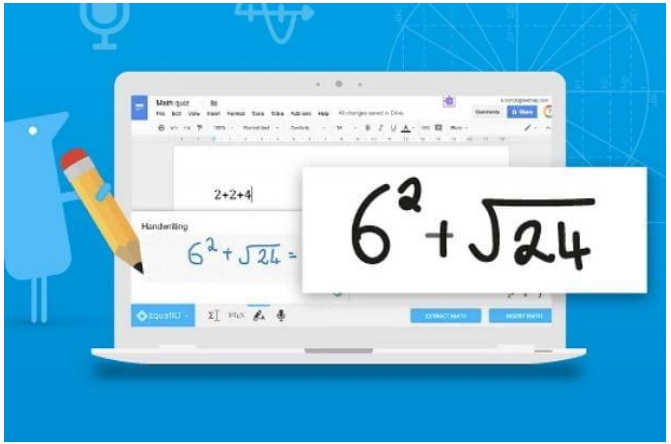
Chrome
Accessibility

The Universal Platform

Can be accessed from anywhere - follows the student/individual

EXTENSIONS!

Important types of extensions every OT should know!



Word Prediction

Take notes digitally

Make PDFs/JPGs accessible (you can write on them)

Math extensions for motor assistance

Exploding new technology that NEEDS OTs!

Tools of today will quickly become the tools of tomorrow

Many of these tools have tremendous relevance to our students with physical needs, but need assistance with access

Relevance isn't always apparent to everyone

Discuss & Stretch - 10 min

- Quick Share with your conference neighbor
  - Where do you see AT situated productively thus far in your OT practice?
  - Where are areas that you foresee AT growing and improving in your OT practice?
  - When you think of innovative tools for OTs, what comes to mind?

SETT

Student

Environment

Tasks

Tools

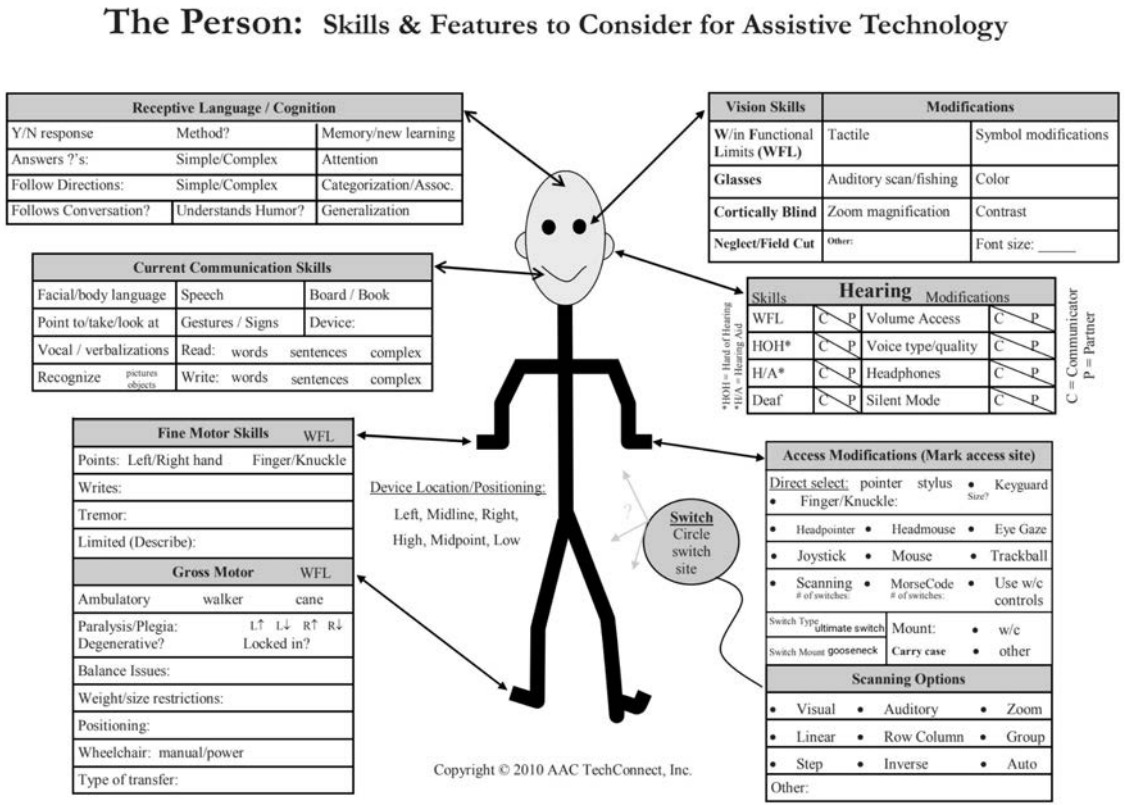
What are the Needs of the Student? How does the student Access tools? What are the student's strengths?

S

is for student's strengths, current performance and weaknesses in:

- Reading
- Math
- Writing
- Communication
- Learning and studying
- Vision, hearing and mobility
- Activities of daily living

AT: The Person

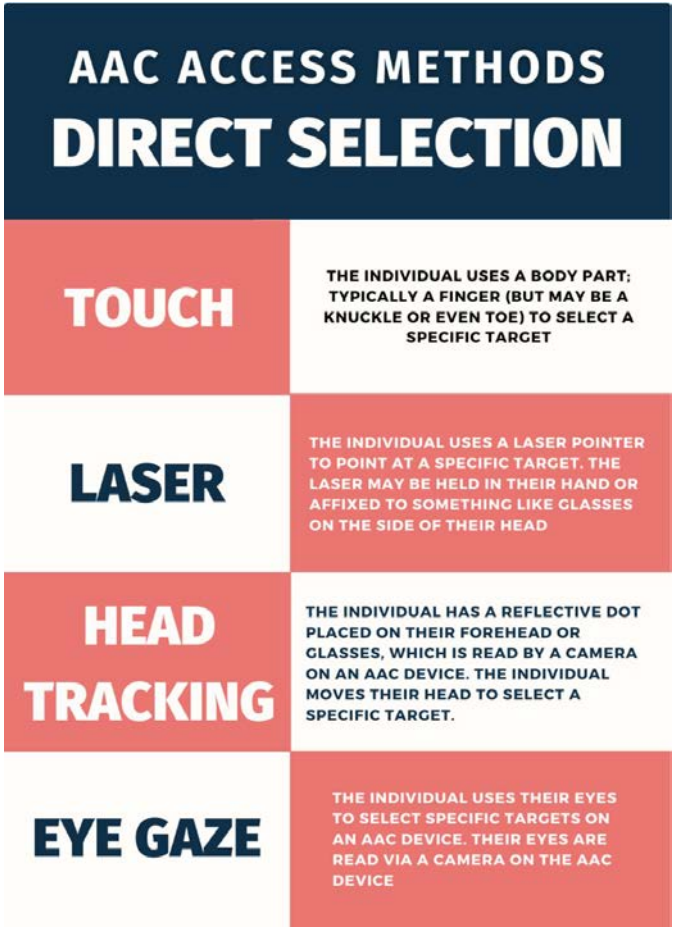


Access

OTs are often an important piece of the Access Decision

Direct Selection vs. Switch Access

Eye Gaze = Direct Selection

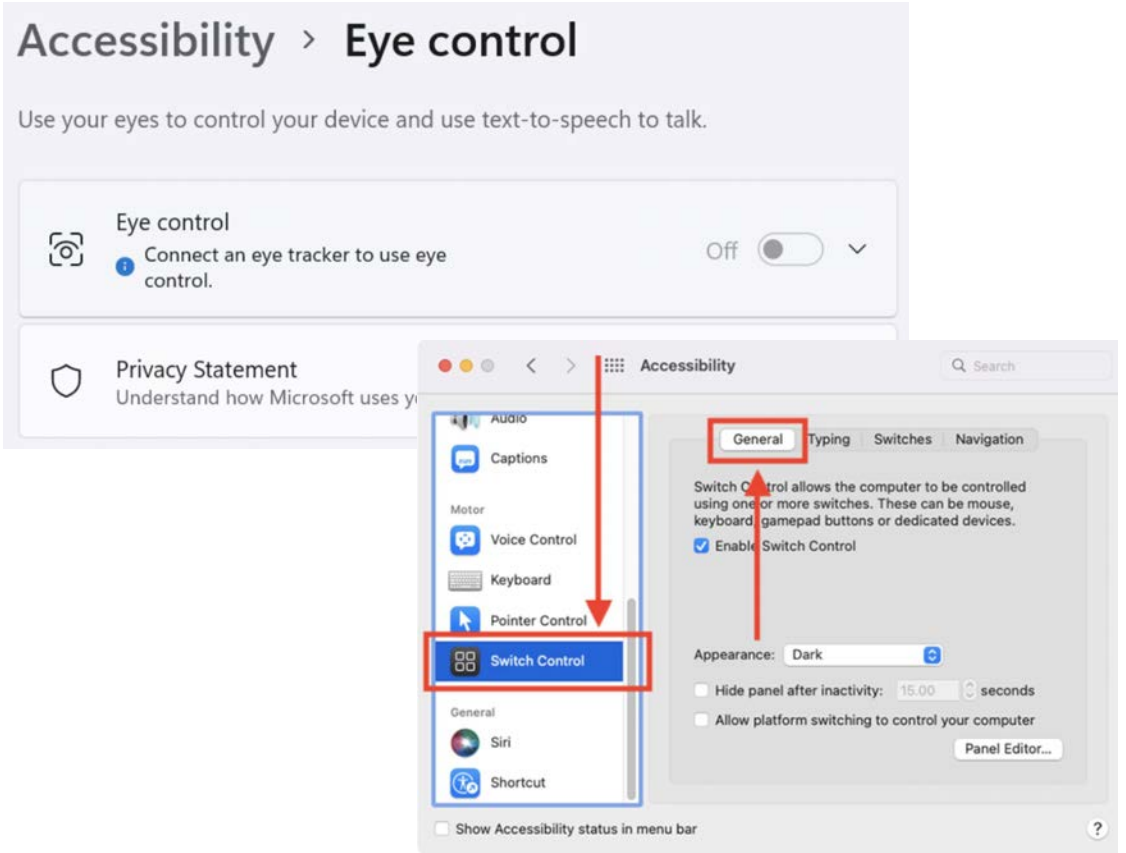


Access

Different Platforms excel in different access methods

PC - Eye Gaze

Mac - Switch Use



Eye Gaze

Thanks to gaming, rapidly becoming more mainstream

PC platform - the first platform to have eye gaze as an access method

Allows individuals to access any aspect of computer programs

Overcome challenges of keyboard/mouse access

Beginning interaction with tools - realize that your body is controlling something

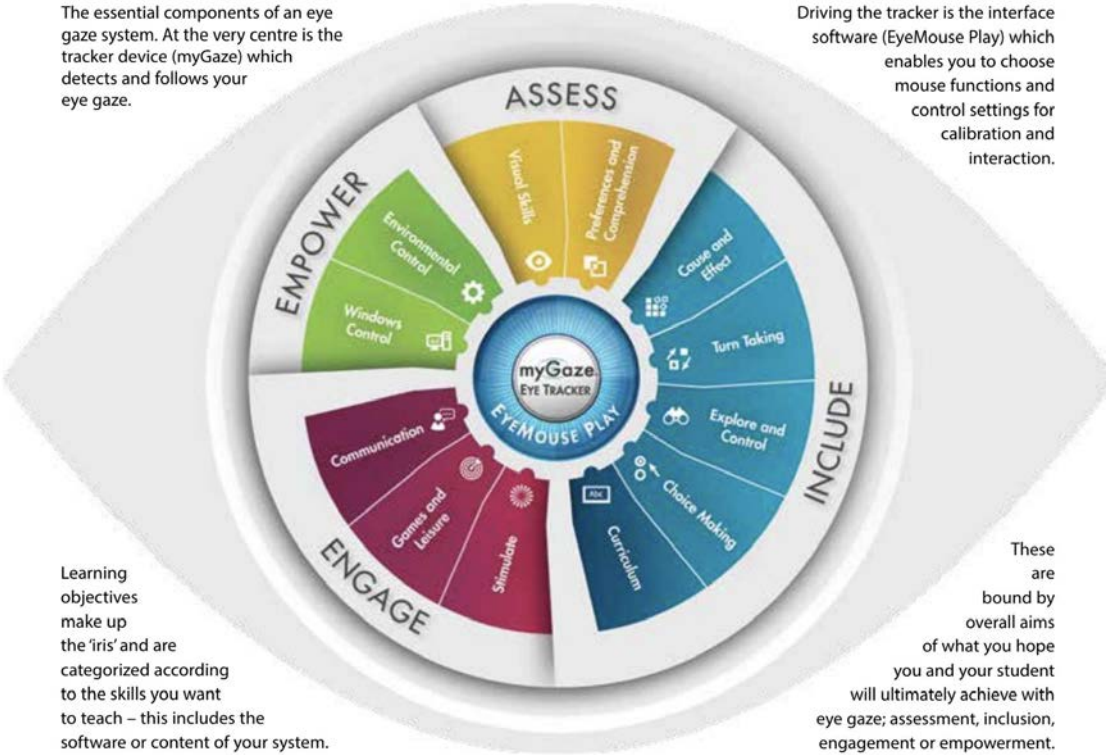
Eye Gaze Skill Continuum

Assess

Include

Engage

Empower



Assess

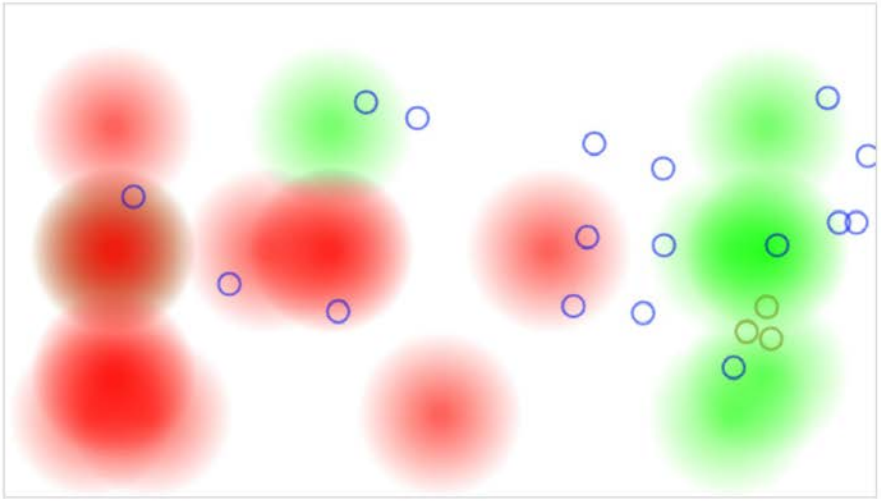
Easy to use software that allows us to assess skills for direct selection - using eyes or traditional means (pointing)

CoughDrop has free evaluation tool

Date	Duration	Accuracy	Avg. Response
Nov 19th 2020, 11:33 am	6.1 minutes	20 hits, 40%	5.1 seconds

Access Method	Mastered Grid	Mastered Buttons	Mastered Field
Dwell/Eye Gaze	2 x 4	~2.3" x 1.8"	field of 3

Grid Activations



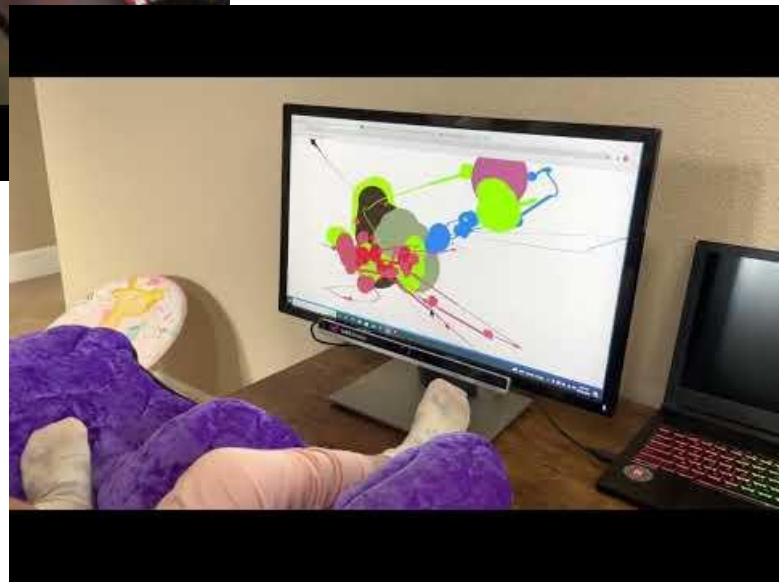
- correctly hit here
- failed to hit here
- hit here with full-size grid
- hit here with visual prompt

look for areas without any blue circles where the communicator wasn't able to reach, or for dark red areas where the communicator chose other (incorrect) options multiple times

Include

Begin to explore using eyes to interact

Motivating activities and games



Engage

More purposeful games and activities

Move to functional communication - activities

Empower

Purposeful communication

Environmental Controls

Controlling Computer functions

Eye Gaze Curriculum

Aim	Learning Stage	Software
Assess	Visual Skills	Attention and Looking
	Preferences and Comprehension	Attention and Looking / Exploring and Playing / Choosing and Learning
Include	Cause and Effect	Attention and Looking / HelpKidzLearn / Look to Learn
	Turn Taking	Exploring and Playing / HelpKidzLearn
	Exploring and Control	Exploring and Playing / Choosing and Learning / Eye Can Fly / HelpKidzLearn / Look to Learn
	Choice Making	Exploring and Playing / Choosing and Learning / Eye Can Fly / HelpKidzLearn / ChooseIt! Maker 3 / Look to Learn
	Curriculum	Eye Can Fly / HelpKidzLearn / ChooseIt! Maker 3
Engage	Stimulate	Attention and Looking / HelpKidzLearn
	Games and Leisure	Exploring and Playing / Eye Can Fly / HelpKidzLearn / Look to Learn
	Communicate	Choosing and Learning / ChooseIt! Maker 3 / Grid 3
Empower	Windows Control	Grid 3
	Environmental Control	Grid 3

3D printing and design

Tremendous explosion of use in medical community

Always a need for motor adaptations for AT tools:

- Keyguards
- Mounts
- Stands
- Switch access

Traditional methods are expensive and are often not customized

3D printing and design

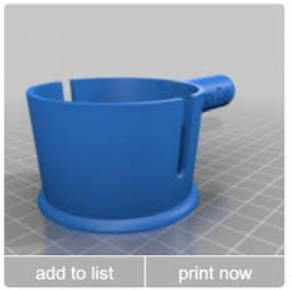
Lots of resources for OTs

Basic, free tools - Thingiverse

OT Specific Resources - Yeggi

Manipulate/Modify - TinkerCad

Tags THERA 3D MANION: FINGER TRACTION HELPER.



Tags Grippy Cup

Tags Rigid handle

Tags Free Rigid handle · 3D print object to download ·

Adaptive Gaming in the Classroom

(Ferrell, L.J.L., Fink-Fugazi, D.A., Manalang, C.A., Recinto, D.M., & Hess, L. 2020) In collaboration with D. Phillips

- Inclusion
- Social skills
- Motor skills
- Common Core Standards
- Evidence Based

Dominican Capstone Research Project team

The Gamer Gurlz!

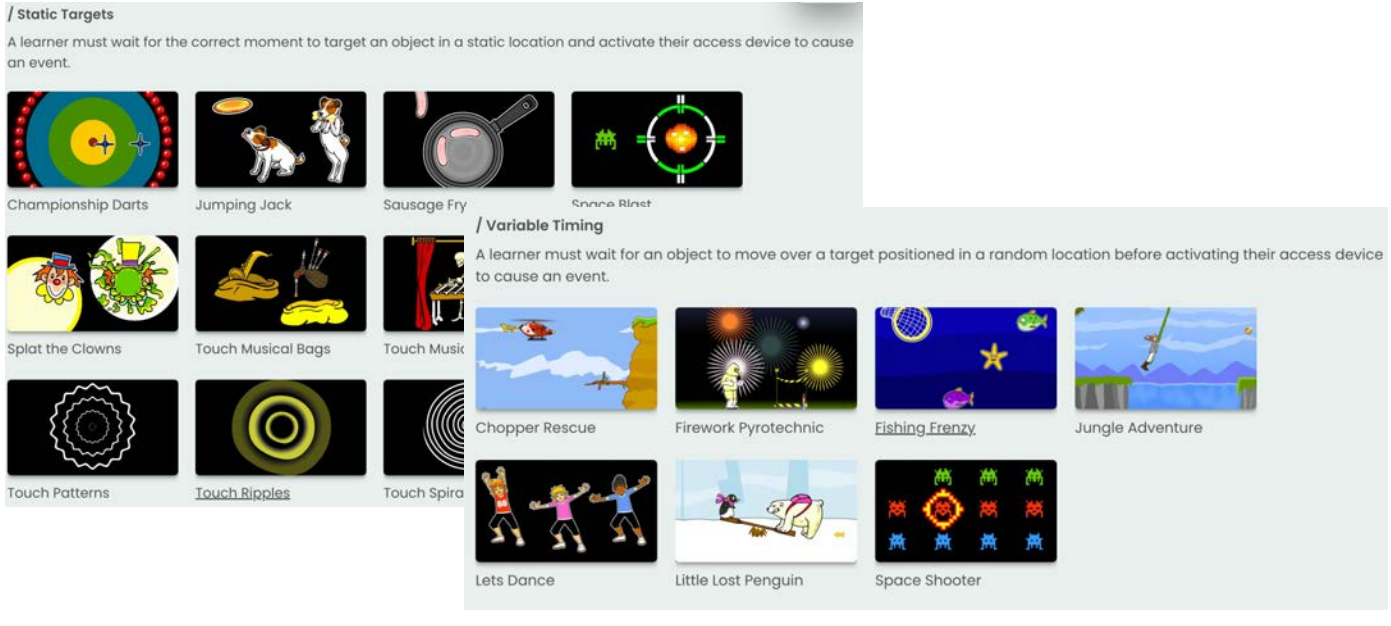
https://sites.google.com/view/adaptive-gaming/home

- Cause and Effect
  - Press and Hold
  - Press and Let Go
  - Press It Again
  - Exploration
- Sequential
- Attention & Timing
  - Wait then Press
  - Wait for Change
  - Locate Change
  - Experimental Play
  - Ready Steady Go
- Targeting & Timing
  - Static Targets
  - Variable Targets
  - Variable Timing
  - Moving Targets
- Introduce Choice

Switch Curriculum

Help Kidz Learn - example of eye gaze and switch activities to build skills

Browser or iOS availability



SETT

Student

Environment

Tasks

Tools

Where does this student need this intervention?

E

is for learning environment:

- How is the classroom physically arranged?
- What materials and equipment are used?
- How is instruction given (small groups, whole class)?

Virtual Reality

First use with assistive technology in 1994 for power wheelchair training

Neurological response to VR stimulation

Studies are revealing increased range of motion, strength, and overcoming fear and anxiety

Virtual Reality

Use of VR for art and connection

Studies now showing increased range of motion - movement

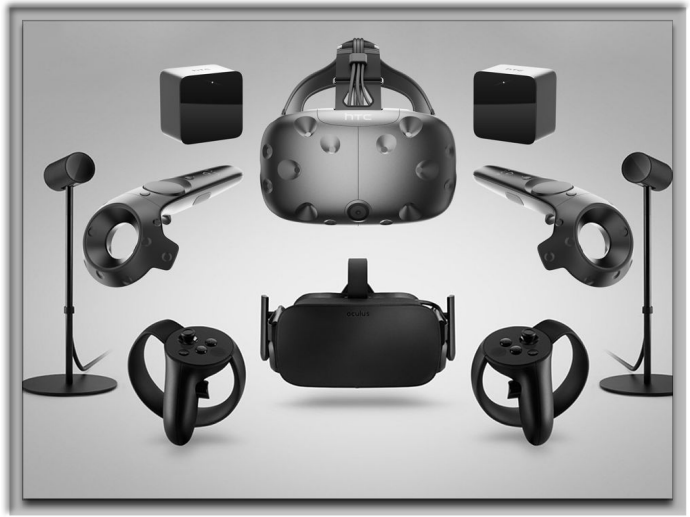
Areas to Explore

- Travel - Target areas around the world
- Experiences - Places you can't go: Space, Deep under the sea
- Periods of History
- Creativity/Design

Different types of VR

“Look around” - iOS VR and Samsung

“Interact” - Occulus and Vive



Curriculum Supports

Inexpensive

Google Cardboard

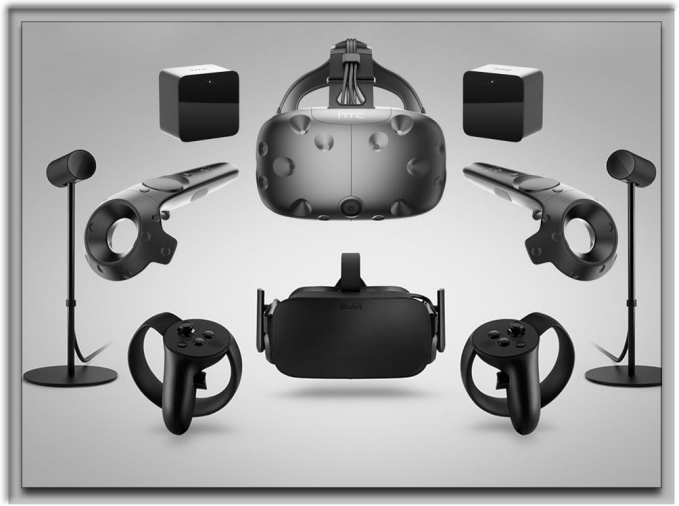
Off the shelf possibilities: wide range - both iOS and Samsung platforms

Prices range from $2 to $25

More advanced

Occulus: Cameras and Headset - cameras can be placed on table

HTC Vive: Base Station monitors - 2 placed at opposite ends of your “space” - headset



Steam and Vive Port

Need to have an account

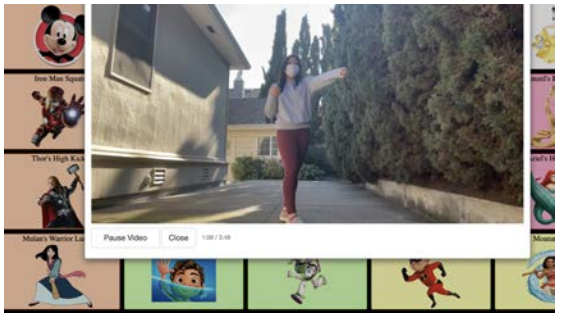
Some are free - Most good ones require subscription or individual purchase

Many are “game” based - search for educational content

Cough Drop
https://www.coughdrop.com/

What is your Leave Behind?

- Critical use of VISUAL supports for OT
  - Visual structure
  - Predictability
  - Builds MOVEMENT (verbs + nouns)
- Universal Design for Learning Platform including Response to Intervention



SETT

Student

Environment

Tasks

Tools

What does the student need to do?
IEP goals?
Breakdown Specifics

T

is tasks for learning:

- What is the class expected to be able to do?
- Which tasks are essential for your child to be successful?

Everyday Assistive Technology Needs

Reading

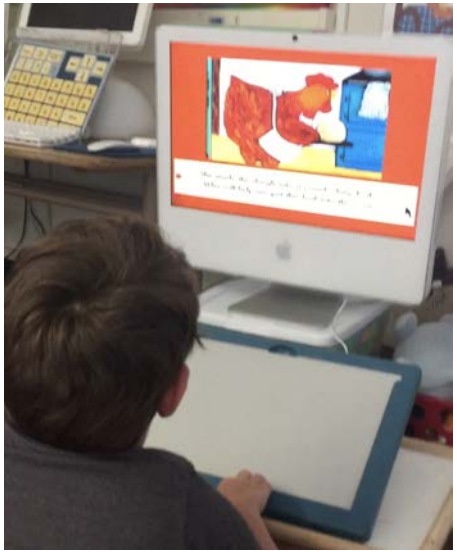
- Turning pages of a book - beginning literacy
- Taking Notes
- Digital Text Options
- Text to Speech

Writing

- Speech to Text
- Word Prediction
- Creating Templates to facilitate writing

What does reading a book look like?

This?



Or This?

OTs play a crucial role in an individual's first book experience

A Whole New World of Reading

Accessible digital reading sources are readily available

Emergent readers (One More Story, good example)

- Text on screen
- Highlighting text as it reads
- Recordable or Synthesized speech
- Turn page always in SAME place - motor patterns

Advanced Literacy to Grade Level

- Learning Ally - recordable speech
- Bookshare - FREE - synthesized speech

Text is ALWAYS available for digital reading

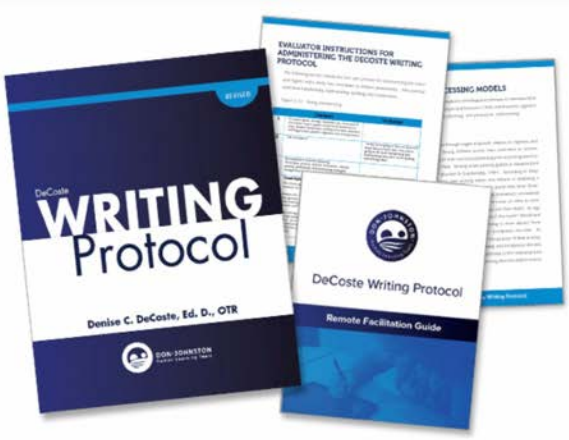
Definition of Writing

Transferring thoughts into a readable format

Productivity and Efficiency

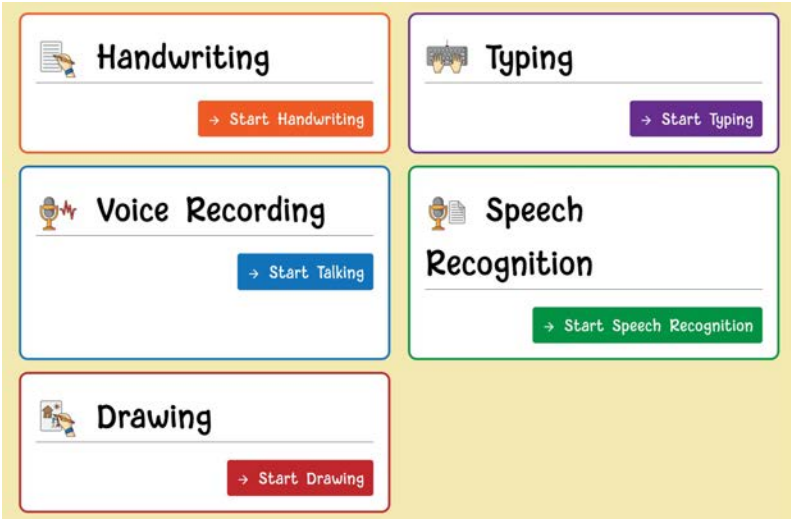
How is a student most productive when they write?

- Comparison with all modalities of writing
- NOT ALL WRITING IS THE SAME!
- Cognitive vs. Motor



Assessment Tools

- DeCoste Writing Protocols (1 minute)
  - Alphabet
  - Copying
  - Dictation
  - Free Write
- Online Assessment of Writing Methods



Do you know where these are in every platform?

Text to Speech (text read back to you)

Speech to text (using your voice to produce written text)

FREE in every digital platform

(iOS, Android, PC, Mac, Chrome)

Know your Word Prediction!

Not all Word Predictions are created equal

WHY is the student needing word prediction?

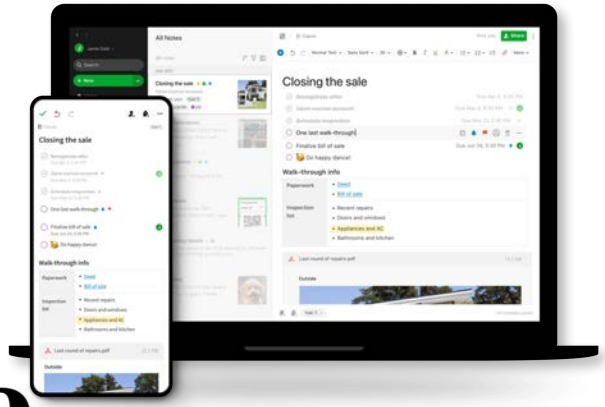
- Motor
- Spelling
- Sentence Formulation
- A combination?

Co:Writer - a stand out tool

- Word prediction based on grammar, vocabulary, topic, user
- Minimizes keystrokes by 50%

What is Note Taking?

How do you remember things?



Evernote

Notetaking - How we record things and store them in an organized place to recall and study them later

What are we expecting students to do?

Are they ways that WE recall information?

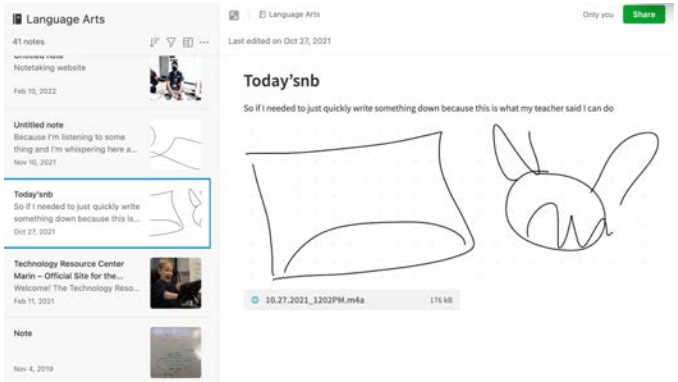
Are you using cloud-based tools?

Where are students most productive?

- Photos
- Audio Recordings
- Drawing
- Video
- Handwriting
- Typing

Evernote - great example of a cloud based tool on all platforms

Otter.AI - example of new world of recording information



SETT

Student

Environment

Tasks

Tools

What are the tools? How has this systematic review of the (S)tudent - (E)nvironment - (T)asks led you to make clear choices for tools?

T

is for tools being used to help your child and other tools that may help.

The IEP team considers the assistive technology range:

Low/No Tech

Mid-Level Tech

High Tech

Tools - Links to Resources

Assessments:

- AT The Person
- CoughDrop Motor Assessment
- DeCoste Writing Protocols
- Online Assessment of Writing Methods

Accessibility:

- Mac (Switch)
- PC (Eye Gaze)
- Chrome

Eye Gaze:

- Curriculum

3D Printing:

- Thingiverse
- Yeggi - OT Resources
- TinkerCad

Adapted Gaming:

- Dominican Research Project
- HelpKidzLearn

Virtual Reality:

- Occulus
- HTC Vive

Tools - Links to Resources

Reading/Literacy:

- One More Story
- Learning Ally
- Bookshare

Speech to Text:

- Mac
- PC
- Chrome

Word Prediction:

- CoWriter

NoteTaking:

- Evernote
- Otter.AI

Take Home Messages

Has your team created a pathway?

SETT- Take Home Messages for the OT

Student

Environment

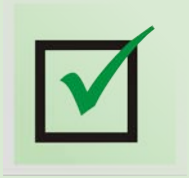
Tasks

Tools

What are the Needs of the Student? How does the student Access tools? What are the student's strengths? WHO is your person? What is important to them? What do they WANT to do?

SETT

Take Home Messages for the OT



Student

Environment

Tasks

Tools

Professional Environment -
Collaborate with the student, family & team for in-depth examination of school participation across activities & contexts

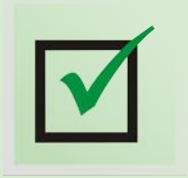
- Do you have workload / caseload collaboration considerations?
- Home to school collab is essential!!!

SETT

Take Home Messages for the OT

Student

Environment



Tasks

Tools

Professional Tasks - Where does AT show up in your daily OT practice?

- Plan & Document
  - Eval, Present levels, Goals
  - Action plans & implementation - follow up, training, customization, review & modify

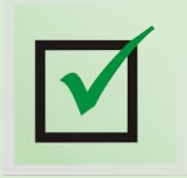
SETT

Take Home Messages for the OT

Student

Environment

Tasks



Tools

- **NO - LOW - HIGH AT Throughout the DAY *(a person is not merely low vs high tech)***
- Have you examined potential barriers for implementation?
- What is your “Leave Behind?”
- What is your follow up / action plan?
- What are your professional tools that are in place
- What professional tools do you still need?

Let’s discuss reframing our AT thinking.

Examine AT more broadly in your daily OT practice

What’s next?
How would you change how you incorporate AT?

Thanks for Joining Us!!!

Laura & Dan
laura.hess@dominican.edu
dphillips@marinschools.org

Additional Resources For your AT Tool Boxes *CASE EXAMPLES*

Meet Frankie

- 8 year old boy with FXS, ASD, IDD
- 2nd grade Special Day Class
- Receives services for behavior, occupational, and speech challenges
- Has verbal speech / language challenges
- Fine and gross motor delays - requires assistance with many ADLs

Strengths

- Good sense of humor
- Enjoys being around others and is observant of his environment

Loves

- Big trucks
- Disney
- Eating pizza

(Hess & Chitwood, 2018)

AT at HOME - ADLs = Dressing, Grooming, Eating

No Tech	Low Tech	High Tech
• Pick clothes out and organize the night before • Choose clothing that allows for independence and addresses Frank's sensory needs (e.g., soft clothing, tags removed, pull-on sweats). 	• Use visual schedules to show the steps. • Consistent labeling of pictures • Place visuals where needed - in bathroom, bedroom, kitchen, etc.  	• iPad with sturdy and water resistant cover. • Video modeling for ADLs. Short videos of each ADL task is on the iPad. Modeled by sibling at his home. 

(Hess & Chitwood, 2018)

High-Tech (multiple functions across settings & activities)

Communication

- Augmentative and Alternative Communication (AAC)
- Dynamic, speech generating device (SGD)
- Proloquo2Go (assistiveware.com)

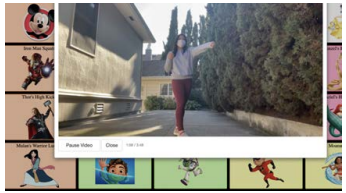
Academics & Transitions

- OSMO (https://www.playosmo.com/en/)
- Text to speech for books / literacy
- Time Timer app

(Hess & Chitwood, 2018)

Social & Sensory Motor

- Social Scripts
- Visuals + text
- CoughDrop for class & personal sensory motor programming
  - https://www.coughdrop.com/



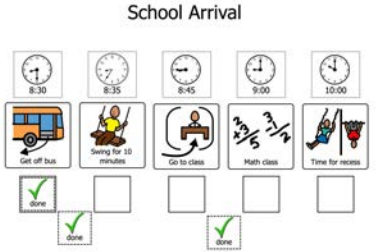
LOW-TECH AT

Sensory Motor

- Move and sit cushion
- Adapted scissors
- Pencil grips
- Scoop bowl with anti-skid

Transitions / Sequencing

- Classroom design



(Hess & Chitwood, 2018)

Meet Frannie

- 14 y/o, Female, LD, ADHD, Dyslexia
- Just transitioned to high school as a freshman. Has an IEP for special ed, resource, SLP for social skills and expressive language
- Has had OT for many years with a focus on handwriting. Parents have been focused on keeping OT and handwriting goals specifically. Now that she is in junior high, her self-regulation needs are a priority and the team is looking at how AT can support academic participation as she's very frustrated w / handwritten tasks.

Strengths

- Thrives on routine and being independent in ADLs (self-care, dressing, grooming, simple meal prep: microwave, sandwiches)
- Structured exercise w / focus on heavy work, helps with sensory processing & self-regulation
- Benefits from to-do lists and an organized calendar and reminders

Morning Routine

High Tech	Low Tech
Alarms & calendars to wake up YouTube Video modeling & Fitness tracker for heavy work AM exercise	Medication box - Helps Frannie and her family keep track of her medication dosing.
   	

(Hess & Chitwood, 2018)

During School

(Hess & Chitwood, 2018)

High Tech - Academics	Accommodations & Self-Regulation (No / Low Tech)
• Laptop / Chromebook • CO:Writer (or other) for word prediction and text to speech • Reduce handwriting for academics • Calendars • E-books	• Extended time and quiet environment for tests / quizzes • Standing breaks as needed during class • 5-15 min walk between classes • Carry heavy backpack (ergonomic set up) • Chew gum & drink water during class
	  

Task management & social skills

Time management, To Dos	Social / Leisure	Self-Regulation
• AnyList • Alarms / calendars	• PDFs or Powerpoint or Text Social scripts (custom) • Storyboard That ○ https://www.storyboardthat.com/articles/e/social-stories-for-teens	• Yoga • Breathe
		

(Hess & Chitwood, 2018)

Case Studies - Essential Considerations

- WHO is your person? What is important to them? What do they WANT to do?
- Collaborate with the student, family & team for in-depth examination of school participation across activities & contexts
  - Home to school collab is essential!!!
- Plan & Document
  - Eval, Present levels, Goals
  - Action plans & implementation - follow up, training, customization, review & modify
- **NO - LOW - HIGH AT Throughout the DAY** ***(a person is not merely low vs high tech)***
- Have you examined potential barriers for implementation?
- What is your “Leave Behind?”

Additional Resources Links & More From Today's Presentation

Additional Resources

- (Hess & Chitwood, 2007) - AT and the IEP
  - chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://fragilex.org/wp-content/uploads/2015/08/NFXF-AT-and-the-IEP-6-07.pdf
- Hess, L.G., & Chitwood, K.L. (2018) Using Technology Tools and Strategies to Increase Participation. In S. Spitzer and R. Watling (Eds.), *Autism, 4th edition.* Bethesda, MD: AOTA Press.
-

WATI - Wisconsin Assistive Technology Initiative

Assessing Student Needs for AT (ASNAT - check it out & download what helps you meet the needs of your students).

https://www.wati.org/free-publications/assessing-students-needs-for-assistive-technology/

OTPF Contexts: Environmental Factors

Products and Technology including ASSISTIVE TECHNOLOGY

Table 4. Context: Environmental Factors *(cont'd)*

Environmental Factor	Components	Examples
	Sound and vibration: Heard or felt phenomena that may provide useful or distracting information about the world	• Vibration of a cell phone indicating a text message • Bell signaling the start of the school day • Outdoor emergency warning system on a college campus
	Air quality: Characteristics of the atmosphere (outside buildings) or enclosed areas of air (inside buildings)	• Heavy perfume use by a family member causing an asthmatic reaction • Smoking area outside an office building • High incidence of respiratory diseases near an industrial district
Products and technology: Natural or human-made products or systems of products, equipment, and technology that are gathered, created, produced, or manufactured	Food, drugs, and other products or substances for personal consumption	• Preferred snack • Injectable hormones for a transgender man • Grade-school cafeteria lunch
	General products and technology for personal use in daily living (including assistive technology and products)	• Toothbrush • Household refrigerator • Shower in a fitness or exercise facility
	Personal indoor and outdoor mobility and transportation equipment used by people in activities requiring movement inside and outside of buildings	• Four-wheeled walker • Family car • Elevator in a multistory apartment building
	Communication: Activities involving sending and receiving information	• Hearing aid • Text chain via personal cell phones • Use of emergency response system to warn residents of impending dangerous storms
	Education: Products and methods for acquiring knowledge, expertise, or skill	• Textbook • Online course • Curriculum for workplace sexual harassment program
	Employment: Paid work activities	• Home office for remote work • Assembly factory • Internet connection for health care workers to access electronic medical records
	Cultural, recreational, and sporting activities	• Gaming console • Instruments for a university marching band • Soccer stadium
	Practice of religion and spirituality	• Prayer rug • Temple • Sunday church service television broadcast
	Indoor and outdoor human-made environments that are planned, designed, and constructed for public and private use	• Home bathroom with grab bars and raised toilet seat • Accessible playground at a city park • Zero-grade entry to a shopping mall

(Continued)

OTPF - Types of OT interventions

Person, Group & Population

Table 12. Types of Occupational Therapy Interventions *(cont'd)*

Intervention Type	Description	Examples
Orthotics and prosthetics	Construction of devices to mobilize, immobilize, or support body structures to enhance participation in occupations	*Person* Practitioner fabricates and issues a wrist orthosis to facilitate movement and enhance participation in household activities. *Group* Group members participate in a basketball game with veterans using prosthetics after amputation.
Assistive technology and environmental modifications	Assessment, selection, provision, and education and training in use of high- and low-tech assistive technology; application of universal design principles; and recommendations for changes to the environment or activity to support the client's ability to engage in occupations	*Person* Practitioner recommends using a visual support (e.g., social story) to guide behavior. *Group* Practitioner uses a smart board with speaker system during a social skills group session to improve participants' attention. *Population* Practitioner recommends that a large health care organization paint exits in their facilities to resemble bookshelves to deter patients with dementia from elopement.
Wheeled mobility	Products and technologies that facilitate a client's ability to maneuver through space, including seating and positioning; improve mobility to enhance participation in desired daily occupations; and reduce risk for complications such as skin breakdown or limb contractures	*Person* Practitioner recommends, in conjunction with the wheelchair team, a sip-and-puff switch to allow the client to maneuver the power wheelchair independently and interface with an environmental control unit in the home. *Group* Group of wheelchair users in the same town host an educational peer support event.
Self-regulation	Actions the client performs to target	*Person*

OTPF - Approaches to Intervention

“Maintain” - Key feature of AT

Table 13. Approaches to Intervention

Approaches to intervention are specific strategies selected to direct the evaluation and intervention processes on the basis of the client's desired outcomes, evaluation data, and research evidence. Approaches inform the selection of practice models, frames of references, and treatment theories.

Approach	Description	Examples
Create, promote (health promotion)	An intervention approach that does not assume a disability is present or that any aspect would interfere with performance. This approach is designed to provide enriched contextual and activity experiences that will enhance performance for all people in the natural contexts of life (adapted from Dunn et al., 1998, p. 534).	*Person* Develop a fatigue management program for a client recently diagnosed with multiple sclerosis *Group* Create a resource list of developmentally appropriate toys to be distributed by staff at a day care program *Population* Develop a falls prevention curriculum for older adults for trainings at senior centers and day centers
Establish, restore (remediation, restoration)	Approach designed to change client variables to establish a skill or ability that has not yet developed or to restore a skill or ability that has been impaired (adapted from Dunn et al., 1998, p. 533)	*Person* Restore a client's upper extremity movement to enable transfer of dishes from the dishwasher into the upper kitchen cabinets Collaborate with a client to help establish morning routines needed to arrive at school or work on time Educate staff [illegible] group home for clients with serious mental [illegible] to develop a structured schedule, chunking [illegible]ks to decrease residents' risk of being [illegible] whelmed by the many responsibilities of daily life roles *Population* Restore access ramps to a church entrance after a hurricane
Maintain	Approach designed to provide supports that will allow clients to preserve the performance capabilities that they have regained and that continue to meet their occupational needs. The assumption is that without continued maintenance intervention, performance would decrease and occupational needs would not be met, thereby affecting health, well-being, and quality of life.	*Person* Provide ongoing intervention for a client with amyotrophic lateral sclerosis to address participation in desired occupations through provision of assistive technology *Group* Maintain environmental modifications at a group home for young adults with physical disabilities for continued [illegible] and engagement with house[illegible]

(Continued)