

# Access through AT

Reading, Writing, Math, Communication

<https://www.youtube.com/watch?v=b8iOEDDabGo>

An Introduction...

# Terms

**Assistive Technology (AT):** any tool and /or system implemented to improve and/or maintain the capabilities of an individual with a disability

- Writing
- Reading
- Computer Access
- Communication
- Play
- More...

**Performance Gaps:** when one component of a skills is higher or out of balance with other components; this typically warrants AT intervention

- ***Communication:*** receptive/expressive language
- ***Writing:*** motor/cognitive linguistic
- ***Reading:*** fluency/comprehension

# Universal Design (UD)

UD is "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design"

([www.ncsu.edu/ncsu/design/cud/pubs\\_p/docs/poster.pdf](http://www.ncsu.edu/ncsu/design/cud/pubs_p/docs/poster.pdf)).

## Principals:

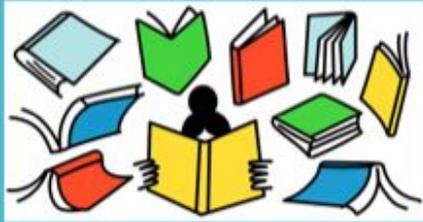
- Equitable Use
- Flexibility in Use
- Simple and Intuitive Use
- Perceptible Information
- Tolerance for Error
- Low Physical Effort
- Size and Space for Approach and Use

## UD for Learning:

- **Representation:** show information in different ways
- **Action & Expression:** approach learning tasks and allow students to demonstrate what they know in different ways
- **Engagement:** offer multiple options to engage students to keep interest

# READING

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# Reading Components

- **Visual Display:** how the text is visually presented
  - Font
  - Size
  - Color/contrast
  - Spacing
- **Visual Tracking:** ability of the eyes to move smoothly, accurately, and quickly across a line or from one object to another
- **Vocabulary:** words that make up a language
- **Comprehension:** level of understanding of a text
- **Fluency:** the ability to read a text accurately, quickly, and with expression

## Visual Displays- Word Walls

An organized collection of words & symbols that are prominently displayed within the environment and used to help the individual reference, read, & learn new vocabulary



# Vocabulary/Comprehension- visual supports

4



This is Earth.  
Earth is our home.

**All Around the Sun**

spin 	all 	around 	Sun 	Mercury 	Venus 
	hot 	bright 	Earth 	home 	Mars 
	red 	big 	Jupiter 	Saturn 	ice rings 
	windy 		Uranus 	Neptune 	planet 

# Fluency/Phonics- text to speech

[https://www.youtube.com](https://www.youtube.com/watch?v=J4vazTRLzUc)

[/watch?v=J4vazTRLzUc](https://www.youtube.com/watch?v=J4vazTRLzUc)

[https://www.youtube.com](https://www.youtube.com/watch?v=ZSIY6hR8Ujk)

[/watch?v=ZSIY6hR8Ujk](https://www.youtube.com/watch?v=ZSIY6hR8Ujk)



**Bookshare**

A BENETECH INITIATIVE

[https://www.youtube.com/  
watch?v=ExqTYgbwS7E](https://www.youtube.com/watch?v=ExqTYgbwS7E)

[https://www.youtube.com/wa  
tch?v=ZSIY6hR8Ujk](https://www.youtube.com/watch?v=ZSIY6hR8Ujk)



**Learning Ally™**

TOGETHER IT'S POSSIBLE

# PERSONAL BOOKS

**Accommodate:** reading level, visual display, visual supports, etc

**Encourage Participation**

**Facilitate Peer Interaction**

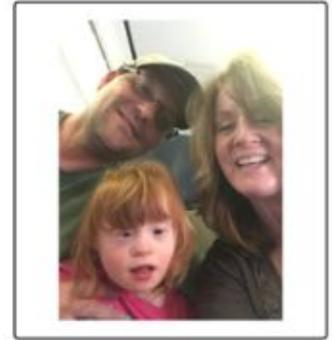
**Uses**

- Curricular Content
- Personal Narratives
- Social Stories

**Options**

- Pictello
- Book Creator
- BoardMaker

All About Casey



My family.



Splish Splash  
with the Roos



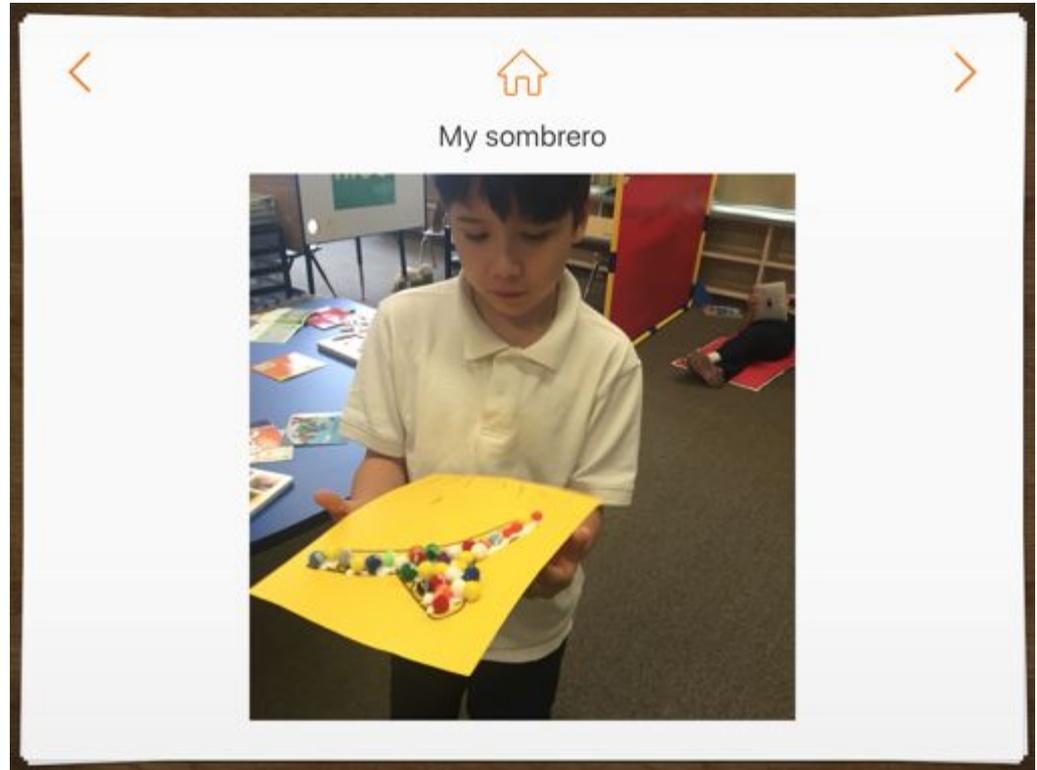
Naya gets wet.



# Personal Narratives

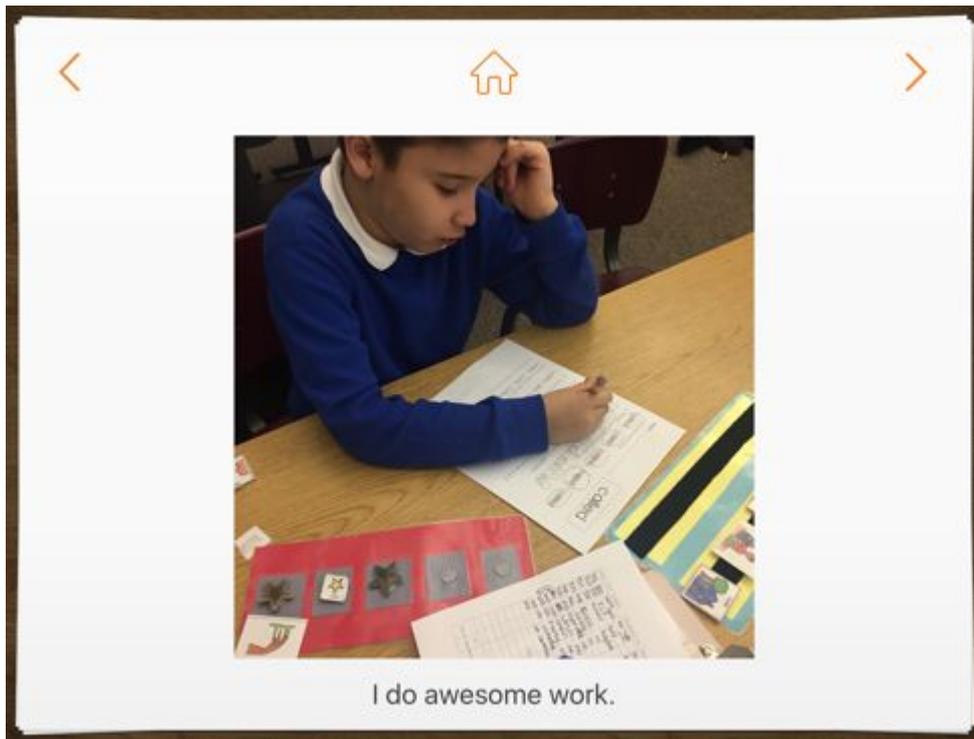
Personal Narratives tell a story about something that happened to you.

For those with difficulty with communicating out of context, these narratives with pictures, written words, and voice output will support sharing experiences, interacting with others, and learning language.



## Social Stories

Social Stories can be created and serve as a visual guide describing various social interactions, situations, behaviors, skills or concepts. They can teach Alcides what to expect and expected behaviors in a given situation, activity or environment.



# Curricular Content

Curricular content can be displayed in Pictello and taught to Alcides in advance or provided as modified classwork. Stories can be created covering thematic units and/or concepts.



# Some Reading Tools

Visual Display	Word Walls
Visual Tracking	Increased font size Decreased words Text to Speech Supports: <ul style="list-style-type: none"><li>• Bookshare, Voice Dream Reader, Learning Ally</li></ul>
Vocabulary	Visual Supports: <ul style="list-style-type: none"><li>• News2You, BoardMaker</li></ul>
Comprehension	Personal Books
Fluency	Text to Speech Supports: <ul style="list-style-type: none"><li>• Bookshare, Voice Dream Reader, Learning Ally, Step by Step</li></ul>

**WRITING**

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# Writing Components

- **Motor Aspects**
  - **Positioning:** seating, desk, etc
  - **Utensils:** paper, pen, keyboard, voice recognition, etc
  - **Time/Labor:** is writing a long an arduous process
  - **Legibility**
- **Composition**
  - **Idea Generation:** retrieving words and ideas
  - **Organization:** paragraphs, sequencing
  - **Spelling**
  - **Grammar**

**"WRITING  
IS THE  
PAINTING  
OF THE  
VOICE!"**  
VOLTAIRE

# Case Study: Joseph

**Age:** 13

**System(s):** Accent 800, interfaced with computer

**Environment/Task:** Science class and writing assignment

**Partner Strategies:** preparation; equipment knowledge and set up

**Teaching Tools:** pre-teaching; visual supports: smart charts; device; computer

**Environment:** providing opportunities; motivating activities (writing)



# Case Study: Liam

<https://youtu.be/IV8zJMMbkqM>

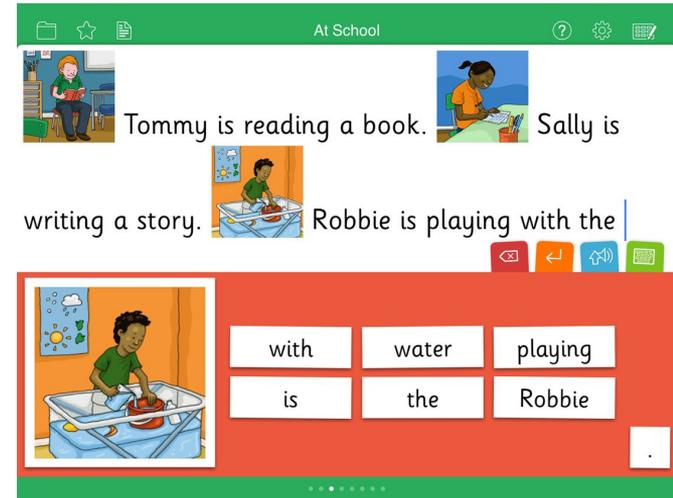
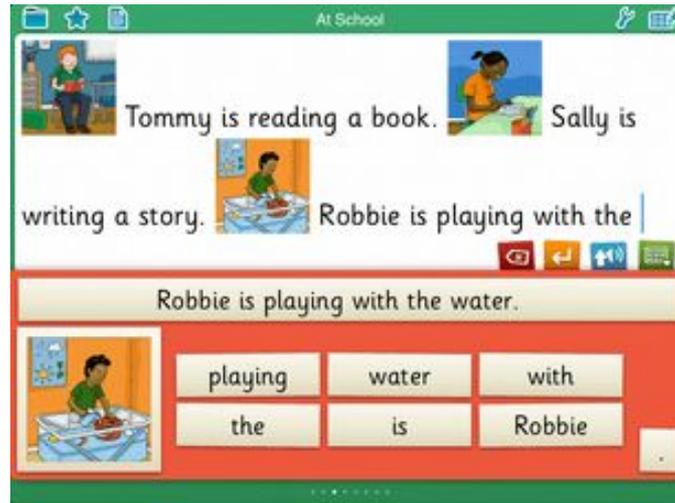
**System(s):** iPad, Clicker  
Sentences

**Environment/Task:** Homework

**Partner Strategies:** preparation;  
equipment knowledge and set  
up; motivating topics

**Teaching Tools:** experience;  
device;

**Environment:** providing  
opportunities; motivating  
activities (writing)



# Liam's Writing

Most of my ancestors came from England.  My great grandpa Pool's family came from England to

Mexico in 1889.  His daughter is my Grandma.

 She came to California when she was 17 to go to college.  Grandma met my Papa at college

and they got married.  Pop's family came from

England to Ireland then to Canada in 1835. Pop came to California to work at Canadian



consulate in 1984. 

school when they came. 

and they got married in California. 

in Santa Clara, California. 

Brentwood, California. 

My dad was in middle

My dad met My mom

I was born

Now I live in

## Clicker Writing Apps

The Clicker Apps family consists of a range of writing support tools. With the Clicker writing apps there is appropriate support for every student, no matter what stage of literacy they have reached. Each app focuses on one key feature of Clicker, to support children to develop their writing skills one step at a time.



### Clicker Sentences

#### Who is it for?

- Emergent writers
- English language learners
- Older children struggling to acquire basic literacy skills

#### What does it do?

Clicker Sentences supports children to build their first sentences using words from a grid, with options for differentiated writing support.

#### At a glance

- ✓ Speech feedback
- ✓ Model sentences
- ✓ Illustrate writing with pictures
- ✓ Crick Picture Library included



### Clicker Connect

- Developing writers
- Struggling writers
- English language learners
- Children moving on from using Clicker Sentences

Clicker Connect scaffolds independent writing skills by offering words and phrases to support children as they build sentences and compose coherent text.

- ✓ Speech feedback
- ✓ Color-coded cells
- ✓ Words and pictures within cells
- ✓ Crick Picture Library included

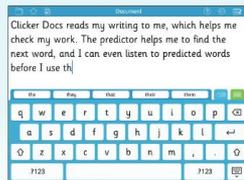


### Clicker Docs

- Elementary and Middle School students of all abilities
- Students with dyslexia
- Struggling spellers

Clicker Docs transforms your device into a portable elementary school word processor and encourages independent writing with the support of word prediction and word banks.

- ✓ Speech feedback
- ✓ Word banks
- ✓ Word prediction
- ✓ Talking spellchecker



### Clicker Books

- Elementary and Middle School students of all abilities
- Students with dyslexia
- Struggling writers

Clicker Books lets students create their own talking books, using a range of differentiated support. Teachers can also create reading books for students.

- ✓ Speech feedback
- ✓ Word banks
- ✓ Illustrate writing with pictures
- ✓ Word prediction
- ✓ Talking spellchecker
- ✓ Sound recorder



# Case Study: Andre

**Age:** 8

**System(s):** Accent 800, interfaced with computer, highlighter, scribe

**Environment/Task:** Writing workshop

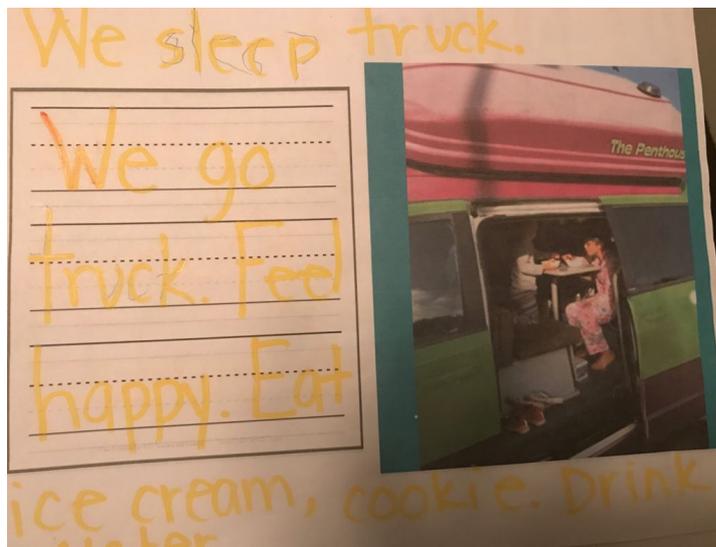
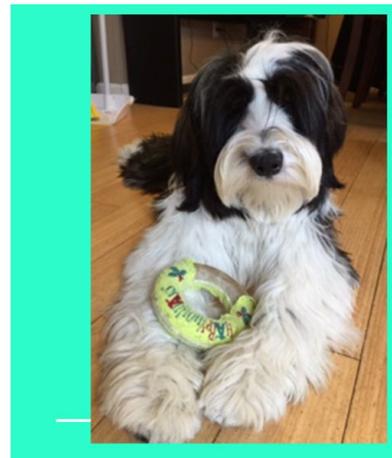
**Partner Strategies:** preparation; equipment knowledge and set up

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**Environment:** providing opportunities; motivating activities (writing)

BUSTER

Buster feel sad feel mad  
Drink juice to drink iced  
tea drink iced tea stop help  
clothes is work feel good  
Papa Buster get book drink  
juice need hug feel sad  
-4/18/17



# Some Physical Writing Tools

Positioning	Collaboration with PT/OT; supportive seating; slant board
Utensils	Various pencils, pens, markers <ul style="list-style-type: none"><li>• highlighting</li></ul> Keyboards (on-screen or stand alone) Dictation- stay tuned!
Time/Labor	Typing options Built-in dictation
Legibility	Various paper options Word Processing

# Some Writing Composition Tools

<i>Idea Generation</i>	Personal and/or motivating pictures/photographs Visual Supports
<i>Organization</i>	Graphic Organizers Snap Type Pro
Editing	Text to Speech- listen for funny words
Spelling/Grammar	Built in spell/grammar checks Clicker Docs

**MATH**

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# Math Components



- **Physical Access:** positioning & writing
- **Math Facts & Fluency:** ability to recall and answer basic math facts with accuracy and automaticity
- **Math Literacy:** understanding math terms & concepts
- **Processes and Organization:** following multiple steps of calculation

# Math Tools and Software

Creating UD at Star...

Component	All Grades
Physical Access/Legibility	<ul style="list-style-type: none"><li>• COLLABORATION WITH PT &amp; OT</li><li>• Panther Math Paper</li><li>• Enlarged problems</li></ul>
Math Facts and Fluency	<ul style="list-style-type: none"><li>• Times tables</li><li>• Calculator</li><li>• Manipulatives</li></ul>
Literacy	<ul style="list-style-type: none"><li>• Definitions</li></ul>
Process and Organization	<ul style="list-style-type: none"><li>• Task analysis</li></ul>



**COMMUNICATING**

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# AAC Systems and Profiles

## SYSTEMS

- No Tech
- Low Tech
- Light Tech
- High Tech

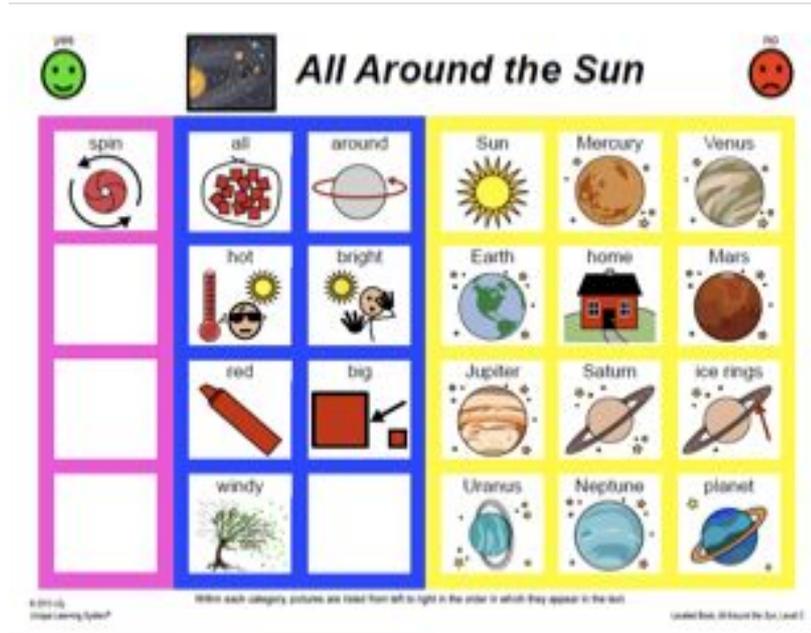
## USER PROFILES

- Emergent
- Entry
- Intermediate
- Advanced

# Low Tech

Communication aids which do not run from a power source

- PECS: Picture Exchange Communication System
- Communication board
- Forced Choice



## Light Tech

System which are typically battery operated and have a static (non-changing) display

- Big Mac
- Step by Step
- Tech Talk
- Go Talks

<https://www.youtube.com/watch?v=w5cCEwhOifs>



## High Tech

Systems typically requiring an electronic power source and have a dynamic display (changing)

- NovaChat
- Accent
- iPad (e.g. ProLoQuo2Go, TouchChat)



## High Tech- Peer Interaction

Systems typically requiring an electronic power source and have a dynamic display (changing)

- NovaChat
- Accent
- iPad (e.g. ProLoQuo2Go, TouchChat)



## High Tech- Class Presentation

Systems typically requiring an electronic power source and have a dynamic display (changing)

- NovaChat
- Accent
- iPad (e.g. ProLoQuo2Go, TouchChat)

[https://www.youtube.com/watch?v=9\\_P8kLx dDHs](https://www.youtube.com/watch?v=9_P8kLx dDHs)



# IMPLEMENTATION

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# Need Components

Collaboration

Confidence (tech)

Positive Attitude

Creativity

...Implementation Plan

Activity/ Time	Equipment/ Tools	What Student Does	How Staff Facilitates
Arrival and Free Play 8:45-9:10	Free Play Activities  Choice Board for Activities and 'What I think'.	Upon arrival Ann will wave hello to classroom staff and peers.  Ann will use the choice boards to choose a free play activity and comment on the activity.	Classroom staff will wave and say hello to Ann. They will wave hello to her to model waving.  Staff will present Ann with the free play choice board to choose a free play activity.  During or after completing an activity, staff will ask Ann what she thinks of the activity and provide her with the 'What I think' choice board to comment.