

Introducing the World of the iPad: Useful Apps children with attentional concerns

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Augmentative & Alternative Communication (AAC) systems for visual aides to Executive Function, social stories and many other aspects of education and daily life

AAC – includes a wide range of communication modes and methods used to either supplement or take the place of spoken and/or written communication for individuals who have significant differences or impairments in their expressive skills. AAC can include the use of paper/pencil means of expression (i.e., using the alphabet to communicate with), sign language or gestures, the use of pictures or icons to represent ideas in expression, computer aided designs that can promote graphic or pictorial communication or be translated into text/icon-to-speech output. In short, AAC can include any means useful for expression that can replace a person's ability to speak.

Examples of APPs relevant to AAC:

- ❖ First-Then
- ❖ iCommunicate
- ❖ Pictello

Speech/Articulation

The ability to formulate the words in your mouth and have the oral-motor ability to speak, is all about articulation. Apps that can impact these skills include:

- ❖ A, B, C Phonics
- ❖ ArtikPix
- ❖ PhonopixFull
- ❖ Articulate It
- ❖ Smart Oral Motor
- ❖ VAST Autism 1 – Core
- ❖ “Talking” Tom & Friends

Language, grammar and early Literacy

There is significant overlap between a person’s development of Speech & Language and literacy skills. Improvement in one domain can support a person in the development of the other domain. A common error in programming occurs when educational plans preclude teaching reading or other aspects of literacy to a child with significant Speech & Language deficits. Indeed, the use of graphic information (i.e., the alphabet, written words, icon systems, aided language boards, keyboards, etc.) is not only useful in the service of promoting literacy, but also creates a visual structure that can assist a student’s ability to speak.

Examples of APPs that can serve both literacy and verbal communication include:

- ❖ First Words Deluxe
- ❖ Read & Write
- ❖ VAST Autism 1 – Core
- ❖ “Builder” Apps (Language, Sentence, Story or Question Builder)
- ❖ Miss Spider’s Tea party

Readiness, Early Elementary Literacy & Interactive Books

- ❖ Read & Write, Letters, Sounds & Combinations
- ❖ Word Slapps
- ❖ Fun Farm Patterning
- ❖ Logic
- ❖ Shape-O!
- ❖ AlphaWriter
- ❖ Sight Words
- ❖ Fill the Gap
- ❖ AssistiveChat
- ❖ Speech with Milo Prepositions
- ❖ Speech with Milo Verbs
- ❖ Spark! HD: Spark Story Starters
- ❖ All of the Dr. Seuss books

Occupational Therapy (OT)

It has long been recognized that OT plays a crucial role in the development of literacy skills (i.e., handwriting; keyboarding, etc.) and has been a central therapy related to the promotion of fine motor skills (precision hand use). It is less apparent to some that OT is a critical discipline in promoting other aspects of perception and knowledge, such as spatial awareness and problem solving. This is in reference to a person's ability to visually process how different parts of a scene or activity fit into a larger whole – “being able to see the forest for the trees.”

Examples of APPs related to OT (fine motor and spatial awareness) needs:

- ❖ 1, 2, 3, Color HD
- ❖ A Bee Sees
- ❖ Alphabet Tracing
- ❖ iWriteWords
- ❖ Talking Gina the Giraffe
- ❖ Katy Perry
- ❖ Labyrinth 2
- ❖ Marble Mixer
- ❖ Pattern Search
- ❖ Tangrams
- ❖ Tozzle
- ❖ Dexteria

Executive Function & Analytical Skills (that reveal “true” intellect!)

These are some of our most profound cognitive skills. They influence everything from our understanding of the “big picture” of what something means to our ability to see things from our own, as well as from another person’s, perspective. Executive function includes the abilities to see patterns, to plan and organize, to be attentive to tasks, and to anticipate what lies ahead in what we are doing.

Analytical skills involve the processes that allow us to solve problems. This includes a range of problem-solving strategies, such as *deductive reasoning* (being able to reason from a theory about something to being able to predict specific outcomes from that theory) and *inductive reasoning* (going from a specific observation to being able to come up with a theory of why that observed event happened).

Examples of APPs relevant to Executive Function and Analytical Skills:

- ❖ Casey’s Contraptions
- ❖ Fantastic Contraption
- ❖ Little Things
- ❖ Quibble kids
- ❖ Pattern Search
- ❖ My first Slider
- ❖ Hanoi
- ❖ Build a train
- ❖ Cover Orange
- ❖ Playtime Theatre

A World with iDevices & Apps: What do they offer (and what are the risks)?

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A “hook” for interest, attention and fun – Many children, regardless of developmental status or the presence or absence of diagnostic symptoms – respond to electronics. It is routinely the case that children, who otherwise struggle to pay attention to conventional educational activities, are hooked the moment that they have access to electronic medium. Watch how much fun children have in using electronic devices and ask yourself the question, “can my child be as interested in school work as they are in video games?” The answer is almost always “yes.”

“Visual” pathways of instruction – We have learned much over the last 15+ years about modalities of attention, instruction and how people learn. Old-school education was about children being lectured to and processing most information through their ears. However, with the emergence of discussions of children with attentional issues as “visual learners” (c.f., Hallahan, Kauffman & Pullen (2008), *Exceptional Learners*) and growing evidence from Sensory Integration therapists, there is heightened awareness of multimodal paths to educational technologies, strategies and methods. Integral to this process is developing educational approaches in which the materials come through all of our senses including vision, touch and hearing that all serve to help us understand the material “at hand.”

Interactive and “dynamic” educational instruction – The curricula that can be delivered through these types of devices and software shows a student how they can experience learning in a dynamic and “hands on” ways. Students immediately see their potency over the materials. Learning is not static, but grows and changes as the student interacts with the device and software. Books can be spoken to and they can talk back. Problems can be solved and explained. Tasks that require fine movement can be redone and modified. Our newest clichés speak to “dynamic action” – if a picture is worth a thousand words, a videotape is worth volumes! Not only do iDevices and other computer designs offer access to pictures, symbols, video and other

forms of electronic visual and audio-medium, they also allow the user to dynamically act on these materials. In total, these new objects of education create a dynamic relationship between the student and the materials that results in the learning feeling a sense of mastery and control.

Expanding paths for generalization – what we have also learned over the years is that learning most concepts and materials is only as good as our ability to generalize what we have learned across settings, people and events, all of which are all slightly different from one another. What these devices offer is one more medium through which ideas and information can be presented, and ways to create new dimensions in understanding concepts. The net effect is that there is an ever-expanding set of opportunities for new learners (at every age) to generalize what they learn across conventional formats, like books and blackboards, to new platforms, such as iDevices and Smartboards.

Access to the e-world – iDevices and Apps, like earlier computers before them, have created an access to the wider world that prior generations of students never had. Whether it is accessing Wikipedia, Googling an important topic, or checking in with friends in the Social Networks, these devices have continued to make access to the e-world progressively more attainable for more and different people.

Portability of instruction and entertainment – Have you ever wondered how you were going to suffer through the next Doctor's visit with your anxious child who hates to wait? Next time, bring your iPad and some fun Apps. Have you ever tried to assist a child who struggled in the back seat of a car or during walks through the grocery store? Try using a dynamic visual schedule that the child can carry and modify as he or she walks. The fact that smaller hand-held devices are, by definition, portable, brings the classroom and information that can impact their development to wherever it may be needed.

Intelligence revealed! – Imagine had Mozart never sat in front of a piano? How would the world have known his musical genius? Similarly, we are finding many individuals who, had they been educated through conventional means, would never have discovered his or her true intellect and abilities.

What are the drawbacks or risks of these devices?

Limits of curricula – The universe of educational curricula that have been developed for iPads is quite limited to date. Not much has been developed for

the iPad as a teaching tool... at least not yet. Moreover, most of what is out there extends to the Early Childhood and Elementary School years.

Risk of OCD & anxiety – Obsessive-Compulsive Disorders (OCD) are characterized as forms of anxiety or fears that are unrealistic, yet result in highly repetitive actions. Though this diagnosis is considered to be entirely separate from other developmental “differences” such as Attention Deficit Hyperactive Disorder (AD/HD), Autism Spectrum Disorders (ASD), and others, OCD is often discussed in relation to the repetitive actions and narrow ranges of attention that these individuals often show. A person diagnosed with AD/HD or ASD can become overly focused on a small number of events in their environment and adhere rigidly to those few interests. Moreover, many of these individuals can become high agitated around these few objects and/or interests. Hence, care must be taken that a learning tool like an iPad does not become an object of over-focus at the exclusion of other learning media and medium, that only serves to generate repetitive and anxiety-producing actions.

Risk for poor Generalization – Lack of generalization across mediums, people, places and situations is a consistent concern for a variety of individuals that carry a variety of diagnoses. It is commonly reported that individuals diagnosed with AD/HD and other developmental “differences” can learn something in one location or while working with one teacher, only to look as though they know nothing of that concept in other settings or with other people. It will be alluring for many to be overly reliant on the use of an iPad and Apps precisely because it holds high levels of interest for many. However, if the same concepts and topics are not also taught and demonstrated in other medium, there is a great risk that the concepts aren’t being learned in a complete and meaningful manner. A person has only “learned” something, if they know the information – and can show their knowledge – across a variety of situations. You don’t “know” your phone number if you can only produce it while sitting at your desk at school with only one teacher, but not under different situations or with different people. Don’t ever rely on only one way of teaching and learning or you risk poor generalization of skills. To that end, don’t rely on an iPad at the exclusion of many other instructional media!

Not a cure-all – For people who think that iPads, Apps or any *singular approach* to education are panaceas, they are NOT. These devices and software are *tools* for learning and having fun, not solutions to complex struggles of development.