Assistive Technology Resources for Children and Adults with Disabilities

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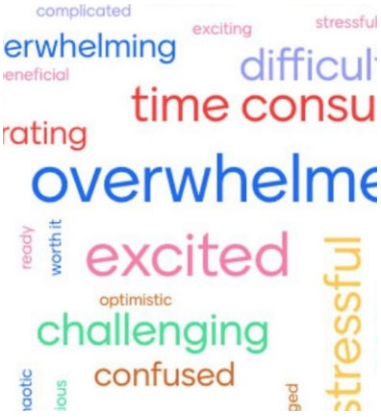
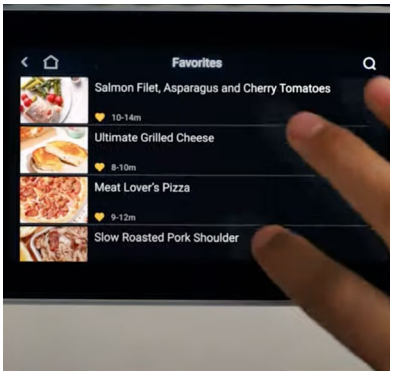
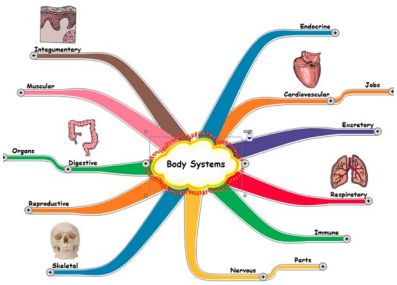
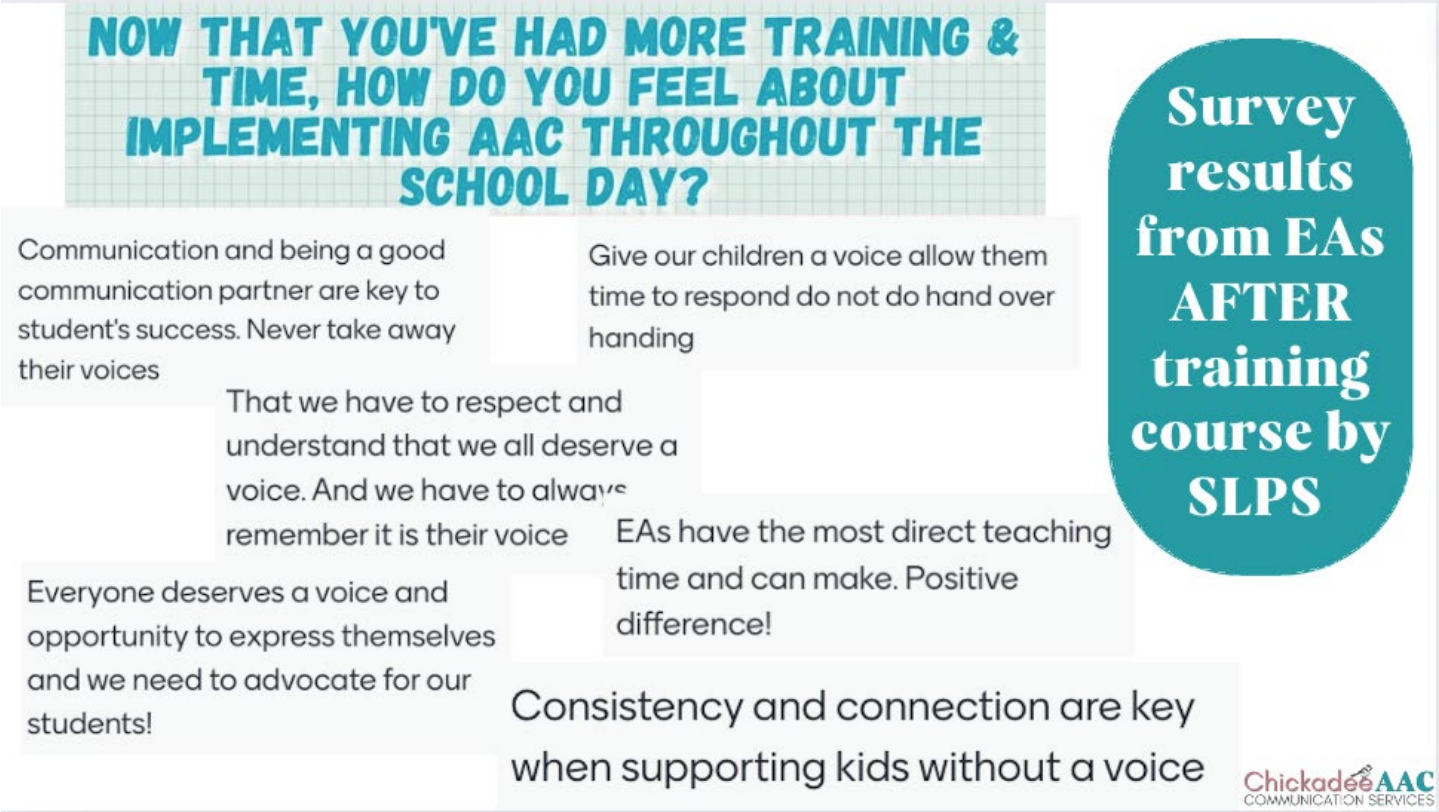






Successful Strategies For Teaching AAC Communication Partners

Summary: Today's world is fast-paced and very much reliant on technology. High tech solutions for communication and accessibility challenges have become more prevalent and affordable and as such are increasingly available to AAC communicators in educational settings On the other hand, financial constraints on school districts often lead to less training for the educational support staff which is so vital to student success. Our AAC training curriculum offers a comprehensive yet affordable solution to such constraints. Through a well-thought out sequence of activities encompassing lecture, hands-on training with both high and low tech devices, access to materials and manipulatives, and interactive group and online learning, we guide our students towards an awareness of best practice in the field of AAC implementation. Overcoming barriers before they can be encountered, in the form of a solid educational background, allows prospective support staff to enter their chosen field without fear of implementing the AAC systems that they will surely see there! In our experience working in a school setting, we have observed that the students who make the most progress with their communication skills are supported by Educational Assistants who are knowledgeable and confident in AAC implementation strategies.



Here are some comments from a survey we conducted at the end of our AAC course to see what the big 'take homes' were from our Educational Assistant students.

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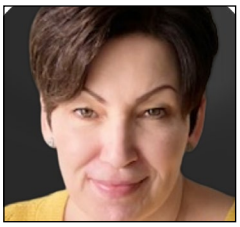
JENNIFER WIEGERT, M.A., CCC-R-SLP, is a registered speech-language pathologist and owner of Chickadee AAC Communication Services - a private practice specializing in supporting individuals with complex communication needs along with their team members, including parents and caregivers, school and home teams. She has practiced in the school setting for 25 years and continues to provide support to students and staff as a member of the Surrey School District AAC team. She also co-wrote and teaches an AAC curriculum for educational assistant students. Working directly with complex communicators is Jennifer's favourite role as a private practitioner.



CORINNA DUFFITT, M.Sc., R-SLP, is originally from Wabush, Newfoundland and Labrador and pursued her Master's Degree at the University of British Columbia in Vancouver, BC. Corinna spent 24 years in the public school system where she specialized in supporting AAC communicators. In 2018, she joined with Jennifer Wiegert to form Chickadee AAC Communication Services, and in 2022 she established AAC in the Grove Communication Services Ltd., and remains committed to supporting AAC users and their families.

Successful strategies for teaching and ongoing training for communication partners are vital components in the effective implementation of Augmentative and Alternative Communication (AAC) systems. It is essential to employ flexible training approaches that cater to diverse learning environments and participant needs. One such strategy involves providing hands-on training opportunities across different contexts, including professional development days, group training sessions, one-on-one consultations, or virtual workshops. This fosters a dynamic learning environment where participants can engage meaningfully with the resources and AAC devices to develop practical skills. Additionally, incorporating ongoing training ensures that communication partners remain updated on best practices and are able to problem solve unique situations, ultimately enhancing communication outcomes for AAC communicators.

This finding reinforces the need for explicit communication partner training as a means to reduce device abandonment.

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INTRODUCTION

In the journey towards effective Augmentative and Alternative Communication (AAC) implementation, a comprehensive plan is essential. This blueprint encompasses various crucial elements, each contributing to the overarching goal of fostering meaningful communication partner skills for individuals supporting students with complex needs. At its core lies the mindset shift, recognizing AAC not merely as a tool but as a comprehensive language system vital for expression and comprehension. Visual supports, whether in the form of pictures, symbols, words, or tangible objects, serve as indispensable aids in facilitating communication. Through modeling, educators and communication partners demonstrate AAC usage, laying the groundwork for language acquisition and fluency. Moreover, strategies like building language complexity and minimizing direct questioning promote natural communication exchanges. This promotes an environment in which the communication partner follows the AAC user's lead. Every communication attempt is valued and meaning is attributed, providing an environment where all forms of expression are respected and acknowledged. Additionally, roles are clearly defined, and advocacy efforts are prioritized to ensure that individuals with complex communication needs receive the support and opportunities they deserve. Ultimately, the overarching aim is to foster a culture of participation and inclusion, where every individual is empowered to engage meaningfully in their communities.

HOW IT BEGAN

In 2018, we were called in as last-minute substitute instructors to teach a course on AAC to a cohort of Educational Assistant students at a local college. We realized that this was an ideal opportunity to provide future support workers a strong foundation of AAC implementation strategies and skills, before they even began working in educational settings. We wrote a proposal outlining a comprehensive curriculum in AAC for the college to include in their Educational Assistant program. Our experience as AAC specialists in various educational settings was essential in identifying the skills support staff need to become effective communication partners for non-speaking students. Each time we have implemented this course over the past 6 years, we have further developed and improved it.

IMPLEMENTATION APPROACHES AND COMMUNICATION PARTNER SKILLS

(See image 2) We clearly define each element of our training as well as the importance of each in the overall AAC journey for the Educational Assistants and AAC communicators. Within each element of our course we include lectures, hands-on activities, role playing, practice using AAC devices (both low and high tech), small and large group activities, case studies, scenarios, and video models of skills and activities. This leads to a final project in which students are required to create a core word implementation plan that includes a book and an activity in which they model their core word. Along with a partner, they demonstrate their partner communication skills while presenting for their peers.

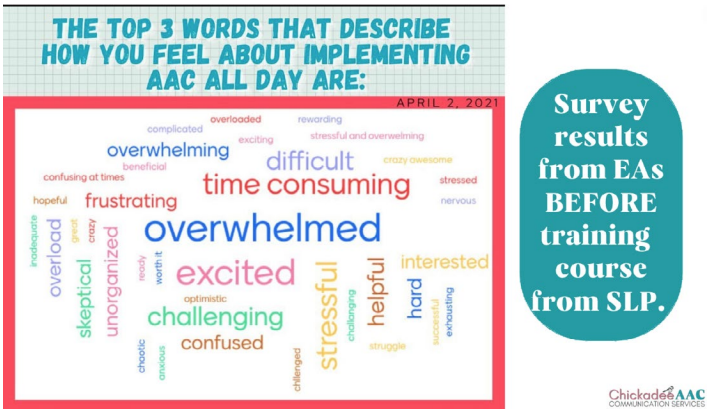

Image 2: Here is one cohort's responses at the beginning of their AAC course in the Educational Assistant College Course about how they felt about implementing AAC.

This curriculum was 24 hours in length delivered across six 4-hour sessions. We have outlined below the various elements of our curriculum along with the activities that the students engage in.

MINDSET

At the heart of our approach lies the AAC (Augmentative and Alternative Communication) mindset, which is built on key concepts that guide our understanding and practice. Our students need to recognize that an AAC vocabulary is a comprehensive language system, similar to other languages such as ASL, spoken English, and so forth. With this view in mind, we guide our students in understanding that learning to communicate with AAC is similar to learning a new language.

To bring these concepts to life, we engage in a variety of interactive and educational activities. We kick off with a fun online Kahoot Quiz game designed to debunk common myths about AAC. Next, we delve into practical application by creating and using low-tech communication boards, which can be invaluable tools for immediate and accessible communication. Our students role play a restaurant scenario wherein they order food using a low-tech communication board that they create, based on directives given by us. (See image 3) The outcome of this activity is often an eye-opening one for students: rather than choosing the type and amount of words needed to be effective communicators, they often choose words that meet the immediate need and for that specific environment. This activity demonstrates that communication is more than just meeting basic needs - it's also about connecting with others!

Creating a communication board leads naturally to a discussion of core and fringe words. We provide a short lesson on core versus personal/fringe words. Prior to playing another

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MINDSET Activity: **Restaurant Low-Tech Board**

You are a non-speaking individual, create your own low-tech communication board to use while going out to dinner with a friend.

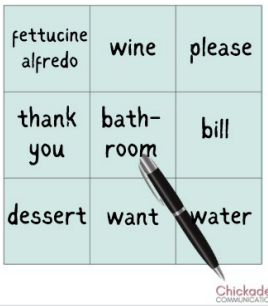

Image 3: The EA students' communication boards typically have vocabulary to make requests for immediate needs and vocabulary to interact socially is often not considered.

Kahoot quiz - *Core or Fringe Word?,* the students often require a quick lesson on parts of speech including nouns, verbs, adjectives, and prepositions.

To further expand their knowledge of core and fringe vocabulary and its importance to each individual AAC communicator, we have our students engage in a case study. Each small group is given a student profile along with a personalisation form. From the profile they decide what personal vocabulary their student will need programmed onto their AAC device. Personalizing vocabulary ensures that the communication tools we develop are tailored to the unique needs and interests of each individual.

Finally, the students compare a variety of commercially available high-tech vocabulary options. They are provided with a list of messages that they need to generate using each of the vocabularies. This demonstrates the advantages and potential challenges they may encounter based on the size and complexity of the vocabulary. As they use these boards themselves, they become aware of the necessity of providing non-speaking individuals with a robust vocabulary. See image 4 and 5.

VISUALS

Visual supports are useful tools for enhancing both expression and comprehension for AAC communicators, and as such are included as an important section of our curriculum. When implemented correctly, a visual support can significantly improve a student's ability to communicate effectively and understand the world around them. Our EA students learn that ample time is needed for processing, acknowledging that every individual has unique needs when it comes to communication and comprehension.

In our visual support section, our EA students engage in a series of thoughtful and practical activities. One key activity involves setting up visual schedules, which help AAC communicators to navigate their day with clarity and confidence. Schedules are instrumental in providing structure and reducing anxiety by making the sequence of daily events clear and predictable. Other visual supports are then introduced in a lecture and video format, after which our students are put into small groups and given student scenarios, where they explore and address various communication challenges and opportunities in real-life contexts. This hands-on approach allows them to understand how broad strategies can be tailored to an individual's needs and immediately applied in the classroom. (See image 6).

Furthermore, we assign an Educational Assistant Toolbox project, wherein our students choose to research and create 5 visual supports to use once they begin their practicums. By collaborating on this project, we ensure that our EA students are well-prepared to meet the diverse needs of our AAC communicators, fostering an environment where everyone can thrive. Through these activities, we reinforce how implementation of basic visual supports impact the student's ability to successfully participate in the activities of the school day.

VISUALS Activity: **Student Scenarios contd.**

Students worked in groups to determine what visuals would be most effective in their scenario. Then they presented their solutions to the class.

Image 6: The student working in partners to determine what visual supports would be beneficial based on the student scenario they have.

MODELLING

We recognize the profound importance of modeling in the context of teaching AAC, understanding that children learn language most effectively by seeing it used in real-life situations. Just as typically developing children acquire language skills by observing and imitating the speech around them, children who use AAC benefit immensely from seeing their communication tools in action. This observational learning is crucial for grasping how to use AAC devices or systems to express themselves and comprehend others.

To integrate this approach into our teaching, we engage in a variety of purposeful activities. We begin with an overview of vocabulary organization. We show the EA students that the vocabulary templates are arranged in a manner that is rule-based, sequential, and categorical to make them easily accessible and intuitive. This organized system not only facilitates quicker word

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STUDENT PROFILE

J. is a 9-year old boy with a diagnosis of ADHD Spinal Muscular Atrophy (SMA) type 1, diagnosed shortly after birth. J. has hypotonia (reduced muscle tone), no limb movement, swallowing and feeding difficulties (he is tube fed), and impaired breathing. He requires 24/7 nursing support. He has a very small range of movement in his fingers, and can blink his eyes independently and on command. He is able to move his vocal chords to make small vocalisations, but cannot move his tongue, lips, or jaw – he is non-speaking. He wears glasses to correct his vision. Hearing and cognition are within normal limits and age-appropriate. J. cannot attend regular school and is home-schooled.

J. enjoys learning and always want to do more! He loves reading, especially Magic Tree House and Geronimo Stilton. He enjoys doing crafts and STEM experiments, Lego, Sesame Street characters (especially Cookie Monster), board games such as Catan and Word on the Street, and music from Disney movies. He cannot eat, but enjoys small tastes of food, especially ice cream. His favorite is chocolate! He has also just been introduced to driving a power wheelchair!

J. uses his vocalizations to "speak" to familiar adults. He can use intonation and "phrases" to comment on things and convey messages. One "grunt" is yes, three are no. If he hums "London Bridge" something has fallen, and so forth! He is bilingual and can understand Mandarin, which his family members speak at home. He can communicate in this way with his family and caregivers all day long! However, to help others outside of this circle understand him better, J uses an Accent 1400 with CoreScanner software as a robust system. He raises his left index finger a tiny bit to activate a switch to complete an auditory scan. He can use increasingly complex grammar and sentence structure, and is considered a transitional communicator – on his way to independence!

J. has many medical needs – he needs suction frequently, heart rate monitoring, frequent position changes (lying down, sitting up, standing frame, turning from side to side) and assistance with all activities of daily living.

Personal Vocabulary

Name: J. Date: Oct 12/23

CATEGORY	VOCABULARY
People & Pets	Family members, nurses, online teaching staff
Places	places in his house, hospital, mom's work, respite care home
Food	ice cream, chocolate
Toys & Games	Lego, sesame street characters, Catan, Word on the Street
Books	Magic Tree House Geronimo Stilton
TV, Movies, Video	Disney music
Sensory	
Equipment, Physical, Medical	Suction, stander, wheelchair, sit up, lie down, turn over

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Image 4: Example of case study and the form that EA students need to fill in to determine the fringe words they need to personalize their student's AAC vocabulary.

MINDSET Activity: **High-Tech Vocabulary Comparison**

Provide a list of messages to say with a variety of vocabulary sizes. We included Mutichat 15 Wordpower 60 Basic, and a vocabulary programmed from scratch.

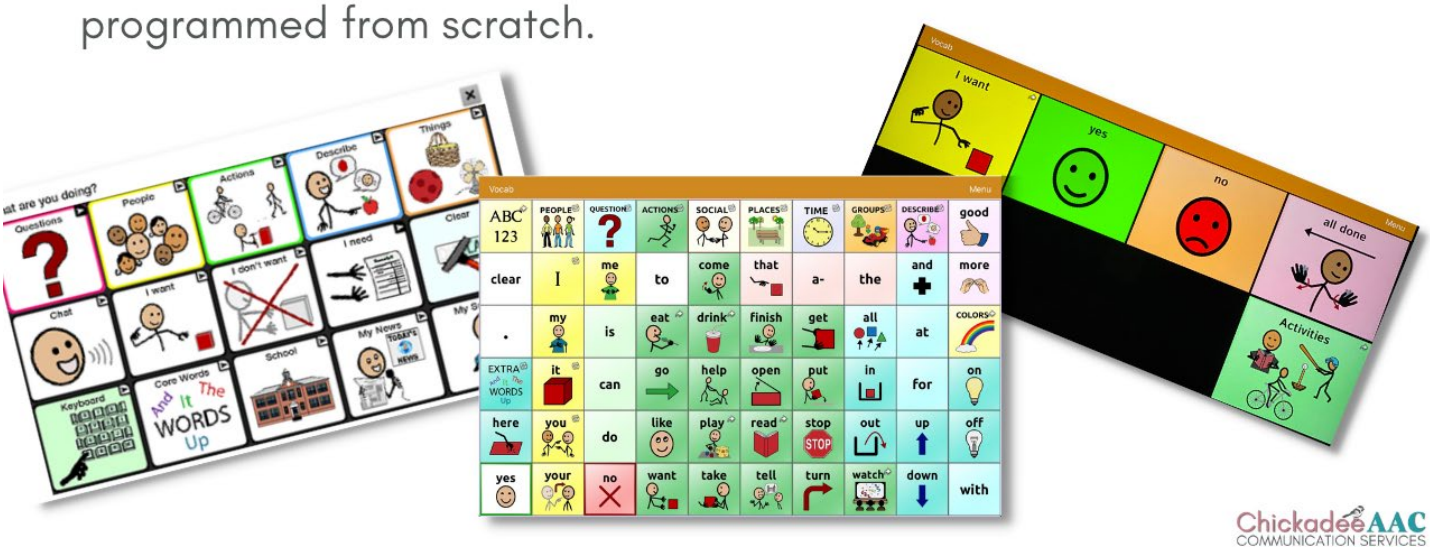

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Image 5: The students experience how the size and content of an AAC vocabulary impacts the navigation and availability of words by communicating the same messages on 3 different AAC vocabularies.

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retrieval but also helps students see that sentence structure, grammatical forms, and language concepts are all related to overall language development.

We have the students participate in two different hands-on activities, both core word-first and activity-first, to practice aided language input using both core boards and high-tech AAC devices. We provide a number of core-word language kits, which include a book that has a predominant core word along with an activity that also provides opportunities to model the same core word. Working in pairs, the students practice reading and modelling the core word using the book and the activity. See Video 1.

Video 1: Here are a variety of core word book/activity kits that the Educational Students use to practice modelling on the devices and the students practicing with them in their small groups - https://vimeo.com/974280084

The activity-first task requires the students to watch a silent video of play with specific toys. While watching the video, they generate a list of words from their AAC vocabulary that they could model during that activity. We use the website www.menti.com which allows the students to enter their word lists online, thus creating a word cloud so they can see the variety of words that they could model. Once they understand how to model words across literacy, games, and play activities, they are given the opportunity to watch the videos a second time and model using their AAC vocabulary while watching. The instructors model as well to demonstrate the variety of language functions that should be included in language instruction for AAC communicators. These activities allow the students to explore the systems, understand motor planning, and how to plan for device implementation. See Video 2.

INCREASING LANGUAGE COMPLEXITY

Increasing language complexity for AAC communicators is crucial, as it empowers them to form more complete and nuanced messages. By progressively enhancing their ability to

Video 2: After watching a video of a play-based activity, the students are required to generate a list of words that they could model on the student's AAC system while engaging in the activity. They enter their word lists into Mentimeter to share with the entire group. - https://vimeo.com/974280761

combine words, we help them move beyond basic expressions to convey richer and more detailed thoughts and feelings. This progression is essential for their overall language development and for fostering more meaningful interactions with others.

To help our EA students understand how to do this, we engage in targeted activities designed to build and expand on existing language skills. One of the key strategies involves modelling one word above an AAC communicator's current level. We provide our EA students with a single core word, and as small groups they generate a list of both 2- and 3-word phrases built upon that single word. Our students are encouraged to explore words from various parts of speech, such verbs, adjectives, prepositions, and so forth - this helps them see how words can be put together to form more complex and specific messages: "happy dog" or "want pink juice". This exercise is structured to be both engaging and educational, providing a collaborative environment where students can learn from each other and from the models we provide.

Once students have generated their lists, they are encouraged to practice them on an AAC device. In this way, they see how they can gradually become more comfortable and proficient in using an AAC system to model communication! See image 7.

MINIMIZING QUESTIONS

We understand the critical importance of making communication through AAC feel natural and engaging, rather than like a test. When communication feels like an assessment, it can create pressure and anxiety, which can hinder the learning process and discourage students from using their AAC devices. To foster a more relaxed and positive communication environment, we strive to integrate language use seamlessly into everyday interactions rather than a testing environment.

Unless they are explicitly taught otherwise, it's a natural

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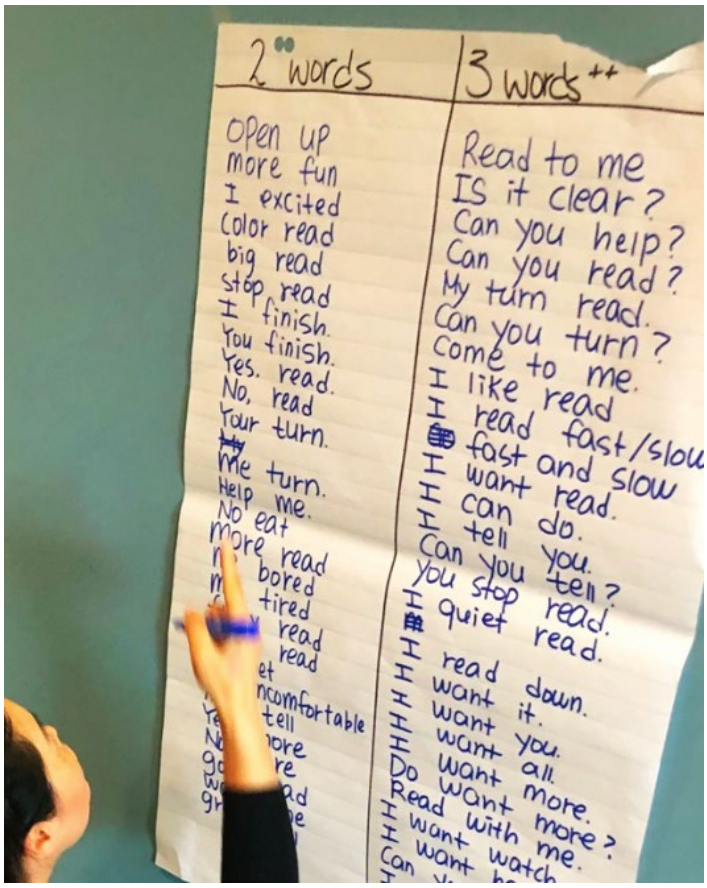

Image 7: The students work in small groups to generate increasingly complex utterances that they then practice modelling on high-tech AAC devices.

inclination for communication partners to slip into questioning AAC communicators to demonstrate their understanding of their device. The EA students have a list of questions that they turn into statements. Instead of constantly asking direct questions, which can feel demanding, we make statements that invite responses in a more open-ended and conversational manner. For instance, rather than asking, "What do you want to play with?" we might say, "I see you have the toy car, that looks like fun." This approach reduces the pressure on the student to provide a specific answer and encourages spontaneous communication. This method promotes a more organic learning experience where students can observe and then practice using language without the fear of being tested. It allows them to explore their AAC devices and express themselves in ways that feel genuine and self-directed. Through this lesson, we aim to encourage our EA students to provide supportive and encouraging communication environments for their AAC communicators.

RESPONDING TO ALL FORMS OF COMMUNICATION

It is important that future Educational Assistants recognize that all forms of communication should be acknowledged and validated, not just the use of AAC devices. Communication is multifaceted, encompassing gestures, facial expressions, body language, and vocalizations, alongside AAC. By valuing these diverse modes of expression, we respect and respond to each AAC communicators' unique way of communicating.

To reinforce this inclusive approach, we have our EA students watch role play video models, which are particularly effective for demonstrating how to recognize and respond to various forms of communication. Through videos we have made ourselves, we showcase scenarios wherein different communicative behaviors are interpreted and appropriately responded to, providing clear and relatable examples for both students and educators. For instance, a video might depict a student pointing to an object, and the model response could be acknowledging the point and expanding on it, such as saying, "You're pointing to the book. Would you like to read it together?"

This activity serves multiple purposes. It teaches prospective EAs that all attempts to communicate, regardless of the form, are valid and meaningful. It also equips them with the skills to notice and respond to these cues effectively, fostering a more responsive and empathetic communication environment. By regularly incorporating video modeling into our practice, we ensure that everyone involved in the learning process can recognize and celebrate the full spectrum of communicative behaviors.

ATTRIBUTING MEANING

We recognize the critical importance of responding to all communication attempts as intentional. This perspective is foundational in supporting individuals who use AAC, as it teaches EA students that they should not judge a student's output as being intentional (clear communicative intent) or unintentional (hitting random buttons). By attributing intention to every communicative act, we help the AAC communicator understand that their words have meaning and their AAC device is a tool that they can use to connect with those individuals in their environment. We also use video modelling for this concept to provide concrete examples that demonstrate how to attribute meaning to every communicative behavior. It equips EA students with the skills to observe and interpret these behaviors accurately and how they should respond to their students' attempts to communicate - intentional or not.

ROLES AND ADVOCACY

We understand the critical importance of clearly defining roles within the AAC support team. When everyone knows their responsibilities and works collaboratively, it enhances the effectiveness of our efforts to support individuals using AAC. A well-defined team structure ensures that each member can contribute their expertise and that there is a coordinated approach to meeting the communication needs of our students. By advocating for these roles, we also highlight the value of each

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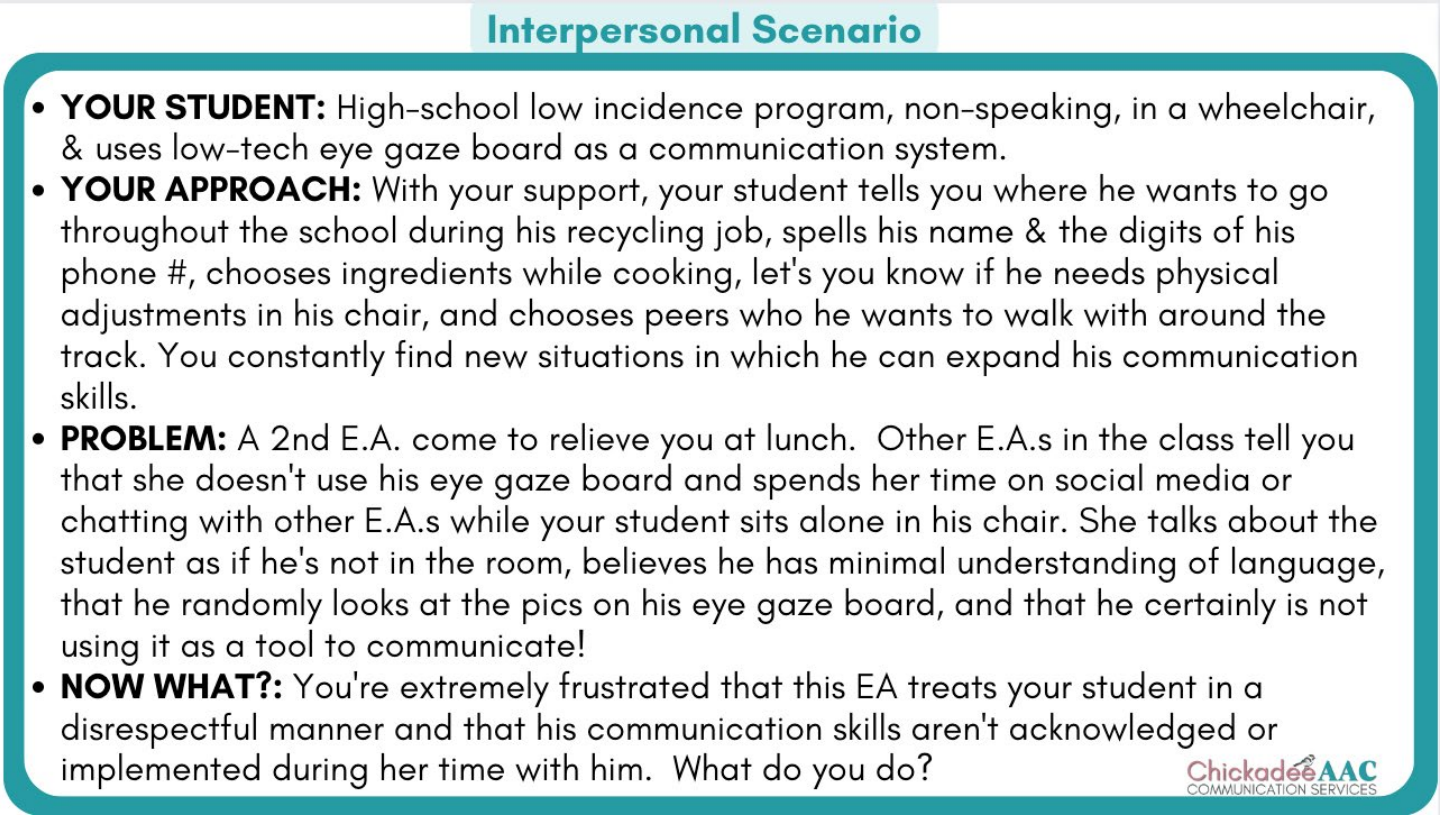

Image 8: We have generated interpersonal scenarios based on experiences we have had or seen in our roles as school-based SLPs. Here is an example of one that students discuss in their small group followed by a discussion with the whole group.

team member's contributions, fostering a sense of ownership and accountability.

To facilitate this, we created interpersonal scenarios that we have seen or encountered ourselves within our roles as school-based AAC SLPs. By exploring various scenarios, we show our EA students potential challenges they may encounter and help develop appropriate strategies for addressing them. For example, we might role-play situations where team members have differing opinions on communication strategies and we discuss how to navigate these conflicts constructively.

Through these discussions, we not only clarify each person's role but also strengthen our future EAs ability to work within their defined roles and develop an understanding that there are some decisions that they should not be making. For example, reinforcing that EAs cannot decide that a student does not need to use an AAC device. Our intent is to decrease the chance that EA's will take actions that negatively impact the students we support. See image 8.

PARTICIPATION AND INCLUSION

We want our EA students to understand the importance of fostering a sense of belonging and contribution for our AAC communicators. When students feel that they are valued members of their community and that they can actively contribute, their confidence and willingness to communicate flourishes. This sense of inclusion is essential for their emotional well-being and social development.

To help our EA students understand this and to give them the means to foster inclusion, we have them engage in activities like planning vocabulary models for inclusion and practicing with task boxes that represent activities and events that could occur during a regular school day.

The first activity for participation and inclusion - planning vocabulary models specifically tailored for inclusive classroom activities - has our EA students rotating through various scenarios taken directly from classrooms at both the elementary and high school levels. EA students are put into small groups and provided with a planning tool to fill in. They then go through several school subjects, such as math, cooking, arts and crafts, or coffee cart. They are tasked with observing the materials, watching videos of how such activities would look in a classroom/school setting, and then selecting appropriate targets to model so that AAC communicators are exposed to the vocabulary models they need in order to build success in those areas. Our EA students are encouraged to brainstorm across a variety of language functions, such as asking questions, making comments, giving directions, and parts of speech, such as verbs, nouns, pronouns, and prepositions. Again, we are building familiarity with how an AAC system is organized while ensuring that our future support workers understand that they need to

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teach a variety of communicative functions.

Another activity involves the use of task boxes - a set of materials put together for a specific activity typically found in mainstream classrooms. These may include books, manipulatives, craft supplies, or a work assignment and are complete with a description of the activity, a single message voice output device, visual supports, as well as instructions for students to follow. In small groups, our students rotate through tasks such as circle time, literacy center, school-wide announcement, ordering at a restaurant, and so forth. Once the task is completed each group shares their example and demonstrates how the communication tool is used in their situation. By exposing EA students to these communication opportunities, they become increasingly aware that they have the ability to build a strong sense of identity and community, essential for their AAC communicators' overall development and well-being. See image 9.

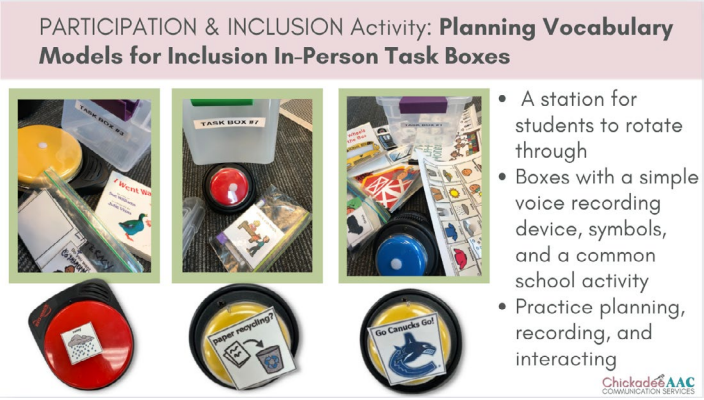

Image 9: Educational Assistant students practice planning and modelling vocabulary using Inclusion Task Boxes. They include work that their students might do in their classroom setting.

BRINGING IT ALL TOGETHER

The EA students' final project is a culmination of all of the skills and knowledge that they have gained during the course.

For the final assignment they create a lesson plan to teach core vocabulary using their AAC communicator's device They are required to teach the same word(s) using a book and an extension activity. Once they determine their book and core word, they need to identify another context to practice the target core word chosen. The extension activity could be: a game, a craft, writing activity, matching activity, song, or gross motor activity. The activity should target the same core word(s) that they focus on in the book. The activity should provide repeated opportunities for them to model the core word.

On the final day of class, each group presents their book and extension activity to their peers. They take turns role playing as the EA and then as the student. The first EA student reads the book while modelling the core word on the AAC device for the second EA (their student). Then the second EA student engages in the activity modelling the core word, while their partner is the student. During the role play they are required to demonstrate some of the communication partner strategies that they have learned during the course. It is a great opportunity for the EA students to observe one another, to see creative ideas for implementing AAC, and to gain confidence in their ability to generate their own contexts for facilitating their future student's communication skills. ■

Video 3: The best day of our AAC course is final presentation day. It's exciting to see the creative activities that each group presents to their peers! Although the presentation day is stressful for the Educational Assistant students, they benefit by gaining confidence and a toolbox of ideas that they can draw from. - https://vimeo.com/974282721

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OCTOBER 22-25, 2024

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Through shared best practices and research, networking, training, hands-on opportunities and an expansive exhibit hall, conference participants will find information, strategies and products that prove beneficial and, oftentimes, unsurpassed for use in their work and in their lives.

WHO SHOULD ATTEND?

Anyone interested in finding practical and readily available AT solutions for ALL disabilities, mild to significant, infant through adult.

- ✔ SPEECH LANGUAGE PATHOLOGISTS
- ✔ OCCUPATIONAL THERAPISTS
- ✔ AT CONSULTANTS
- ✔ TECHNOLOGY SPECIALISTS
- ✔ AUTISM SPECIALISTS
- ✔ SPECIAL EDUCATORS
- ✔ UNIVERSITY INSTRUCTORS
- ✔ ADMINISTRATORS
- ✔ PHYSICAL THERAPISTS
- ✔ USERS OF AT
- ✔ VISION SPECIALISTS
- ✔ PARENTS

This year's conference will build on a tradition of providing a comprehensive examination of the most current uses of technology by persons with disabilities and the professionals who work with them.

Topics will cover a broad spectrum of technology as it is being applied to all disabilities and age groups in education, rehabilitation, vocation, and independent living.

Come and learn, first-hand, about the best AT products, practices and strategies used by teachers, therapists, clinicians, parents and end users alike.

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he Gap 2024
RENCE
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Pre Conference Workshops: Oct. 21-22

Pre Conference Workshops
Monday and Tuesday, October 21-22 2024

IN-DEPTH LEARNING Pre conference workshops focus on assistive technology implementation and best practices. Each workshop is conducted by a nationally recognized leader in the field, providing in-depth professional skills necessary to successfully implement assistive technology in the lives of persons with disabilities. Workshops range from introductory to advanced and cover many different topics.

VIEW WORKSHOPS

AT Maker Event
Call for Participation

For those interested in becoming more involved in the AT maker event, this is an opportunity to showcase exciting new creations, tools, and materials for making A.T. and to learn from the AT maker community.

LEARN MORE

What is brava?

"The Brava allows people of all ages and abilities to participate in meal preparation more independently and safely. There are many features of the Brava that help people feel more confident (and safe), which allows them to cook more often!"

Rachel McCall
Occupational Therapist
Proven Assistive Technology

Brava enables people of all abilities cook safely and independently at home.

Food plays a central role in the human experience, sustaining us physically while enriching our emotional well-being and strengthening social connections. Home-cooked meals, crafted with fresh ingredients and personal care, not only provide essential nutrition but also foster a sense of pride and accomplishment. However, many individuals face significant barriers to cooking at home, such as time constraints and lack of confidence in culinary skills. These obstacles often steer people towards less nutritious and more expensive alternatives like takeout. For individuals with intellectual and physical disabilities, these challenges can escalate to the point where cooking at home isn't just difficult—it can be inherently risky and unsafe.

The Brava Smart Oven, launched in 2018, aims to revolutionize home cooking by making it faster, easier, and more enjoyable. With features like guided recipes, automated cooking, no preheating, and automatic shutoff, Brava dramatically reduces

5 Benefits of Brava.
https://player.vimeo.com/video/589497421

ZAC SELMON, A creative writing major turned product manager, Zac has spent the last 20 years working at the intersection of digital content communities and emerging technology. As the Head of Product for Brava, he brings that experience to the kitchen, with a smart oven that makes cooking at home faster, easier, and more delicious than ever. He enjoys spicy foods, tricking his kids into believing that he has magical powers, and using AI to perform uncomfortable tasks like writing about himself. Zac Selmon - LinkedIn Profile

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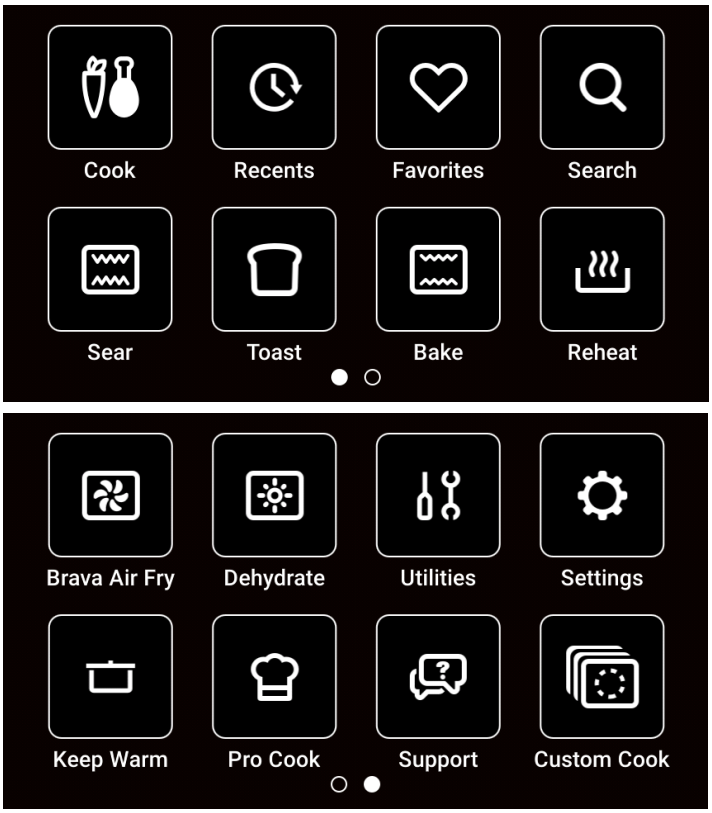
the barriers to home cooking. These features are particularly beneficial for users of assistive technology (AT), for whom these challenges are often magnified.

HOW DOES IT WORK?

Whereas traditional ovens use heating elements to gradually store energy in the chamber walls and air, Brava cooks with light. Using six special lamps—three on the top and three on the bottom—Brava focuses all of its energy directly into the food, like a spotlight, rather than into the chamber walls. This innovative approach provides several unique cooking benefits:

1. **Increased Cooking Power:** While most ovens top out at 500 degrees, Brava can reach an effective cooking power equivalent to a 900-degree pizza oven. This allows it to perform tasks typically reserved for grills or stovetops. The extra power also allows Brava to cook most meals 2-4x faster than a traditional oven.
1. **Instant Full Power:** The lamps reach full cooking power in just under a second, eliminating the need for preheating. Additionally, since the entire chamber doesn't heat up, the food stops cooking immediately when the lamps shut off.
1. **Multi-Zone Cooking:** Brava can cook independently in three different zones, allowing users to prepare steak, potatoes, and broccoli simultaneously, with each item cooking to perfection.
1. **Safety:** Brava's exterior remains cool to the touch, preventing burns from accidental contact. The automatic shutoff feature stops cooking when the recipe is complete, mitigating risks of overcooking or fire hazards. Brava's system fully automates the cooking process without the need for flipping or stirring, reducing potential burn risks from interacting with hot pans and open flames. The lamps will also automatically shut off whenever the door is open.



Brava's homescreen showing a list of options

Brava's unique versatility means that it is powerful enough to sear a steak and delicate enough to poach eggs. Frozen foods and reheated leftovers are cooked almost as fast as in a microwave, but with the crisping and quality of an oven. The automated recipes ensure consistently delicious results, with minimal user interaction.

Brava achieves these capabilities through sophisticated software, with over 8,500 chef-crafted recipes built into the device. The touch screen allows users to browse the recipe library and select their preferences. Users are then presented with guided instructions on how to prepare their ingredients and assemble them on the tray. Once the tray is placed in the cold oven, the user simply presses a button, and the oven does the rest. An internal camera displays the food on the screen while cooking and streams it to a mobile app. The app can pause cooking remotely and send notifications when cooking starts or completes.

In addition to the built-in recipes, Brava also offers traditional manual modes like toast, bake, air fry, sear(broil), slow cook, and dehydrate, so users can still enjoy their favorite family recipes. The custom cook feature lets users save their own recipes for future use with the push of a button, and they can share their creations with friends or the community.

APPLICATIONS FOR ASSISTIVE TECHNOLOGY

While the convenience of quick, easy, and delicious meals benefits everyone, it is particularly impactful for many AT users. Safety is a primary concern. Traditional ovens and stovetops pose

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PROVEN BEHAVIOR SOLUTIONS

Brava placed with 80+ AT users in Massachusetts

- Assessment and recommendation from OT/PT
- All 6 AT providers have Bravas in lending libraries

Use Cases

- Autism
- Executive function difficulties
- Range of functional motor skills
- Blind, deaf, visual/hearing impaired
- Physical and/or cognitive impairments
- Literacy skills deficits
- Individuals in modified environments (ADU, in-law apartments, etc.)
- Easy to use for caregivers

Quick Learning Curve

- Supported by training videos and tutorials for filling the tray, using the TempSensor, cleaning, etc.
- Consistency of cooking results keeps individuals coming back to cook more
- Favorites section makes recipe discovery simple and easy
- Photos, videos and illustrations helpful for visual learners

Safety Features Improve Confidence

- Automatic shutoff
- Cool to the touch
- Remote monitoring
- Pre-programmed recipes
- Good for individuals who are afraid of cooking with gas stove

Great for Picky Eaters

- Traditional cooking methods are difficult and require skill
- Brava makes it easy to participate in meal prep without the dangers of traditional cooking
- When individuals participate in meal prep they are more likely to try new foods

significant fire and burn risks, especially for individuals who may forget to turn them off. Brava's design keeps the exterior cool to the touch, and the oven shuts off automatically when cooking is complete. Caregivers can remotely monitor and control the oven via the app, allowing them to give feedback and support the cooking process while also providing additional peace of mind.

For individuals with executive functioning issues or those who struggle with safety awareness, Brava's guided recipe instructions and automated processes reduce anxiety and provide confidence. Elderly individuals aging in place and people with physical limitations who find it difficult or dangerous to stand over a stove or reach into a hot oven will find Brava a safe alternative, without sacrificing quality. Busy caregivers can also benefit from the reduced need for constant supervision, freeing up their hands and minds to focus on care rather than cooking.

CASE STUDY: MASSACHUSETTS

Proven Behavior Solutions is an ABA and OT Provider in Massachusetts with a particular focus on improving the lives of individuals with Autism Spectrum Disorder. As a qualified AT provider for the Massachusetts DDS Assistive Technology program, they perform Assistive Technology assessments, training, and ongoing support for individuals with intellectual, physical, and developmental disabilities, to leverage new technologies to live more independently. In late 2023, Proven Behavior Solutions began recommending Brava to clients looking to have more control over their diet, and have already placed Bravas with nearly 100 clients with a variety of use cases:

The key benefits they've seen for their clients start with the safety features. Many of their clients are afraid of cooking with ovens or stove tops, and the cool-to-touch exterior, automatic shut off, automated no-flip cooking, and remote monitoring features, help reduce anxiety and instill the confidence to try cooking for themselves. The quick learning curve, with guided recipes and training videos, and the recipe discovery and favorites features, make the process more fun than frustrating so they stick with it. And the consistent, delicious results keep them coming back for more.

One individual we placed a Brava with is a self-described 'picky eater' who had eaten nothing but frozen french fries and chicken nuggets for years. Due to safety concerns, he had been

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microwaving them, resulting in soggy fries and mushy nuggets. With Brava, he can now use an automated recipe program to make his fries and nuggets simultaneously, and they turn out better and crispier than ever. The best part is that his newfound excitement and confidence in the kitchen, along with some encouragement from his occupational therapist, have inspired him to expand his menu. He recently tried new foods like pancakes for the first time in years.

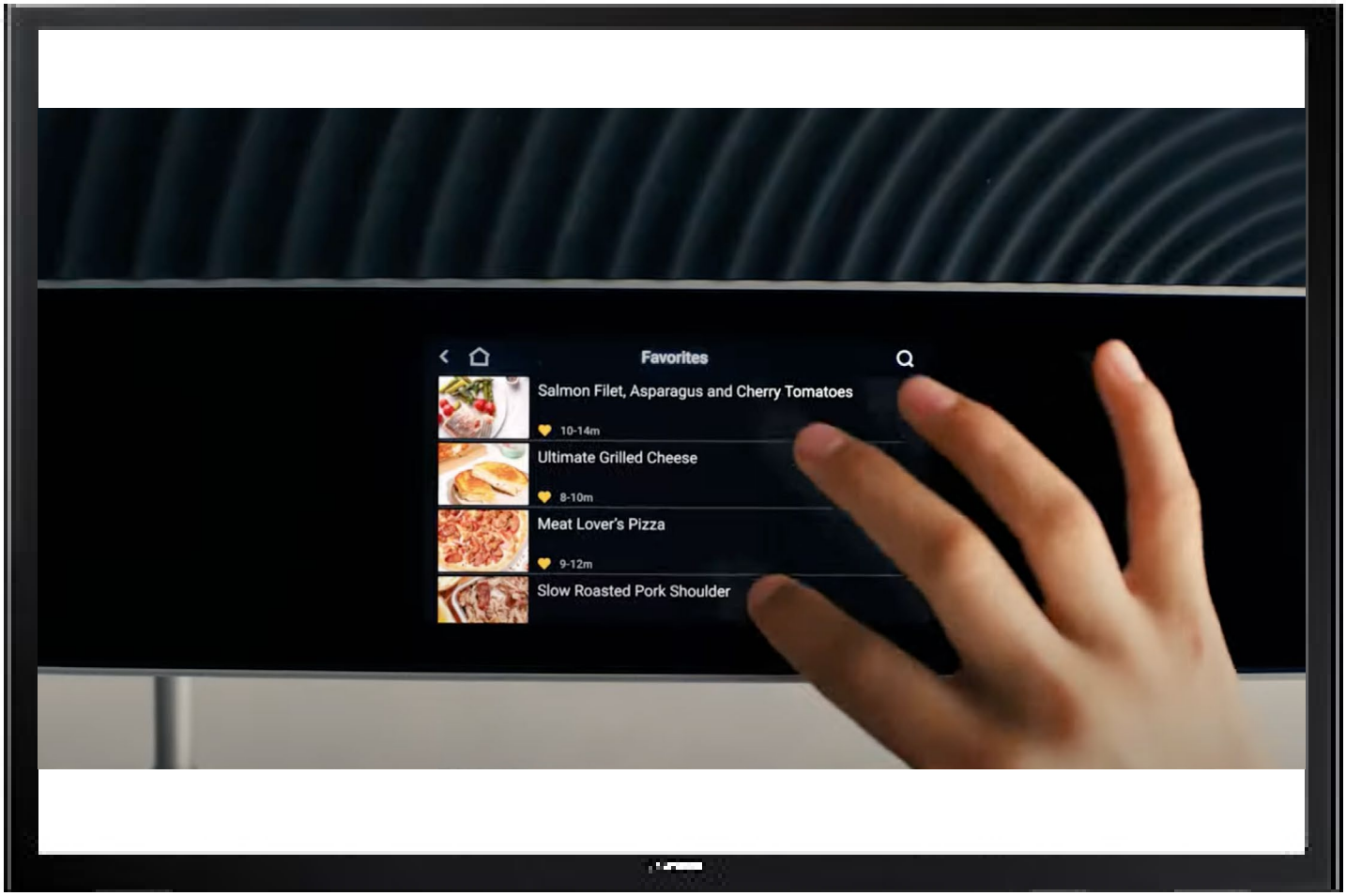
Brava continues to work closely with Proven Behavior Solutions, providing ongoing training and support for their occupational therapists (OTs) and assistive technology professionals (ATPs). This collaborative relationship fosters creative solutions tailored to each individual's unique needs. The valuable feedback received from this partnership drives the development of new features and improvements, enabling Brava to better support a broader range of users.

WHAT'S NEXT

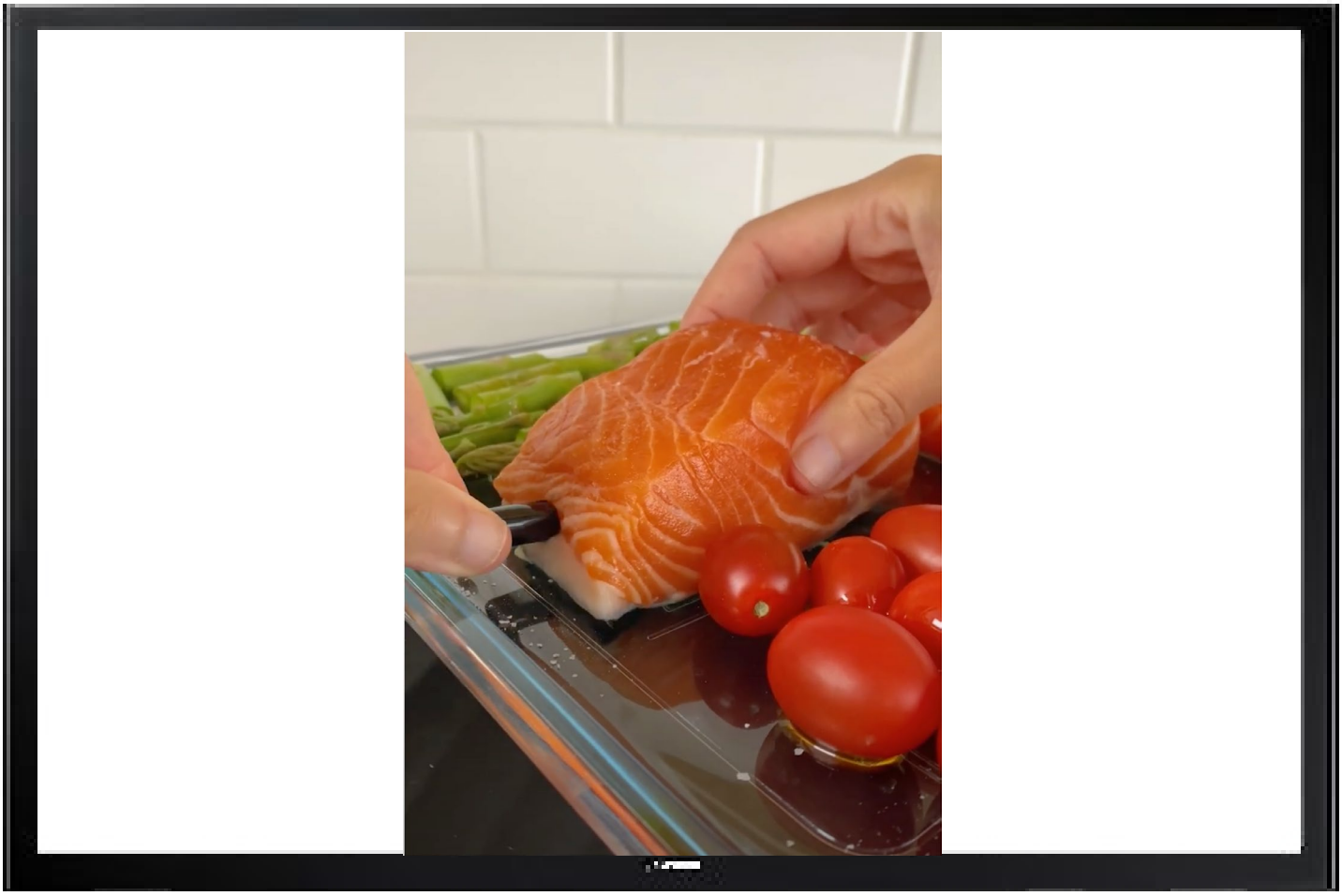
Since delving into the world of assistive technology (AT) and engaging with the community, it quickly became evident that the Brava's touch screen was the least accessible aspect of the device. In response, we have spent the past year rebuilding our backend to integrate full control of the oven into our mobile app, complete with VoiceOver and TalkBack compatibility. This enhancement, launching later this summer, will provide accessibility for individuals with blindness or low vision and those who have difficulty with the ergonomics of the touch screen.

We are working with AT agencies in California and Texas on ways to provide remote support for clients spread over large distances, reducing the need for in-home visits. We're in talks with assisted living facilities to integrate with their dining programs to alleviate staffing shortages and provide mealtime flexibility. And we are experimenting with AI to offer conversational oven control, generative recipes, and instructional guides.

Recognizing that every individual faces their own unique challenges, we aim to develop a series of modular toolsets that can be customized and used together to accommodate as many needs as possible. By continuously engaging with users and working closely with OTs, PTs, and ATPs, we strive to add new features and enhance the existing experience. Our goal is to help as many people as possible enjoy the benefits of cooking, because everyone deserves a delicious home-cooked meal.



Cook with a Symphony of Light. https://www.youtube.com/watch?v=Rr4SHc3A_Fg



How to use Brava's new Wireless TempSensor https://www.youtube.com/watch?v=c-dwwU6o-bs

For more information, you can visit our website at www.brava.com. If you have any questions, suggestions, or ideas, please feel free to reach out to me at zac@brava.com.

PRODUCT INFORMATION

Brava stands 11.3 inches tall, 16.4 inches wide and 17.3 inches deep. It has a brushed aluminum exterior and stainless steel interior chamber. Brava runs off a standard 120 Volt power outlet on a 20 AMP circuit breaker. We recommend a dedicated circuit, but just don't run another appliance on the same circuit while the Brava is in use. Brava can be placed wherever is convenient and does not need any special ventilation. The lamps in the Brava are rated to 10s of thousands of hours of use, but are user replaceable in the event that they are accidentally broken. The Brava accessory trays are made from a ceramic coated aluminum and are nonstick and dishwasher safe.

Brava's retail price starts at $1,295, and comes with a glass tray, metal tray, and the wired TempSensor. The egg tray, square pan, loaf pan, muffin tin, chef's pan, and wireless temp sensor are available in bundled options for an additional price. Accessories can also be purchased individually. ■

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UPCOMING LIVE WEBINARS

PROFFESIONAL DEVELOPMENT

CEUs are provided by the AAC Institute and are available for live webinars at no additional fee (does not include sponsored webinars unless noted). A 60-minute webinar = 0.1 CEUs. A 90-minute webinar = 0.2 CEUs

Marvelous, Magical Minspeak

By Debbie Witkowski
Tuesday. August 20, 2024
11:00 am – 12:00 pm (Central Daylight Time)

Most robust AAC language systems represent language through single-meaning pictures and alphabet-based strategies, such as spelling, word prediction, and printed words. Minspeak systems are unique in that they offer a third method of representing language known as semantic compaction.

This webinar will explore the components of Minspeak systems that lead to successful communication including the semantic organization into word families, the predictable architecture of vocabulary storage, and the design that leads to motor automaticity. Join us as we explore the marvels and magic of Minspeak systems and learn how the design of Minspeak programs and accompanying tools facilitate language learning and use.

REGISTER NOW!

RECENTLY ADDED WEBINARS

Designing Accessible Content to Include All Students

By Kristin Leslie

Do you have students who are facing barriers to accessing core curriculum due to language, learning style or disability? Foundational to Multi-tiered Systems of Support (MTSS) is the belief that ALL students need access to core instruction. Assuring that students have "accessible versions of educational materials may mean the difference between learning barriers and learning opportunities." (National Center on Accessible Educational Material).

As educators, we are tasked with providing learning materials that are accessible to diverse student groups. What resources are available to guide educators through this process? The Special Education Technology Center (SETC) in Washington State has created a free online learning course in an Open Educational Resources (OER) format to help educators navigate the process of vetting and creating educational material that is fully accessible to students, staff, and parents. Join us to discuss how to break down access barriers by integrating this professional development content in your classroom and district practices.

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Supporting Independence for Students with Complex Bodies in Access to AT/AAC in Activity within the Classroom by Augmenting Seating and Mobility

INTRODUCTION/PROLOGUE:

As an Occupational Therapist who has been privileged to serve students with complex bodies for over 40 years, and who has been involved with assistive technology for over 35 years, I hope to share with the readers, a more complete look at how students use AT, especially AAC devices. Since the early years, I am, as an OT, looking for how I can assess and treat, teach and implement strategies and equipment which supports increased functional, individual independence in every day living. As a pediatric therapist, I also remain vigilant with the continued study of human development, especially child development. As a specialist in my field of pediatric occupational therapy I have also spent many hours reading, reflecting, observing, and learning more and more about the neurophysiology of how children and humans learn, how our brains and bodies work and interact together and then store knowledge and use experience to create neuronal pathways which support skill development.

In the field of AT, as it began and grew, the computer is the technology where it all began, but in AAC, (augmentative and alternative communication) there were many methods utilized before technology was available. However, these initial early technologies were meant to support accessibility to tasks for adult individuals with disability. The adults who were most able to use AT were adults who had acquired injuries or degenerative diseases. Adults' bodies are fully developed, and adults have a range of life experiences, and most adults are readers, mobile, and independent in all of life's daily activities who now need a different way to manage. Even AAC devices began for this population.

As a nation, as the right to education embraced all students, technology also was looked to, and embraced to assist children, in educational settings. But children are not a single group, they are developing into adults, and very young children are hugely different than teens, and the differences are great, as is life experience, and language and motor development.

We, as teachers and therapists, must recognize that introducing an AAC device or access to a computer, or a powered chair cannot be introduced with the same strategies, and paradigms of use that enable adults. Children must gain a lot of life experience, and those experiences have a direct effect on their ability to manage all parts of their lives, including technology. It must be remembered that when looking at an AAC device, whether a dedicated speech generating device, or a specific app on an Ipad or tablet, communication, as the goal of this use, is not simply choosing the right device nor the right access method. Children are growing, and developing, and need lots of experiences to support their use of technology. They need to experience true activity, in play, and in learning

KAREN M. KANGAS, OTR/L, An occupational therapist actively practicing for 50 years, an AT specialist over 35 years, an adjunct faculty member, Misericordia University for Seating in Pediatric Practice, in private practice specializing in individuals with complex bodies throughout the state of PA, for seating, mobility and access to AT (including AAC devices, computer access, powered mobility and environmental control), and a clinical educator, teaching workshops throughout the USA. Has taught in New Zealand, Sweden, the UK, Scotland, Ireland, Israel and Canada. She is currently involved in a multi-year pilot state-wide project supporting students with complex bodies supporting the use of AT for inclusion.

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first, with their bodies and brains, and they need to literally "see" the use of AT, and AAC around them, by others within the environment. A communication device is not giving a child a "voice." It is giving them a word processor. Spoken language does not "live" in the same spots of the brain as written language does. But written language and reading do reside next to each other. Neurophysiologists are still studying the mystery of the relationship of spoken language to orthography. It is still unclear as to how they are related and how they interact.

Using an AAC device is "writing," not "speaking." To use an AAC device, the individual must first have a thought, hold that thought in their mind, then choose arbitrary symbols located in a specific but arbitrary arrangement, then sequence them, and then produce them. This paradigm is how we write, not how we talk. We don't write before we talk, in fact, children come to school and use their experience with spoken language to function, and then learn to write and read.

Using an AAC device, no matter how proficient anyone would be, will never be as automatic, nor as quick, nor as easy as speaking. Try using your phone to text all day long to everyone and every time you need to talk. You can still use both your hands, and you already are mature with language, a reader, and experienced with your technology, and yet, your conversations will not be as expedient, nor as direct.

In this article, I'm hoping to bring the environment and the equipment that is not the technology, more into focus on its impact on the use and skill development of technology. With children, a more holistic approach must be implemented, and that means a real knowledge of growth and development, childhood postural mechanisms, language and motor development's relationships, and environmental barriers and accessibility must be considered. This is a very short space, to share all that my students and their families and my studies have taught me, but I hope that as you read this and think about it, you will go back to your classrooms and students with "new eyes" and an open heart and mind, to join the journey of supporting independent communication and mobility.

ACCESS TO AT/AAC AND ACTIVITY

The Definition/s of "ACCESS"

1. How an individual is able to manage an activity of interest with intention, independently.
2. How to manage a particular machine at a particular time for a specific activity which will produce an output (vocal or printed)
3. ASHA's (American Speech and Hearing Association) definition: "the way an individual makes selections on a communication board or speech generating device"
4. Webster's definition: the act of coming toward or near to; approach; a way of means of approaching, getting, using, etc.

ASHA's definition of AAC

"Augmentative and alternative communication (AAC) describes multiple ways to communicate that can supplement or compensate (either temporarily or permanently) for the impairment and disability patterns of individuals with severe communication disorders.

AAC can involve unaided communication, such as facial expression, body posture, gesture, or manual signs, and aided modes (e.g. communication books, tablets). The appropriate mode or modes of communication are determined by the needs of an individual with disabilities and their communication partners."

Considering access to AT, or AAC within the classroom with a student with a complex body is expected to be assessed first, and then with a device. But this paradigm of assessment for AAC/AT was developed for adults, not children. Children have not yet developed full receptive vocabularies, they are inexperienced with many activities in daily life, and need to be actively engaged in play and work throughout the day to have ideas they want to share in communication.

Access to activity, with children, is not "assessed" first, instead it is experienced, and is not seen as competent or predictable until they've been engaged in that activity hundreds of times. Children are curious, and explore, but their motor development is not a ladder, but has ebbs and flows of interest and engagement, as their bodies and brains develop. At different stages of development, interests in activity are quite variable. A 2 year old wants to do exactly what they've seen adults doing, use a real knife, manage a real pot, use a real hose. They do not want "pretend" items. They want to work at what they see happening about them, but they want to do all of it in one day, washing dishes, doing laundry, preparing a meal. They don't want to spend the actual time it takes to complete these activities, but they want to do each one a bit. But a 4 year old really expresses imagination, loves little play or pretend objects, like small cars and trucks, small dishes, and small play houses, small legos to build and they like the things they build to stay in place and they can spend a great deal of time with one of these activities.

But one thing all children who are growing and developing (without the interruption caused by a disability) do, is practice real life. They hear language, but they also practice language, not simply speaking, but they practice many non-picture producing words. They put their bodies in, over, under, next to, near, far. They look for this, for that, they reach for those, and choose these.

When a child has not had the experience of using their body itself within the environment, how do they know the meaning of words. Especially the multiple meanings of many words like : I am climbing "over" the block on the floor, this meal is "over," my shoe is "over" there.

In short, when considering AAC, with children activity must be rich, full of real language and experience, and then encourage

ideas and thoughts that a child wants to share with another.

The activity can NOT initially be the AAC device. The adult needs to supplement the conversation about the activity and what is happening with the use of an AAC device. But the AAC device is used by the adult, and the activity is the important part for the child. Specific words can be chosen to be focused on within any activity, and then, after the activity, the adult can "write" or "record" what happened. This can happen with video, with photos, with drawings or just with words. A journal of activity can be developed, a journal of experiences, and include the use and development of activity with the adult using the AAC device.

If a child was deaf, and needed to learn sign language we would not just give them a device which talked. We would learn sign, too, and use it with them. A child becomes interested in activity when they visualize themselves as competent in it. A child wants to learn to swim when they see others swimming. They want to ride a bike when they see others riding. They have a mental picture of themselves doing these activities. Then, their interests support them in the learning, and they can be very surprised that it takes time to become "good at it."

Children become interested in activity within their environments that they deem important. It is very easy to see any very young child, reaching for a mobile phone, or car keys. AAC devices need to be within our environments.

Vocabulary development needs to be key to all students who are non-speaking. Everyone within their environment needs to be critically involved in teaching these words in context. Core words can be chosen by the teacher, or SLP, and all therapists and adults within the environment will use them purposefully for a specific time within their time spent with the student.

PT's and OT's specifically need to include in their motor activities, experiences with the non-picture producing words. Like, "I am going to be helping your stomach go OVER the ball." PUT your feet DOWN, when getting off the ball. I will HELP you"

In summary: ACTIVITY first, USE of AAC device within the activity by the supporting staff, RECORD activity, so it can be reviewed and shared with the student, and ACCESS will come later.

THE PHYSICAL CONFIGURATION OF THE CLASSROOM:

The next challenge is looking at the ClassRoom itself. The students' mobility within the classroom, and the situational seating and activity location all need to be observed.

The physical configuration of the classroom.

Let's first look at self-contained classrooms. Frequently students with complex bodies are identified and taught in smaller groups with other students with complex bodies. More and more often, these classrooms are located within the schools their same age peers attend, and many students do participate in inclusionary settings for part of each day. However, the primary part of the day is within a single classroom, which contains a great deal of equipment, which is not used for all activity.

All teachers and therapists in these classrooms, wish for more space and more storage, as these classrooms were never expected to manage all the wheelchairs, standers, walkers, smartboards, computers, changing tables, small kitchens, and many adults.

The number of adult bodies in this classroom at any given time and the amount of equipment used, is unexpected in standard traditionally sized classrooms. Also, none of us, therapists or teachers, took any courses in our preparatory years in college on how to manage these numbers of bodies and space.

Consequently, in many of these classrooms, specific traffic patterns are unclear and changing. Let's imagine a kindergarten student entering their school. They know where their classroom is, and knows how to get there, and they go there. Once they enter the room, they know what they are going to do first, and where they will then go next. This knowledge of the room, and where activities are located, and experience of getting there on their own, helps prepare the brain for focused activity.

Compare this to a kindergarten aged student with a complex body, who is helped out of the bus, taken down to a classroom, and is "placed" by an adult somewhere within the room. This student does not control where they are going, their experience is just to wait until there might be some cues of what comes next.

All human beings utilize early on a specific brain function called "cognitive mapping." This begins at home as the very young child becomes independently mobile. This young child begins to move through their environment with purpose and intention, intention to discover that world, by getting close to objects, near people, touching items, and exploring. The child learns that as they move out of one room and to another, that certain objects reside in those places, and these things specifically relate to their personal, everyday life. Towels are in the bathroom, and so is the tub, and the sink. Toys may be in the bedroom and in the living room, but the refrigerator is in the kitchen. This movement through these areas and the knowledge of what resides there is called "cognitive mapping.". It's not simply a "map" like a geographical map, although those attributes are there, but there are relational attributes the brain begins to remember, and assimilate. Certain objects live in a space, and have a relationship to each other in that space. The knowledge of these items and the recognition of their place is one of the first of cognitive structures forming. This cognitive structure not only "records" this knowledge but is housed in "memory" as that develops too.

In AT, cause and effect are spoken about as an initial "cognitive" construct, when, actually this is not a real cognitive construct. Causality itself moves through various stages in a child's cognitive development, it is not a simple turn on/off paradigm. Babies already know that their crying is communicative, and that communication demand brings someone to them. Babies know

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that being put at the breast, is time to eat, being placed in a high chair, is time to eat, being placed in a car seat, is time to go.

In short, cause/effect in AT, is not what is needed as a cognitive stratagem, but rather experience of moving throughout space independently, and seeing, feeling, and remembering what is where, and what belongs with what, or using and developing cognitive mapping, is vital.

Cognitive mapping like causality, develops into more complex constructs over time, and then, especially cognitive mapping lays a foundation for understanding navigation. Navigation must be understood in order to use an AAC system. Navigation must be understood for reading. Navigation of an AAC device is needed to use it. Navigation is not just memorizing where a symbol is located, navigation is understanding pathways, and relationships, which is also a foundational cognitive construct of language development.

Motor development plays right into this beginning language development. In fact, to initiate a conversation, at any time, a physical approach is needed. The physical approach is how one person starts a conversation. The approach initiates the relationship for the language to be used to communicate to another. To the communication partner, this approach presumes a communication initiation. (In my frequent consultations with school teams, I am asked "How do we get our student to initiate a conversation? The ability to physically approach another, is the communicative intent for initiation of communication.)

When children are unable to move independently, they are provided supported walkers, and/or crawlers, to assist them. But when in classrooms, this equipment is not used (except in early intervention) within the classroom itself, but is relegated to specific therapy time, and exercise like walking down the hallway. Walking down the hallway certainly can be beneficial, but the considered use of a supported walker within the classroom itself, can support a student's demonstration of intent, of interest, and of independent approach.

These supported walkers, however, must be equipment that can support a child in either sitting and/or standing and/or moving, and many supported walkers in schools are simply small versions of adult walkers, which do not allow for getting close to tables or other objects or students. They are not hands free, so hands can explore, and are not readily able to turn, or move over varied surfaces, like carpeting, and linoleum. The KidWalk was developed for these reasons. (See photos). Not just a walker, but a seat, a stander, and able to support the student with a complex body in varied positions as their same age peers move and alter positions. The body must be active to engage the brain in focused activity. Stillness does NOT bring attention, attention is self-driven, and self- controlled and needs to be supported by independent postural movement and management.

Readiness for activity to engage in activity, starts with a child moving themselves to the activity. Then, if that activity, requires getting into a chair and working at a table or desk, the movement into the chair and getting to the desk, prepares the body for the control of managing the body and the mind ON the activity. Getting ready for activity and focus starts with the body's transition from one place to the place of activity.

Students with complex bodies are brought to a table or desk, and then wait while an activity is placed before them. They are then expected to "engage" and "demonstrate attention" and "endurance" to the activity and task, yet their brain and body are not "ready" as this readiness needs to come from their body's participation in transition and their brains then focused interest and intention.

If a student knew where the next activity was, and could move over to that activity, and then could be helped to be seated to pay attention, they would be more ready to focus.

However, when the same seating and wheelchair that brings the student to school is the same position they are in all day, the body is challenged to be ready or focused. (Using same seating and positioning, again, is an "adult" concept and began with "adaptive seating" created for adults who had spinal cord injuries and who no longer have sensation, in their bodies. We have discovered, however, that even for them, changes in position are critical to all day postural management and focused attention to tasks.)

CONSIDERATIONS/SUGGESTIONS FOR CLASSROOM CHANGE

1. Analyze classrooms and plan some re-organization that can include clear traffic patterns to specific activity areas or zones within the classroom. Place equipment needed in this activity zone that will need to be used within that activity zone.
2. Develop seating for the adults. Use rolling stools and/or folding chairs with seat cushions, both which can not only move to each activity, but also which can support the adult to sit beside, or behind, or near the student, depending on the task. "Beside" the student is a "tutoring/assist teaching" position, "behind" the student is a "comforting" "reassuring" position, and "near" the student is a vote of confidence for the student, "you can do this by yourself."
3. Create clear rules of phone time. Create some communicative rules for all adults upon entry of an activity that includes the student. In other classrooms, no adult would even think about speaking out loud as the teacher is teaching, nor using their phone. The classroom is child centered and teacher and activity are respected.

   It is totally natural that in a classroom of non-speaking students, the "speakers" rule. The speakers then create the environment and the student-centered environment becomes adult oriented. Conscious and conscientious behaviors need to be encouraged and shared among all adults within the classroom.
4. Plan for AAC devices to be within the environment and used by ALL ADULTS at least part of the time.

5. Invite same age peers to join activity, and include them in not talking but using an AAC device. This can be for a short period of time, (15 minutes, timed with a timer, no one can talk without a device).
6. THIS IS NOT EASY! Really changing the environment to be more student centered, to have clear traffic patterns to support cognitive mapping, to support more student mobility within the room, and planning how each adult will function within each activity, is not easy. Everyone needs to be involved, and compromises considered.

   A student- centered learning environment is not static, but it does require real planning, and use and frequent analysis, to work.

SEATING FOR TASK ENGAGEMENT, AND ACTIVITY, AND ACCESS

Children with complex bodies, (unless they have a spinal cord injury) have sensation, and bodies need to move to become engaged in activity. Not stay still.

Seating for safe transport on the bus to get to school is very important. It has to be safe, and the child's body must be safe within it. Strapping needs to include safe restraints, just as all seating in cars, and trucks for all of us. However, many of the students also have tilt in space chairs, and that tilt helps keep the body relaxed while being transported, just as car seats are tilted.

Emily in the Kidwalk, working in her classroom with props, for a story.

This type of seating promotes body relaxation. It is symmetrical, and often referred to as 90/90/90 seating. There is a pelvic belt, usually hip guides, often a pommel, a chest harness, trunk laterals, and ankle and foot straps, as well as head rest, and a tray. The seat and back are mounted at a 90 degree angle to each other. The front riggings, are mounted so that the knees and ankles are also at 90 degrees. These supports are all padded, and pulled snugly to ensure stillness of the body, against the surface of the seating system. These structures, supports and restraints are needed for safe, passive transport as many students have increased tone, involuntary movement, seizure disorders, etc. This seating is important. It brings the student to school safely.

This same seating, seating to support relaxation of the body, is also important when the child is fed. Being fed, requires the child's body to be relaxed, and when the child's body is also tilted slightly (using the same seating described above), the head will flex slightly, which can support increased adequate swallowing.

However, being in this same position to be engaged in activity within the school day, is not supportive of the brain/ body focus. The body cannot be resting, for the brain to work. The body must be purposefully active, and its chosen postures support task engagement.

The more the body (anybody's body) is in contact with a surface the more it will "give in" to that surface. Like a LazyBoy, there is a footrest, headrest, armrests, as it is meant to support rest and relaxation. No one sits in a Lazyboy to engage in

While Emily is in her Kidwalk, she is able to look up from her work.

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a task. Tasks require eye/hand coordination, and eye/hand coordination require pelvic stability and with bearing. When the body is relaxed, the arms are relaxed and, in fact, the arms can't find "power" to actually be useful in tasks. (We don't try and prepare a meal from a Lazyboy, we couldn't find the power to hold a knife, much less focus on cutting).

Seating for activity, seating for task engagement, seating for using the body, has to have much less contact with the surface of the seating system. Also, for children, feet need to be on the floor, this is how the body "finds" gravity, and gravity, itself, is used by the body to find the power to use the extremities for intentional activity.

Mentioned earlier, the Kidwalk can be used throughout the day in activity within the classroom. A High/Low chair is also equipment to be considered within the classroom. R82's X-Panda, is an example of this type of seating.

Meet Emily, and see her use of systems in the classroom. Emily can be seen in the Kidwalk a table within her inclusionary classroom, engaged with a book and some props used to supplement a story that we read together. Then, another photo, is Emily being fitted for the High Low chair, and then it's holding a head array with electronic proximity switches (sensors) which she can use to access specific software on the classroom computer. There is also a photo of Emily and her mom at home,

Fitting Emily's body into the High/low chair, XPanda

Emily working at the computer with head array, in XPanda

with her mom holding an electronic proximity sensor as Emily and she play a game.

Access needs to be used and not just "tested" but used to manage the activity. The activity is important, and access needs to be experienced. So with seating that allows the body to be weight bearing, and engaged, then an electronic switch which does not require force, (its powered by a battery), and held by a person, who can use it on themselves as well, is a great way to start. Then, the proximity sensors can be embedded within a head rest (head array) and fit onto the high/low chair and can work on the Kidwalk.

Transparency with access is key. Switch hits should not be counted, nor judged for consistent accuracy. The child must be interested in the activity. The child will make mistakes, but the engagement in the activity is the most important. Human beings are not able to be predictably "motor consistent." No matter how much practice, to matter how skilled, motor behavior in human beings is vulnerable. Motor competency is not developed by motor accuracy. Instead a neuronal pathway is created within the brain that includes the process of task engagement. In short, a brain/body connection. When an activity is intentionally participated in regularly, with the knowledge and anticipation of beginning, middle and end, a neuronal pathway is created.

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Emily at home with Mom, playing a switch game on her PC, with a proximity switch with Mom. Mom is able to use the switch too, and place it easily for Emily.

This is like a shortcut. It's how the body becomes efficient, but it is not "automatic" nor does it predict perfection. Homo sapiens are processing beings. These processes develop in each of us uniquely as we grow and develop and participate in activity. But at any given moment, mistakes can be made, but as a process we can 'repair" those as the pathway is based on the activity, not singular acts.

LET'S REMEMBER THIS:

A big challenge for students who are learning AAC and the use of the AAC device is a lack of experience with the machine itself, its software and its navigation strategies. These all need to be taught too.

AAC devices are not just a "voice." They are machines, that contain software, that requires navigation. They have vocabulary that is pre-determined, or novel and must be taught. For the student to be "communicative" there is a lot of activity and teaching that must be done cooperatively, and access will, become more competent.

Accsss is a part of the activity and it will grow and develop as task engagement with activity grows..

EQUIPMENT REFERRED TO WITHIN THIS ARTICLE:

The prices of this equipment vary, and change. Each company can be contacted from information on their web-site for the current costs.

1. Kidwalk; from Prime Engineering; www.primeengineering.com
2. R82 High/Low Chair; www.etac.com
3. Adaptive Switch Lab's single proximity sensor; www.asl-inc.com
4. Adaptive Switch Lab's pediatric head array with 3 sensors ; www.asl-inc.com ■

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Solving The Writing and Organizational Challenges of Neurodiverse Learners: The Pedagogy of Visual Thinking Strategies

Globally, most education systems have designed their methods of teaching and assessment using traditional linear methods for decades: front-of-class verbal instructions, combined with information delivered through text-based learning e.g. notes and textbooks. This would perhaps include a splattering of graphic organizers, such as graphs and diagrams, to illustrate concepts visually.

For students, the assessment of their ability to remember information and at what level of higher order thinking they've achieved is generally based on evidencing this through written or oral evidence. Bloom's Taxonomy of Educational Objectives1 is a popular model for assessing learners' higher order thinking capabilities. There are 6 levels of thinking, starting at the lowest level of remembering, through to the highest level of thinking complexity: to create - independently coming up with novel ideas and solutions.

The traditional approach within education means HOW students "learn to learn" is heavily weighted towards methods that require strong writing and verbal skills. This approach is normally more suited to neuro-typical learners.

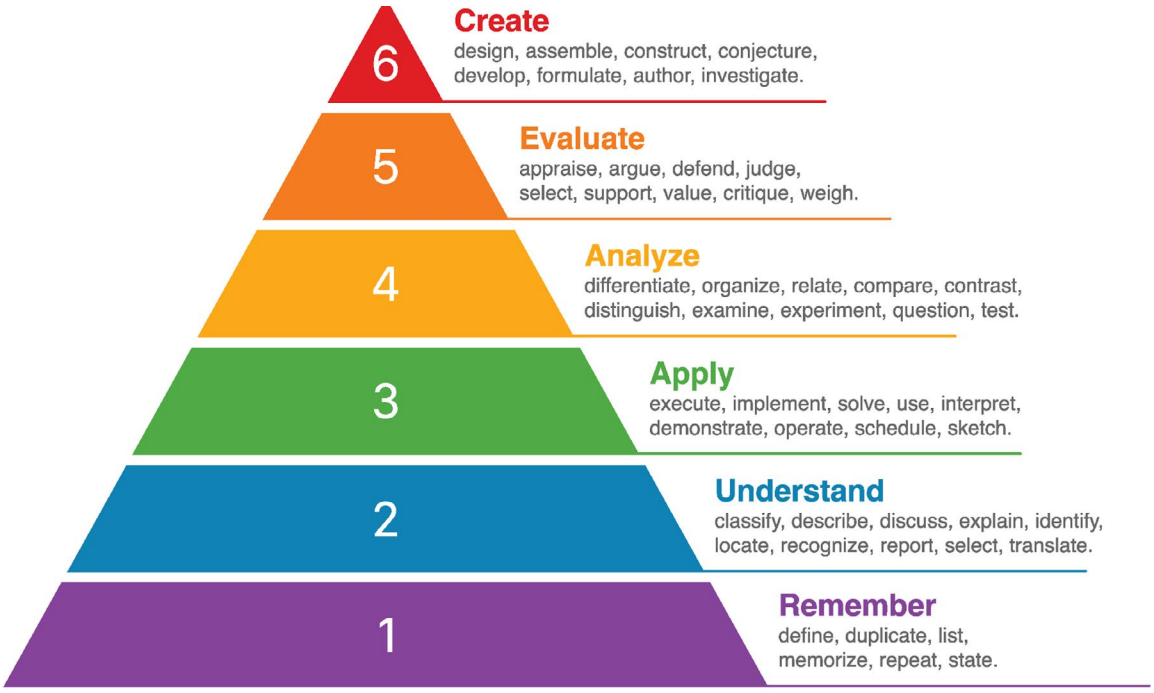
But what is the impact of this on neurodiverse learners: the 1 in 10 individuals with dyslexia, the 5% with ADHD, the 1-2% with autism and so on? Learners also often have co-occurring diagnoses!

In this article, we will explore the challenges neurodiverse learners face specifically with writing and organizational challenges within the expectation of our current education system, as well as how visual thinking strategies can level the playing field for these disadvantaged students.

Embedding visual thinking strategies into instructional design and assessment supports the popular concept of the Universal Design of Learning (UDL)2, which can benefit all learners.

We draw upon 36 years of in-field experience developing and publishing Inspiration, a visual thinking software that allows users to quickly capture, organize, synthesize and communicate information in a visual format; great for individuals who prefer to think and work in this way.

TechEdology is the developer and publisher of Inspiration, a popular visual thinking tool.



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REEZA AWOODUN Chief Executive Officer and Co-Founder at TechEdology. Reeza's passion is making it easy for users with neuro differences or cognitive challenges to use visual thinking techniques to retain information, develop higher order thinking skills and be able to write with more confidence. He draws upon 24 years working within the assistive technology and edtech space. reeza.awoodun@techedology.com

RUBY PETTIFER, Associate Publisher at TechEdology. Ruby has worked in assistive technology and edtech since 2020 and in her role at TechEdology, leads the development of our flagship visual thinking software, Inspiration. Ruby champions simplicity of use and accessibility, and ensures the software enhances thinking skills and has pedagogical benefits. ruby.pettifer@techedology.com

CHALLENGES FOR NEURODIVERSE LEARNERS...

Research with our neurodiverse users discussing the challenges presented by their diagnosis has identified the following needs that can affect the ability for higher order thinking:

- Short-term memory and processing
- Information retention and revision
- Focus and concentration
- Organizing and structuring ideas
- Managing tasks
- Motivation

How do these needs impact their learning?

IDEA GENERATION

Most tasks require an element of idea generation to kick things off. Complex tasks such as academic writing can trigger cognitive overload, overwhelming the learner's ability to think clearly, often described as the "blank page syndrome". They may be swamped with lots of unstructured ideas, and so struggle to capture this coherently verbally or in a linear text format.

ORGANIZING IDEAS

Users commonly describe not being able to visualize how ideas relate to one another in their mind's eye. Therefore they cannot form a mental picture of how ideas should be organized. This impacts the learner's ability to plan and organize their thinking and work, leading to a chaotic-looking output.

UNDERSTANDING CONCEPTS

The format of information presented to the learner can be unsuited to how they best comprehend and synthesize complex topics, so they are unable to mentally process the ideas, identify how multiple concepts relate to one another and combine this with prior knowledge.

RETAINING INFORMATION

They struggle to remember key facts, as the information isn't communicated in an optimal format to be processed and retained into their long-term memory.

COMMUNICATING IN WRITING

Writing is a complex task with multiple stages - pre-writing, drafting, editing and reviewing. For coherent writing, you have to remember what you've written and what you intend to write. Simultaneously, formatting requirements, vocabulary, spelling, grammar and referencing can all add extra pressure to cognitive load. Neuro-typcial learners can struggle with this, let alone students with neuro differences!

WHAT ARE VISUAL THINKING STRATEGIES?

We describe Visual Thinking Strategies as:

"A method of combining visual cues such as symbols, images and colour, with verbal cues such as keywords and phrases; to organize information, identify relationships and generate new insight."

It is a graphical way of processing information and tasks; breaking them down into its parts, in a creative non-linear format. Often these visual outputs are referred to as graphic organizers, using proven techniques that have been popularized over time: mind maps, concept maps, flow charts, tree diagrams, Venn diagrams and more.

POPULAR VISUAL THINKING STRATEGIES

There are so many visual techniques, but we will focus on three of the most popular ones in education - mind maps, concept maps and outlines.

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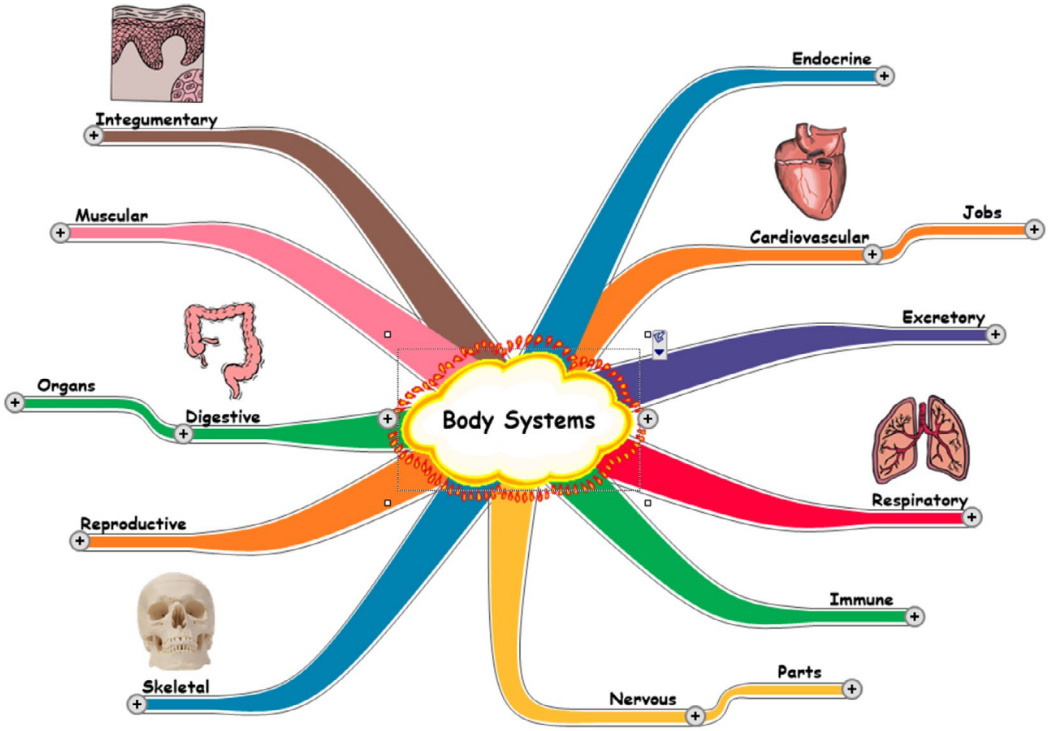
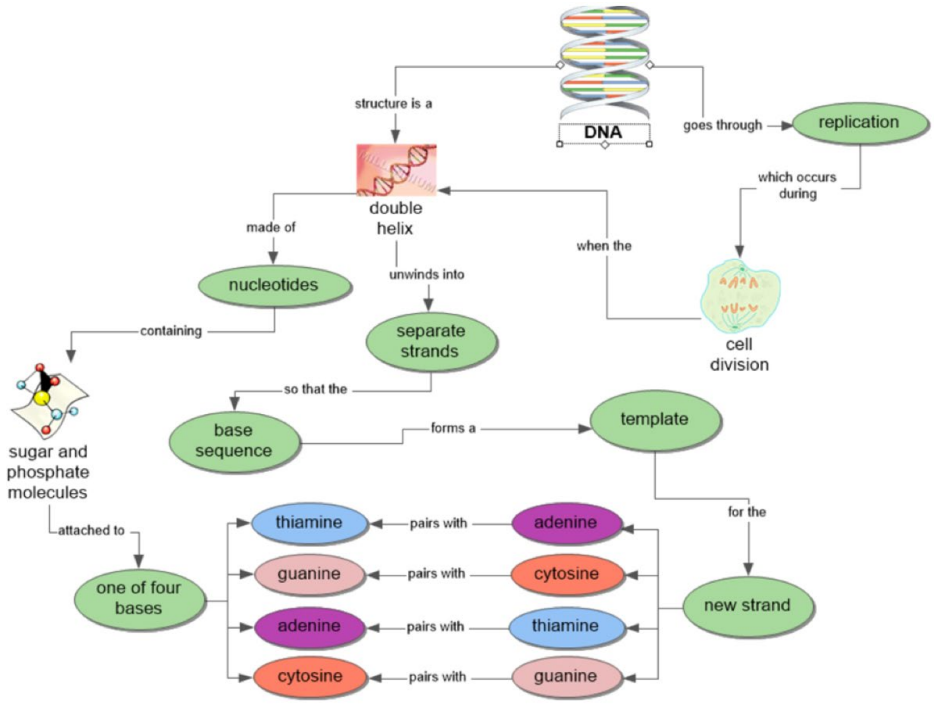


1. WHEN TO USE A MIND MAP?

"A mind map is a visual representation of hierarchical information that starts with a single, central idea surrounded by connected branches of associated topics." It is ideal for taking a single topic or concept and exploring it in greater depth.



2. WHEN TO USE A CONCEPT MAP?

"A concept map is a diagram that illustrates the relationships between concepts and ideas. Concept maps use linking phrases between concepts to explain connections." For complex topics, where you need to illustrate how different concepts relate to one another, as well as how these relationships affect each other, concept mapping fits the bill. Watch this video to learn concept mapping techniques. (Watch the video on how to create a concept map next page.)

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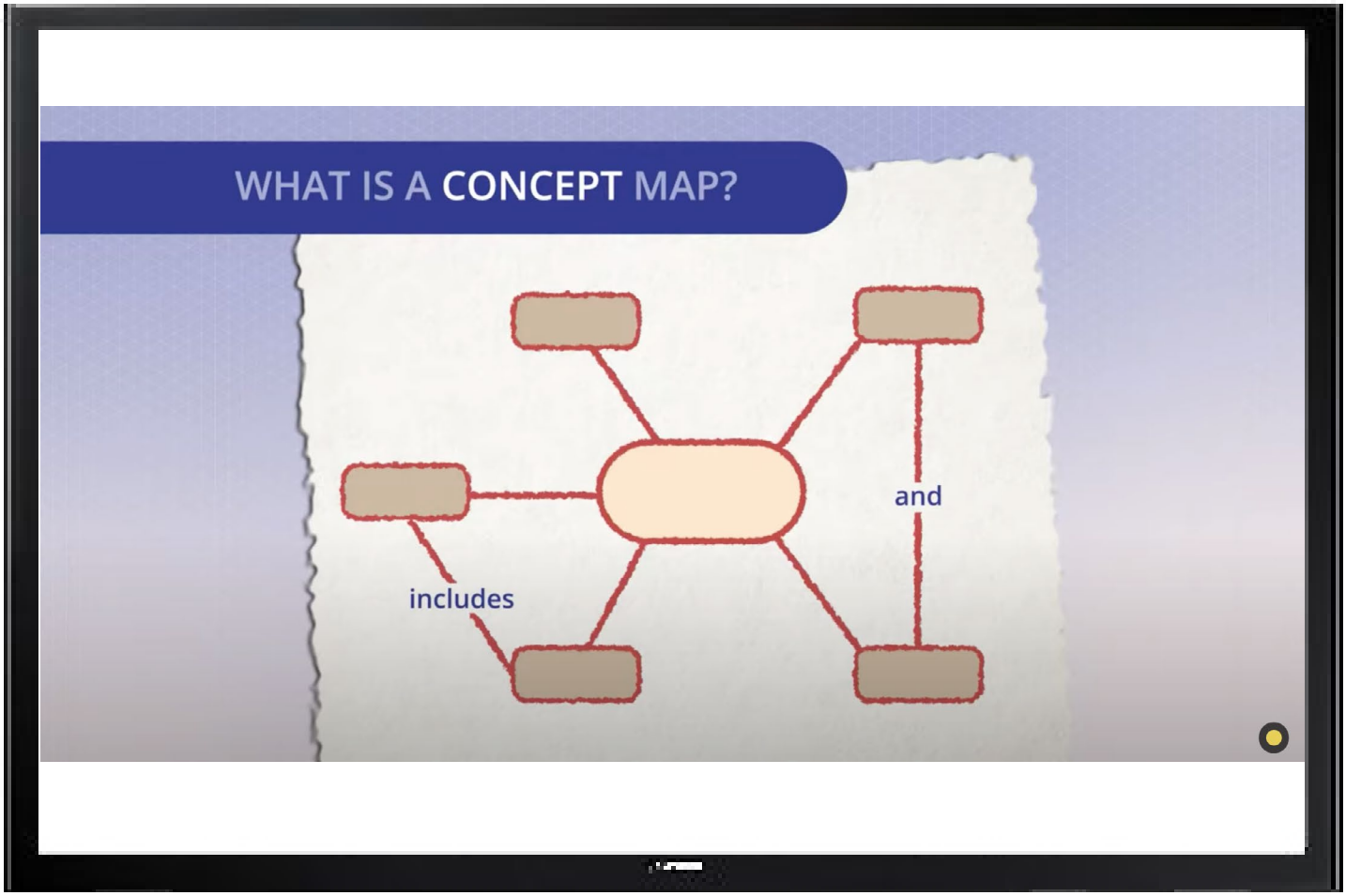

How to Create a Concept Map. https://www.youtube.com/watch?v=1_Qm4EfSB-U

Outline

I. Introduction
- A. Background
- B. Thesis Statement

II. Body Topic
- A. Subtopic
  1. Supporting detail
     - a.
     - b.
  2. Supporting detail
  3. Supporting detail
- B. Subtopic
  1. Supporting detail
  2. Supporting detail
- C. Subtopic

III. Conclusion
- A. Concluding Statement

IV. References

Include any material you have referred to in your outline.

3. WHEN TO USE OUTLINING TECHNIQUES?

"An outline is a preliminary summary of ideas placed in a logical order, typically hierarchically organized in headings and subheadings."

Outlining is ideal for note-taking and writing as

- Ideas are neatly organized by concepts
- Clear prioritization of ideas
- A technique that naturally scaffolds into the writing process

The outlining methodology is ideal for individuals who like…

- Structure and simplicity
- To organize information into lists

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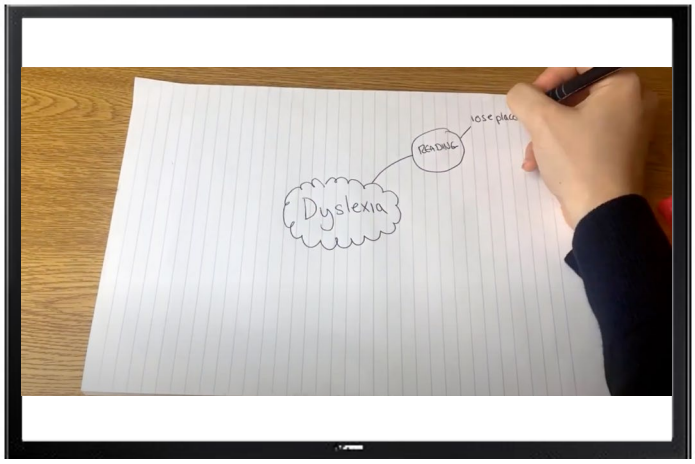
MIND MAPPING BY HAND

The pen and paper approach is often how visual thinking techniques are introduced to learners such as hand drawn spider diagrams and mind maps. Whilst it can be hugely beneficial to learners, particularly those who like the kinesthetic approach, it has its limitations, compared to the digital approach. For example, once you've captured those ideas in paper, it is difficult to make corrections and changes. Plus, using digital techniques, with the right software you convert your work into other formats, such as an outline.

Watch this video below.



Comparing hand drawn to digital mind mapping.
https://www.youtube.com/watch?v=1RGueCOFBB4

SUPPORTING THE STUDENT JOURNEY WITH INSPIRATION 11

Let's introduce you to our software Inspiration 11 and how it supports visual thinking strategies.

Designed to be simple to use, but powerful in the impact it has on users, it is a tool for creating mind maps, concept maps, graphic organizers, outlines and presentations. Inspiration 11 makes it easy for users to quickly capture their ideas and visually organize them. Then, transfer their visual diagram to a written outline in just one-click, perfect for structuring writing projects.

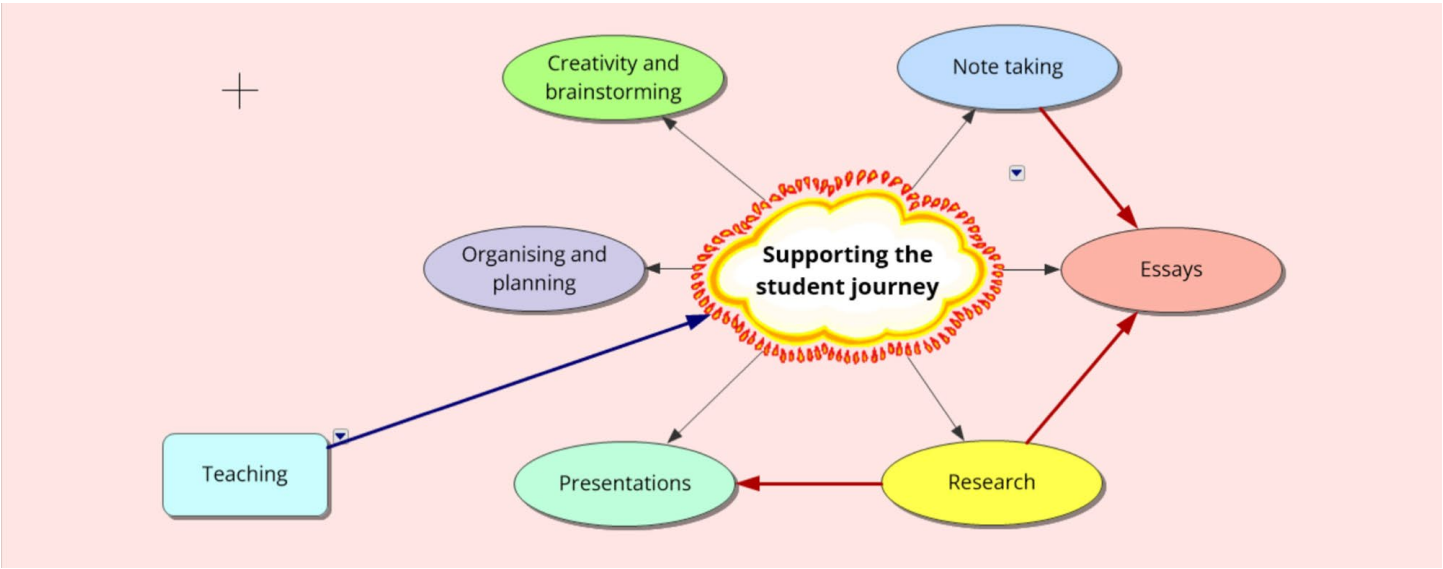
Students are tasked with various assignments during their education, each of which can bring up unique challenges. Inspiration supports users at each stage of their journey - from time management and note-taking to essays and presentations. The different environments within Inspiration allow individuals to select the view most appropriate for the task and most beneficial for their particular way of working. Students can continuously add to their Inspiration documents and use the interchangeable views to produce work for different tasks, meaning they don't need to start from scratch each time.

CREATIVITY AND BRAINSTORMING

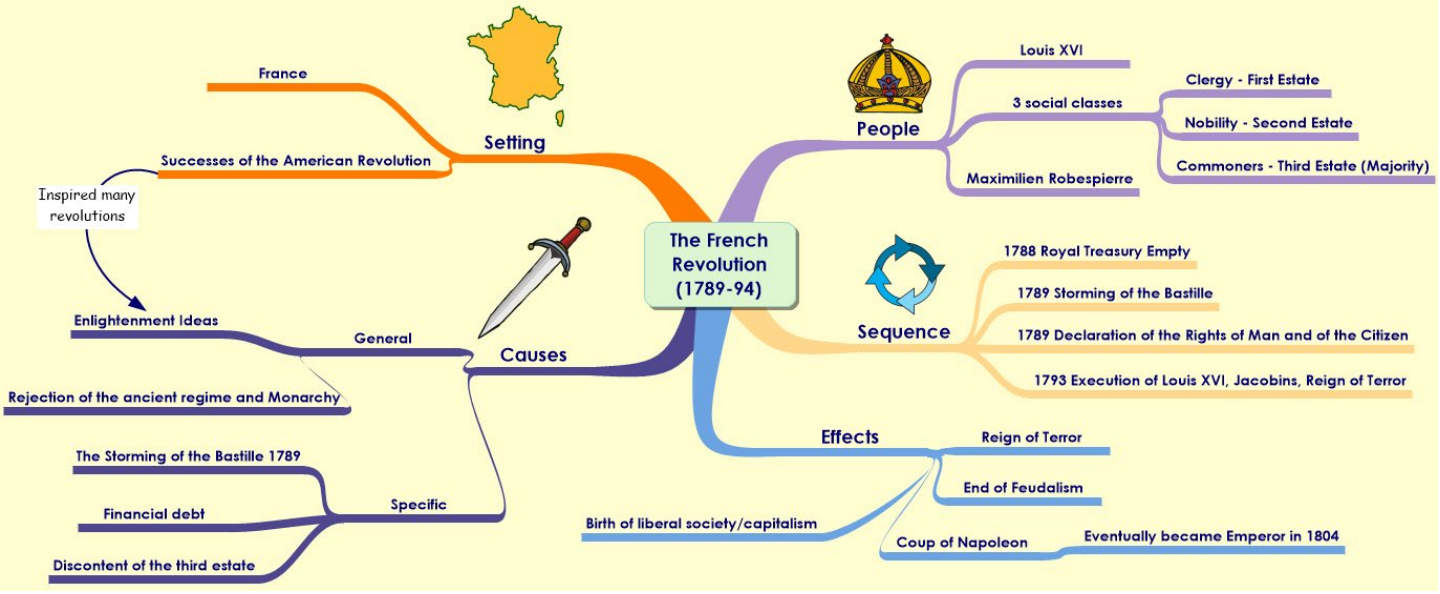
We know students are not short of ideas! To allow creativity to flow, students need to be unencumbered at the initial ideas generation stage of a task. Inspiration's Rapid Fire tool means users can first spill all of their ideas into the software using keywords and phrases, before considering how ideas connect, spelling, formatting and so on. The visual nature of Inspiration encourages creativity in thinking and allows students to see the big picture.

ORGANIZING AND PLANNING

Students are juggling many tasks, so it is vital for them to get them all out of their heads and down somewhere that they can visually understand and organize. Creating timelines or lists can be useful in understanding the bigger picture of everything coming up, or the breakdown of a task, that allows each part to be approached confidently by the student.



Inspiration 11



Note Taking - The French Revolution example

NOTE-TAKING

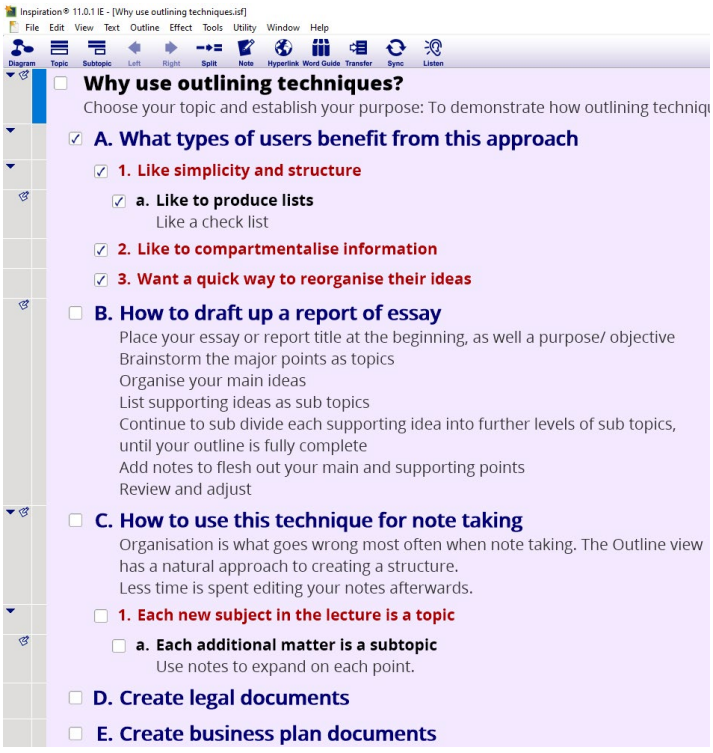
We don't remember whole sentences, but we do remember keywords, ideas, connections and visuals. The simple-to-use nature of Inspiration encourages effective note taking, meaning students will get down only the information they need in a timely way. Digital notes mean students can rearrange and rework what they have written as new information is made available, keeping work neatly organized and ensuring it is more beneficial to the student when they look back at it.

ESSAYS

Written projects can be overwhelming, but when broken down into smaller chunks, students can feel confident in tackling them bit by bit. Instead of staring at a blank document and not knowing how to get started, we suggest users start by breaking down the word count into rough sections relevant to the project, e.g., an introduction, for, against, and conclusion. Assuming the topic has already been studied to some degree, the student is likely to have ideas floating around in their head that they can then brainstorm around each section, adding notes and hyperlinks to additional information if needed. This usually provides a confidence boost as students can see just how much information they already know and start to see how it links up. Flipping between the visual view and the synchronized Outline View, students can start to structure their written project and continue writing. Users can export to Word, OneNote, and Google Docs when they are ready.

RESEARCH

Students are bombarded with resources, as well as their own research, so it can be hard to keep track of it all. Keeping it all in one place with relevant notes is invaluable when it comes to creating a bibliography when working to a deadline. Students can add hyperlinks to their Inspiration documents, as well as use the Citation Collection tool to create lists of resources relevant to a particular concept or idea. Any citations added will then be seen as an alphabetically ordered bibliography in the Outline View.



Essays - Outline example

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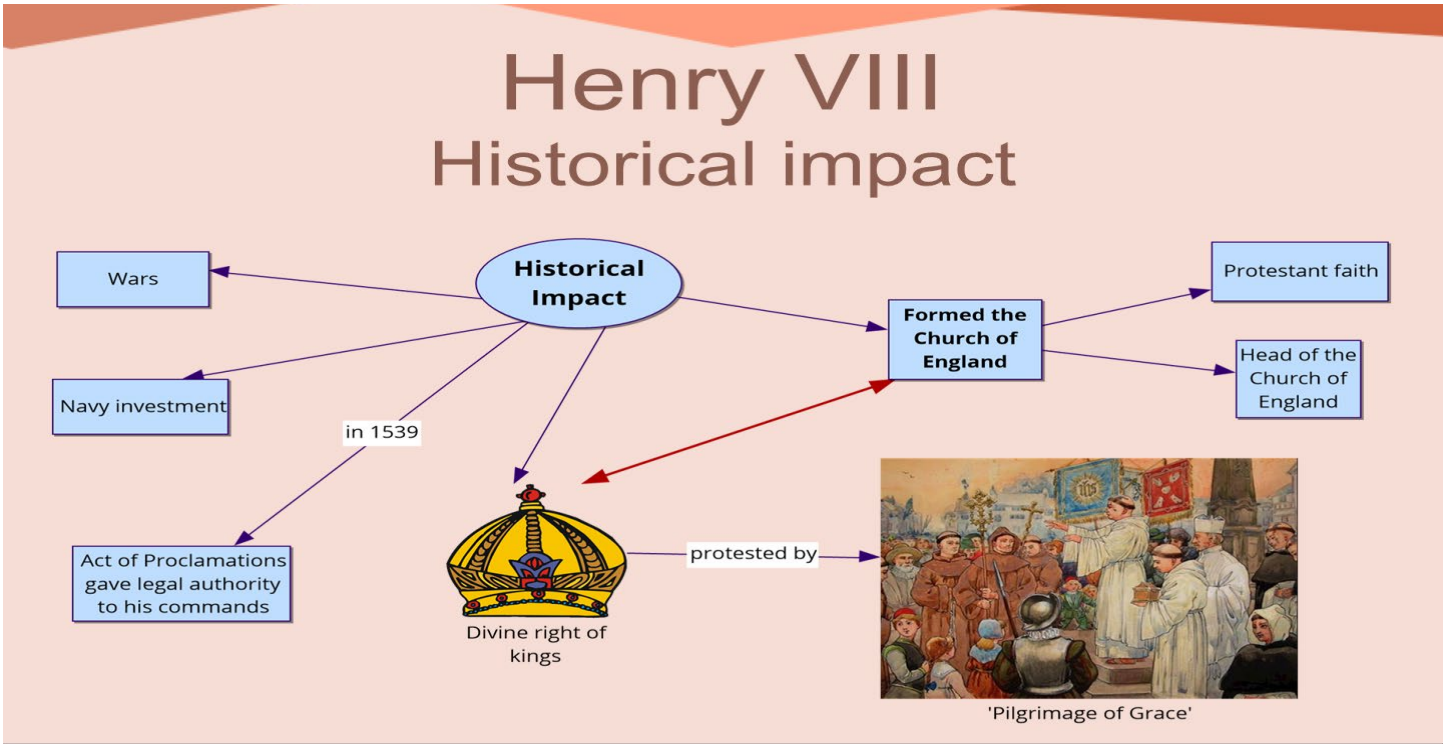
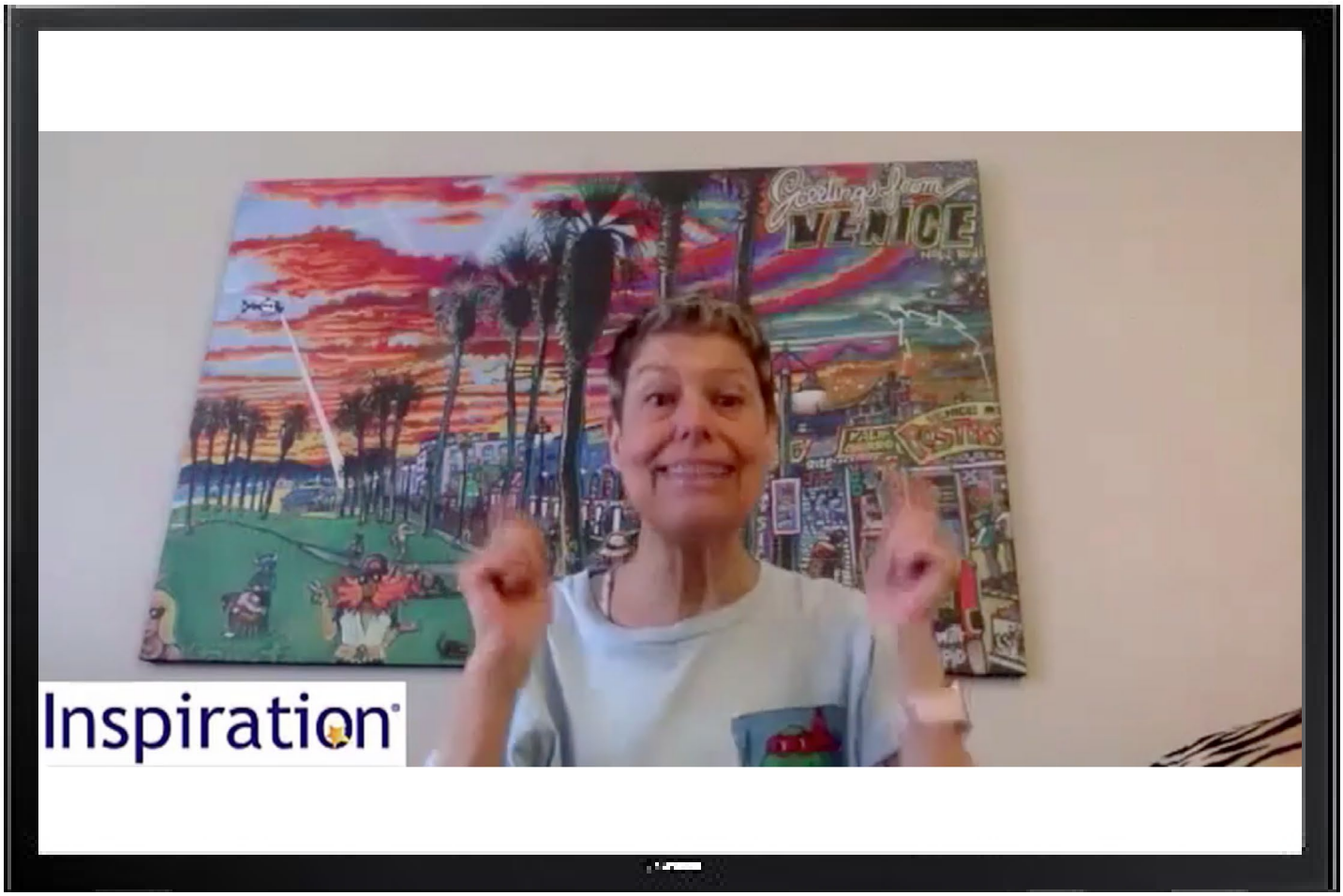


Presentations



Testimonials from users of Inspiration - https://www.youtube.com/watch?v=Cfem534lpZ0

PRESENTATIONS

Presentations can be another daunting task, but when broken down and using information the student already knows, they are easier to tackle. Inspiration makes presentation slides from your visual diagram, meaning the visual cues that students have added to their diagrams can then become visual cues for them whilst presenting. This helps to keep them on track with what they are speaking about, as well as provides a visually appealing presentation to the audience.

TEACHING

As well as a tool for empowering students with neuro differences to be independent learners, Inspiration 11 makes it quick and easy for educators to produce graphic organizers that support the teaching of curriculum concepts in an accessible format.

Tricky concepts that can be difficult to explain verbally in class or text, can be concisely summarized in an engaging diagram on a single page. For example, creating a concept map covering difficult topics in STEM subjects. This allows students to easily synthesize the information and deepen their understanding.

HOW INSPIRATION HAS HELPED OUR USERS

In this video hear from three users on how Inspiration has changed their lives, making a positive difference to their learning.

Watch 3-minute " Testimonials from users of Inspiration " video.

LEARN MORE ABOUT INSPIRATION AND HOW IT SUPPORTS NEURODIVERSE LEARNERS

We have developed a Needs Recommendation Guide for both education and the workplace, which illustrates how specific features of Inspiration 11 support different challenges of learners and employees. You can access these guides via our Assessor Toolkit: https://www.inspiration-at.com/assessor-toolkit/

If you would like to know more about Inspiration 11 including trialing it for free with students, please visit https://www.inspiration-at.com/

REFERENCES

1. Bloom, B.S. et al.(1956). 'Taxonomy of Educational Objectives: The Classification of Educational Goals. Book I: Cognitive Domain,' New York: David McKay Company.

2. CAST Universal Design for Learning: https://www.cast.org/impact/universal-design-for-learning-udl ■

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Wild and Free

Technology is everywhere! What should we use? How should we use it? Where do we find it? And don't even get us started with AI!!! When Dan and I put together our first "Wild and Free" session there was so much coming out for the first time in the way of innovative apps and programs that specifically addressed many of the needs of the students. Comparing notes, we realized how long the list was, and that we were finding apps that the other hadn't discovered. It demonstrated how important it is to read from many diverse fields and areas, and in many diverse forums and sites to connect what is out there. Step two is to "see deeper" into what we were finding, as many apps created by developers are presented in the context they originally believed it would be used in, but in reality, can address many other diverse needs and supports. This is where the creativity comes in.

What was our criteria when we presented our findings each year? …The apps and programs needed to be really wild, you've got to have this even though it costs something, or really, really good …and free! They needed to be easy to use, relevant to educators or students, and fill a need. After sharing some of these we found that they filled a need some didn't even know they had until watching them in action.

One of the difficulties today is an overabundance of very fine, easy to use apps, that run on a variety of platforms and devices, and the needs and requirements of a school's tech ecosystem as far as security and ability to operate within that environment, for the program to run on the hardware and operating systems

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DAN HERLIHY, AT Specialist, (B.S., M.A.), has worked in the education field for over 35 years, working in Special Education classrooms, as a Computer Resource Specialist, Network Administrator, Assistive Technology Resource Specialist and more. He has presented nationally and internationally as well as providing professional development for school districts on topics addressing assistive technology and technology integration. He has also written numerous books and articles, produced educational activities for educators and students, as well as online videos for educators showcasing technology integration. His expertise is in taking diverse technologies and connecting them together to provide solutions for access.
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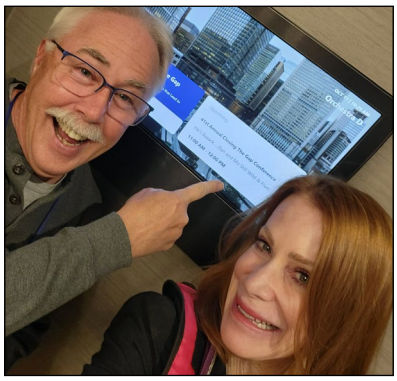

MO BUTI, With over 34 years of experience, Mo is a practiced professional in the field of special education providing services and support to those with disabilities and their families. She managed autism programs and services for over 6,000 students as Director of Autism and Intellectual Disabilities at Chicago Public Schools. Mo's additional experience also includes special education teacher, autism itinerant and special education administrator. She is now the CEO/owner of her own business AiepA: Advocate and Instructional Expert for People with Autism/ALL.

Mo Buti possesses a M.Ed-BD, M.Ed-ADMIN, QIDP certification, Director of Special Education degree/certificate from Illinois and her Type 75 Administrator certification.

Mo is a dynamic, international speaker and well-respected authority on autism, intellectual disabilities, adult services, behavioral strategies, educational supports, and more. An active member in the special education community, including the Illinois State Autism Task Force and the Vizzle Advisory Board, Mo was the recipient of the 2012 Bobby Reyes Tribute Award from Esperanza for outstanding commitment and dedication to children and adults with developmental disabilities by an individual.
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https://www.aiepautism.com/

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being used, as well as being able to easily be manage. As many schools have settled into just a few environments including only Chromebooks and the Chrome OS, only Macbooks and iPads, Windows using Edge or the Chrome Browser, etc. the need is also to demonstrate apps and programs that can play well within them, and are quick and easy to learn and use.

An example of a Chrome extension that is easy to use, relevant, and does not require very much in the way of "how do I use this" is Bibcitation Bibliography & Citation Generator. From any webpage click on the extension, choose the citation style, and it auto generates the citation. If items are missing that it hadn't initially found, such as the date the article was posted or the author(s), you can search the page for that information, click the add button next to the item missing, add it and click update. It regenerates it with the updated information in correct format. Great for teaching students to cite where their information came from when doing research for reports. This is also great to use to teach students how they can check their own work.

Searching for and curating the many apps and programs takes time. It would be easy to read a short description and think, "Oh, this sounds great," and just add it to the list. We have gone through lists and lists of programs, and tested them ourselves to make sure they work - sounds obvious, but you would not believe how many do not work well enough to be counted on working when needed. Why did this app work on my computer but not yours?! What version of the browser are you using? … this would never work on the spot in a classroom. Too many steps for a student to use successfully.

All during the year, from a myriad of places, we come across apps that go onto the list. There are many sites and organizations that assist with keeping up with what is new and emerging. Organizations such as CONNSENSE out of the University of Connecticut, which publishes the https://connsensereport.com/ Tech & Learning https://www.techlearning.com/ Top Tech Tidbits https://www.toptechtidbits.com/ AI Weekly https://aiweekly.co/ AI-Weekly https://ai-weekly.ai/ Edutopia https://www.edutopia.org, Richard Byrne's https://freetech4teach.teachermade.com/ (see the archive posts at the bottom of the page) and ……are just a few that provide weekly or monthly tips on what is coming out. However, another way is to simply spend time searching for a specific topic or category, such as "text to speech Chrome extensions" or "AI tools for leveling text" or "making image pdf files readable to screen readers." Other sites of interest include: https://edtechteacher.org/ https://www.edtechdigest.com/ https://www.educatorstechnology.com/

A few examples of wild and free apps and programs include QRcode Chimp (https://www.qrcodechimp.com) This is one of those apps that seem, on the surface, straight forward. It creates QR Codes from any URL you enter. However, it also allows you to create "dynamic" codes, meaning, you can save the QR Code, distribute it, (for example printing it) then later change the URL, and now when that original code you printed is scanned, it automatically goes to the new URL. You could send your student home with the QR Code you created that opens a specific book on the Tar Heel Reader website. They scan it and it opens that book. Tomorrow you open QRcode Chimp and change the URL for that QR Code to the URL for a different book. The student goes home, scans the original code, and today it opens a new book. You could program it each day to open a …new book, audio story, homework assignment, note for parents on how the student's day was, or …No need to be generating and printing a new QR Code for each day! Have parents tape it to the fridge! No more excused for "I forgot what my homework is."

Many AI programs now will take a reading passage, story, etc. and change the reading level to anything you ask. Programs such as Magicschool.ai, Briskteaching.com as well as the basic AI program ChatGPT all do this. If we were to always level passages for a particular student at the exact same level, it might discourage the student from reading, versus providing them with texts within a range. Think of Vygotsky's Zone of Proximal Development by providing "a range of book levels that are not too challenging and not too easy--depending upon a student's reading level" (Zone of Proximal Development, 2024). However, there are also many reasons for leveling the text where the "focus is on students' comprehension of the material rather than the development of reading skills" (Center on Inclusive Software for Learning at CAST., 2023, p. 2).

Seeing AI is a free app from Microsoft for iPad, iPhone and Android devices. Using this app (it uses your camera) you are able to point to currency and it will read aloud the denominations of both coins and bills, point to printed text and it will automatically start reading the text aloud (can choose from over a dozen languages but does not do translation) - including text on your computer screen. It does more including reading bar codes, reads aloud handwritten text, and it can describe a scene as well as describe colors. It can scan a person that you can then save under their name and they will recognize by name the next time they are in view of what you scan (prior to saving they will describe a little bit about the person- sex, hair color, and an estimated age. This is my favorite part as it thinks I am 28!) The ease of use is its ability to simply begin reading basically any displayed text, without the need of scanning, uploading, processing and saving beforehand makes it a great on the fly solution.

Looking to find some good podcasts for kids and adults? Listen Notes https://www.listennotes.com allows you to search for podcasts by topic, age group, name, and more. There are many podcasts for younger students, for example Sleep Tight Stories - Bedtime Stories for Kids, and Story Train: Magical Bedtime Stories for Kids, just to mention a few. Find some good podcasts for classroom/group listening, and work on listening skills with your students!

Would you like to get a written summary of a video? Summarize Tech, summarize.tech allows you to type/paste in

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the URL of a YouTube video, and get a written summary, as well as a summary broken down into 5 minute time segments in the video. For long videos this allows you to quickly read through what the main points being presented are, and decide if you want to watch it all, or just the sections of interest.

Many AI programs that are currently available, or will be over time, deserve a second look as to "how" you might utilize them. The basic ChatGPT program is an example. My providing the prompt "Create a list of steps and target dates involved, and due dates for completing a book report assignment that begins on September 1, 2024 and is due on September 30, 2024." Below we displayed just the first few steps rather than the entire sequence.

Step 1: Choose a Book (September 1 - September 3)

- Target Date: September 1
- Tasks:
  - Review the list of approved books for the assignment.
  - Choose a book that interests you and is appropriate for the assignment.
  - Notify the instructor about your book choice.

Step 2: Read the Book (September 4 - September 12)

- Target Date: September 4
- Tasks:
  - Begin reading the chosen book.
  - Divide the book into manageable sections for reading each day.

By adjusting the prompt, for example adding how many pages in the book, you can also have it provide the student with how many pages need to be read daily. This example also listed dates the book needed to be finished, dates an outline needed to be finished, when it should be finalized, etc. A great organizational handout for students who, I'm not saying I did this, but who pick up that book on Sunday …when the report is due Monday morning! When you think of ChatGPT as an assistant, it can create support materials like this for your students in seconds! Many students with executive function needs might have to have their teacher break down an assignment like this for them, but with ChatGPT the student can learn to create this on their own. This is a life long skill and can be used in college and beyond as we all know that our special education teachers are not coming with us to college.

Another thing we found is that sometimes we love a product, and it goes away and we find ourselves searching high and low for a replacement. A great example is Jamboard. We all thought, how can we live without this?! And then poof gone (last day will be Dec 21, 2024). So should you use Figjam? Ziteboard? Miro? MURAL? Microsoft Whiteboard? There are pros and cons for all. Know what features you liked the best about Jamboard in order to see which one of these might fill your need as a replacement. Or hmmmmmm might you learn about this at the 2024 CTG Wild and Free? We shall see!

Sometimes a product takes a break and comes back. ***TLDR*** (Too long Didn't Read) was a favorite Chrome extension of mine. It can simply summarize a webpage at 3 different amount of words. But then it stopped working. Ugg. So in my mission to replace it I found the extension ***Summarize the Internet***. This was great and simple. Then wa la ***TLDR*** came back (with a few more bells and whistles).

Finding these programs simply takes following connections, such as reading the mention of a program in an article, then going to the website of the program to read more about it. This is what it does…how might I use it!

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