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Assistive Technology and Autism

Introduction

Whether autism spectrum disorders are truly on the rise, or we are “merely” doing a better job of identifying and assigning diagnoses is an issue on which disability professionals disagree. Even the definition of “autism spectrum disorders” is a fluid one and one that is subject to debate. Asperger’s Syndrome, for instance, is considered by some to be the high end of the autism spectrum while others believe that, while it has some shared behaviors, it is a separate disorder, not to be considered on the spectrum. Until distinguishable chemical and/or physiological markers are identified, we will not be able to resolve these debates. What we do know, however, is that virtually every school system in the country is facing increasing numbers of students who have been identified as having one or more autism spectrum related disorders. The goal of this discussion is to help the parents, teachers, therapists, and other professionals whose role it is to contribute to the academic and personal growth and well-being of those children, by sharing information about the ways in which assistive technology (AT) can support such children.

Autism spectrum disorders are neurologically-based. They potentially affect speech, gross and fine motor skills, sensory integration, socialization skills, self-regulatory functions, and cognitive abilities. They are sometimes complicated by co-existing conditions (or “comorbidities”) such as obsessive-compulsive disorder, attention deficits, or hyperactivity. As with any “spectrum” disorder, autistic children display a wide range of challenges and abilities and thus we can not make global assertions about AT “for children with autism.” No individual challenge exists in a vacuum; an AT suggestion for a child with a specific academic challenge will have to be viewed through the filter of the child’s other issues, as well as their available support system and personal preferences. An AT assessment can become quite complex, therefore, if it is to truly meet the unique needs of an individual child. One of the

things to keep in mind as you consider the possible benefits of a piece of AT equipment or software is that while certain aspects of the tool may help one problem, other elements may exacerbate a co-existing problem. For instance, a computer-based program that works with a child on developing appropriate social responses may include a response reward that involves flashing lights and a loud noise which may seriously disturb him.

Just as there is no universally agreed upon definition of autism spectrum disorders, there is disagreement in the disability field about the definition of “assistive technology.” Most often, one reads the standard legal definition – “any item, piece of equipment, or product system whether acquired commercially of the shelf, modified or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.” It’s useful to be familiar with that definition, as it’s the one used in the Individuals with Disabilities Education Act (IDEA) and therefore is the one involved in federal funding initiatives.

In practical terms, however, there is disagreement about the extent to which AT should include items such as calculators, personal digital assistants, laptops, and other pieces of equipment in widespread consumer use. Some maintain that, while an item may be an optional luxury for someone (the student could perform as well or nearly as well without it) it should be considered assistive technology if it allows a child with a disability to perform a task that s/he could not otherwise perform. Obviously, there are fine lines and, when budget issues come into play, they can become contentious.

In this discussion we will not impose restrictive definitions. Each of the five faculty members has his or her own opinions based on many years of research and experience in the field. Likewise, we have over 550 registered participants, from 48 states, two territories and 3 other countries. It should make for a rich and diverse discussion.

In the course of the next 17 days, we’ll discuss many issues related to autism and AT. We know that participants will be helpful and gentle with each other, recognizing that “there’s no such thing as a stupid question.” While each of the two discussion strands is independent, we know from experience that there will be cross-posts and that both strands will at some point address similar questions. We advise you to look at, and participate in, both areas of the Institute, as well as the “challenge.”

Welcome!

Expert's Corner

Expert's Bios

Joanne M. Cafiero

Joanne M. Cafiero, is an autism and AAC consultant. Dr. Cafiero began her career as a special educator for adolescents with ASD. She has a doctorate in autism curriculum and instruction with a minor in family counseling. Dr. Cafiero was Autism Projects Director for Johns Hopkins Center for Technology. She developed the autism graduate program at Johns Hopkins Department of Special Education. Dr. Cafiero is on the editorial board of Focus on Autism and was the guest editor of the ASHA Perspectives in AAC for June, 2007 which focused on autism and AAC. Dr. Cafiero served a 3 year tenure with the National Academy of Sciences studying science-based interventions for ASD. She is the author of the first, and to date, only book on Autism and AAC, Meaningful Exchanges for People with Autism, published by Woodbine Publishing.



Matthew S. Goodwin, M.A

Matthew S. Goodwin, M.A., is the Associate Director of Research at the Groden Center – an Institute for Autism Spectrum Disorders (ASD) in Providence, RI – and a Ph.D. candidate in the Behavioral Science program at the University of Rhode Island. He is well acquainted with a variety of experimental methods and statistical approaches used in the behavior sciences, and has over a decade of research and clinical experience working with the full spectrum of children and adults with ASD. He also has extensive experience using innovative technologies for behavioral assessment, including telemetric physiological monitors, accelerometry sensors, and digital video/editing systems. His current research activities, involving a number of computer scientists at the Massachusetts Institute of Technology and funded by Autism Speaks and The National Science Foundation, include: (1) co-developing wireless, wearable physiological sensors to measure arousal responses in persons with ASD in natural settings; (2) combining wireless accelerometers and computerized pattern recognition algorithms to automatically detect stereotypical motor movements in real-time; (3) co-creating a wearable camera system able to automatically detect facial expressions to foster social-emotional learning in people with Asperger Syndrome; and (4) co-developing a portable system for recording and analyzing longitudinal audio-visual recordings relevant for early screening and monitoring of autism and related disorders.



Expert's Perspectives

Joanne M. Cafiero

It is only in the past 10 years that AAC has been implemented and made available to individuals with autism. The course of research in the areas of autism, language stimulation and special education have brought focus to the viability of AAC use in natural environments for individuals with autism. In addition, research in education, behavioral psychology, neurology and physiology compel language intervention to begin as soon as possible to insure the best possible outcomes.

The early indicators of autism, including difficulties in maintaining eye contact, gestural communication, protodeclarative pointing and joint attention are behaviors which provide the scaffolding for the development of language. Many specific AAC interventions can target these early indicators and may provide effective scaffolding for the development of symbolic communication. Autism and Family Functioning

The behavioral, communicative and social deficits in individuals with autism are significant stressors on their families. These stressors negatively impact family functioning more than in any other disability. In addition, parents' assessments of particular characteristics of their pre-school children with autism indicate language and communication to be the most serious and stressful component of the disability. Research studies implementing Natural Aided Language strategies through parent training have indicated increases in parent-child communication and decreases in parent perception of severity of their child's handicap as well as concurrent parent stress (Cafiero, 1998, 1995).

As families and practitioners struggle with the issue: "What is best for this child? Which interventions will provide the best outcome?" it is important to remember that autism is a spectrum disorder. Every child is a unique collage of strengths and needs. There is no "rubber stamp" best program for every child. (Freeman, 1996). AAC technology is showing great promise as a vehicle for implementing a variety of methodologies more effectively. More importantly, though, providing a means to communicate immediately, that is, at first diagnosis, is essential. Functional communication training minimizes the development of aberrant behaviors (Mirenda, 1998), and many researchers believe it provides the scaffolding for the development of more complex language and cognitive skills (Dexter, 1998; Cafiero, 1998, Kangas & Lloyd, 1988). Interaction, communication and discourse between people are essential parts of our humanness. Individuals with autism are entitled to the tools necessary to exercise this most basic human right.

I look forward to discussing these issues and others related to autism and assistive technology.

Matthew Goodwin

Using Digital Technologies to Enhance and Accelerate the Pace of Autism Research and Treatment

Imagine if your son with limited verbal abilities could talk to you with a wearable device that mimicked his voice. Imagine if your daughter loved to play with cameras, and when she used a special wearable camera it made her eager to look at and understand other peoples' facial expressions. Imagine if when your son hit himself it triggered recordings allowing his caregivers to understand exactly what led up to these episodes, so they could be reduced in the future. Imagine if a stylish jacket could comfort your child at a moment of heightened stress, helping him to regulate his feelings. Or if a special pair of glasses could, at moments of perceptual overload, respond in a way to help reduce his overloaded state. Imagine if a virtual reality environment could simulate a job site and let your daughter practice her job skills so she could work independently in the future. Imagine if an education specialist from another state could interact with you and your child in your home using video cameras and the Internet. All of these scenarios, and many more, are possible with existing and developing technology.

Recommended Resources

Assistive Technology for Children with Autism

This article, written by Susan Stokes under a contract with CESA 7 and funded by a discretionary grant from the Wisconsin Department of Public Instruction, discusses the various modes of technology that can be used for children with autism to increase or improve various aspects of their life, such as their expressions, social interactions, academic skill, self help skills, and basic overall independence in their daily functioning lives. Stokes then moves into discussing assistive technology and what it is, particularly in relation to children with autism. She states that children with autism process things better through a visual mode. She then talks about various pieces of technology that can contribute to these children understanding the world around them through visual representations. These tools range from low to high tech. Examples are provided throughout her discussion to aid in comprehension.

<http://www.specialed.us/autism/assist/asst10.htm>

Autism and Communication

This article, from the National Institute on Deafness and Other Communication Disorders, discusses autism, the difficulties individuals with autism face in communicating, and what is being done to help. This article is a good one to refer to for background information on the communication issues that individuals with autism may face. It talks about how speech and language is typically developed and also how it develops in children with autism. The article discusses how communication barriers can be overcome and assistive technology can be a possibility.

<http://www.nidcd.nih.gov/health/voice/autism.asp>

Autism, Speech, and Assistive Technology

A.M. Baggs is a college student who wrote about an encounter she had with the university's "Autism Expert." She discusses how she uses her keyboard to communicate and how much it helps her be included in everyday life. She also discusses how much emphasis is put on individuals with autism in acquiring speech, but she stresses that you don't need speech to communicate. There are many valuable pieces of technology that can help people with autism communicate and that is just as useful. It is a very powerful first person narrative.

<http://www.autistics.org/library/spchasst.html>

Assistive Technology

This overview of assistive technologies was put together by Autism Coach. It discusses basic pieces of assistive technology, but relates them specifically to individuals on the autism spectrum.

<http://www.autismcoach.com/Assistive%20Technology%20Overview.htm>

Autism and Assistive Technology

This overview of assistive technology for individuals with autism was written by Linda Oggel, M.A., CCC-SLP and Sue Palko, M.Ed. It begins by discussing what assistive technology is in general. They then go into different areas of life where AT can be useful to individuals on the autism spectrum. These areas include: communication, social skills, attention, organization, academics, and independent daily living skills.

http://www.vcu.edu/ttac/autism/pdfs/e_news/enews_2004_apr.pdf

'Kaspar' the Robot Helps Autistic Kids Play

This is an article, written by John Blau, that discusses a research project in the UK that is investigating how robotic toys can become social "mediators" for human contact, helping autistic children interact with other children and adults. The robot that is of focus in this article is Kaspar, a child-size robot that is being tested in a variety of special education classrooms in the UK. Kaspar performs basic actions like smiling or waving, which appeal to children with autism because the actions are simple and predictable, according to Robins. The article discusses the initial tests and the hopes for where this project hopes to go and what it wants to accomplish.

<http://www.computerworld.com/action/article.do?command=viewArticleBasic&articleId=9025258>

Autism and Technology: How Can Technology Support the Communication Skills of a Student with Autism?

This Powerpoint presentation, presented by Meghan Gallagher, discusses her research on the question How can technology enhance the academic and social communication skills of a student with autism? The presentation looks at the data she collected and how she collected it. It also looks at her findings in her research and her conclusions. While it is not as useful as hearing the presentation, first hand, the powerpoint may spark some interest or give you more information on the topic of AT and autism.

http://www.coe.ufl.edu/school/PT3/OurTeam/Resources/Meghan/meghan_inquiry.pdf

Information... Autism and Information Communication Technology

This factsheet from the Inclusive Technology website discusses various technologies for individuals with autism. The article stresses that there is a very wide range of individuals on the autism spectrum so it is very hard to say that a certain piece of technology will help individuals with autism, because there is no one piece of technology that will serve the needs of every individual identified on this spectrum. They discuss that it is important to talk about what the child needs help with and then go from there for identifying technology. Areas that children may need help with that are discussed in this article include: recording and writing, motivation, cognitive access, motor access, causes and effect and early interaction, and communication.

<http://www.inclusive.co.uk/infosite/autism.shtml>

An Innovative Technology for Individuals with Autism Spectrum Disorder

This article discusses the piece of technology, Play Attention. Play Attention is a feedback-based pro-

gram that enables individuals to control a series of computerized cognitive tasks by attention alone. When a student loses attention the character goes in the wrong direction, allowing the student to actually see a direct correlation between behavior and attention. Play Attention is a tool that can help children with autism with their ability to pay attention.

<http://www.techlearning.com/story/showArticle.php?articleID=165700651>

Innovative Technology for Autism Initiative

The Innovative Technology for Autism Initiative (ITA) was created to spur development of new technology to assist individuals living with autism. Their goal is to lead in the development of products that provide real world solutions to issues faced by individuals with autism, their families, educators, healthcare specialists, and researchers. They want to facilitate an interdisciplinary and creative approach to the challenge of utilizing technology to improve the daily lives of people with autism.

http://www.autismspeaks.org/science/research/initiatives/ita_initiative.php

The Use of Technology in the Education and Treatment of Children with Autism

This is a video available on the Internet. It is a presentation that gives an overview of research on technology with people with autism, why technology is effective and how to incorporate it into any treatment.

<http://video.google.com/videoplay?docid=-8159688568206791982&q=autism+technology&total=42&start=0&num=10&so=0&type=search&plindex=0>

Virtual Speaker by Talk Autism

This distance learning platform was created by those serving the autism community. They have videos, written presentations and chat opportunities. Their videos are short and to the point. The first video on their list focuses on how technology can make life easier for those who teach children with autism.

<http://www.talkautism.com/TalkAutism/VirtualSpeaker.aspx>

Use of Technology in Interventions for Children with Autism

This research paper discusses a growing number of studies that have investigated diverse applications of technology-based interventions with children with autism. The purpose of this paper is to review the growing empirical support for the efficacy of technology-based interventions with children with autism and to recommend future directions for research. This review will focus on five examples of technology introduced as a temporary instructional aid to be removed once the goal of behavior change has been met: a) tactile and auditory prompting devices, (b) video-based instruction and feedback, (c) computer-aided instruction, (d) virtual reality, and (e) robotics. Further directions for research and practice with each technology are discussed."

<http://homepages.wmich.edu/~leblancl/pub/GL2004.pdf>

Increasing Communication Skills in Students with Autism Spectrum Disorders: The AAC Technology

Solutions

This article discusses autism in relation to AAC devices. It talks about how useful AAC devices can be when used by an individual with autism. The author, Joanne M. Cafiero, Ph.D., discusses the following categories: early indicators of autism and AAC interventions, natural aided language, naturalistic learning, creating interactive language boards, literacy learning and communication skills development, and accountability and data collection systems. At the end, she discusses what the future possibly holds for AAC technology and individuals with autism.

<http://www.outersound.com/cafiero/articles/10-07-1.htm>

The Use of Technology in the Study, Diagnosis and Treatment of Autism

“The aim of this paper is to provide an overview of some of the uses of technology in the study of autism. It focuses particularly on devices and methods that directly interface with patients and the technological approaches for evaluating different theories in autistic development. Emphasis is also placed on current developments, with previous approaches serving as examples of more or less successful strategies for coping with autism through technology.”

<http://www.cs.cmu.edu/~pmichel/publications/AutismTechnology.pdf>

- **All views welcomed here!** by **JoanneCafiero** on Oct 07, 2007
I am looking forward to communicating online with AAC and Autism practitioners over the next few weeks.
Welcome!

- **Welcome** by **Jackie Hess [SI Faculty]** on Oct 07, 2007
Welcome to Day One of the Family Center on Technology and Disability's Online Institute on Assistive Technology. We have all the makings of a great experience: close to 750 registered participants, a faculty of knowledgeable AT experts, and two important topics - AT and Autism, and AT and Transition. I hope you'll take full advantage of the Institute, by posing questions, sharing stories, and reviewing the resources that are provided. Again, welcome!
 - **Re: Welcome** by **kurianm@elmbrookschoools.org** on Oct 08, 2007
Hi. I am a Speech Pathologist working primarily with students at the early childhood level. I have had many students with autism over the past 20+ years; and know that I need to look at every new child with his/her own unique gifts and needs. I am happy to be a participant in this Institute and learn from all of you!
 - **Re: Welcome** by **Carol Leynse Harpold** on Oct 08, 2007
Hello,
I am an OT and AT Coordinator as mentioned in the Transition topic. Providing services to students preschool to 12th grade gives me a wide range of experiences and students, including students on the autism spectrum. I am always interested learning about any new kind of AT supports used for students with Autism that can help our students and staff in improving their education and functional abilities.
 - **Re: Welcome** by **angela bennett** on Oct 10, 2007
Hello, I am an Early Childhood Special Education teacher and I have a wide range of students that i work with on a daily basis. I am very interested in learning about technology that will help our students reach their full potential.
 - **Re: Welcome** by **Donna Mich** on Oct 09, 2007
I teach a non-categorical preschool handicapped class in a public school. This year I have been presented with 3 moderate to severe autistic children who are non verbal and non-compliant. This is indeed a challenge. These children are young and have not acquired any communication system except screaming. Currently they are not attending to pictures or picture symbols, therefore, my first priority is to create a communication system they will use and that will be effective and efficient. I am looking forward to learning about various assistive technologies in hopes one will fit one or more of these children.
 - **Re: Welcome** by **allison** on Oct 09, 2007
I am the AT manager for my school district. I appreciate any help and am happy this discussion is available.
 - **Re: Welcome** by **kcordle** on Oct 10, 2007
Hello, I am a Special Education teacher. I have worked with several children with Autism the past 5 years, grades K-3. I have used AT in one form or another with all my students. Last year we started an AT team and we are only in the beginning phases of developing a plan. I am always willing to learn new things and I am hoping to gain a lot of knowledge from everyone.

- **Re: Welcome** by **kellyedale@yahoo.com** on Oct 10, 2007
Hello. I am a School Psychologist currently working with elementary school aged children. With only 3 years of experience, I have worked with numerous students with autism and asperger's. I am looking forward to participating in the discussions and learning from you all.
- **Re: Welcome** by **pmcclure** on Oct 11, 2007
I am looking forward to collaborating with colleagues across the nation. What an awesome opportunity.
 - **Re: Welcome** by **Susanne Cross** on Oct 16, 2007
I am also looking forward to collaborating with colleagues. This should prove to be an experience of teachable moment after moment.
- **Re: Welcome** by **Anita Swan** on Oct 18, 2007
Hi Everyone: I'm sorry that I am just joining the "family." I had computer problems, and have purchased a new computer.
I am the Parent Educator for a Parent Resource Center in a school division. Most importantly, I am the mother of a wonderful young man who has Autism. I look forward to learning everything that I can learn during these discussions. My desire is to share my experiences, education, and resources with families and other educators in order to help our children to be the very best that they can be.
I thank all of you in advance for allowing me to be a part of this wonderful group. If I am silent (not posting), please know that I am reading everything, taking notes, and making plans to share the wealth of information that I am receiving.

- **Welcome Participants!** by **JoanneCafiero** on Oct 07, 2007
I am very excited to have the opportunity to be part of this very important dialogue with AT and Autism practitioners around the country and even the world. I strongly believe that we are on the verge of discovering new and groundbreaking information about the nature of ASD and how AAC can dramatically impact the lives of people on the Autism Spectrum. I welcome all input and in particular what is controversial and cutting edge. This is the venue for discussing differences in opinions and perspectives. That is how we will all learn and grow.
 - **Re: Welcome Participants!** by **Maria Rivera** on Oct 08, 2007
Hello! I hope to learn about how AT can help me in my work as a psychologist. I work with some boys who have autism and their parents. We share information and experiences all the time. I want to learn because I want to help.
 - **Re: Welcome Participants!** by **Sandra Callahan** on Oct 08, 2007
Hi All - I provide OT services to a Transition Program and am also on my district AT team. I have many students on the spectrum in the Transition program and struggle to develop work and community skills so that they can be as successful as possible upon leaving the school system (and ALL the support!)
I look forward to giving and gaining information! - Sandra
 - **Re: Welcome Participants!** by **teresapinder@yahoo.com** on Oct 08, 2007
I too am an OT and will be at CTG. I have worked with students on the spectrum for many years.
 - **Re: Welcome Participants!** by **Brenda Scott** on Oct 21, 2007
Hello, I have been reading the discussions but had not had time to post until now. I am both a psychologist and assistive technology practitioner (ATP from RESNA) and work in a school system very closely with our AU, MR, and DD specialists. I have witnessed first hand how AAC (both aided and non-aided) can improve the lives of both AU and MR children.

- **Hello** by **Carol Allen** on Oct 08, 2007

I am Carol Allen. I have not had much experience with Autism. My interest is with students at the community college and employees in the workplace. I also have an interest in helping children, especially at my local church. We have several children with special needs who attend our outreach program.

I am currently enrolled in an AT Certificate class at ECU. I am truly amazed at the technology. Years ago I was an elementary EC teacher.

I look forward to learning from each of you. - Carol

- **Re: Hello** by **amber** on Oct 11, 2007

Hi Carol, I am Amber. I have not had much experience with Autism. I did take the ABA training offered locally but because I was not exposed to this population very much I'm afraid I forgot much of the material. I teach high school emotionally disabled students. We currently have an autistic student as well as one with aspergers. They are both high functioning. What does the EC stand for?

- **Greetings** by **janet** on Oct 08, 2007

I am an AT specialist in an AT preview & demonstration center (California) and also work closely with school districts through trainings, consults, staff development, etc. Our center serves all disabilities but the majority of our clients are somewhere on the autistic spectrum. My professional focus is also driven by my personal circumstance as I have a 17 yr old son with autism who has served as my "guinea pig" while researching different technology. I am always excited to learn about new and promising options for our kids and I look forward to hearing about what's going on where you live.

- **Re: Greetings** by **Catherine Molano** on Oct 09, 2007

My two children have special needs. I am a very different educator now than I was before we discovered their medical problems. I get to be the parent at the 504 and IEP meetings. I am the parent going into the school asking for accommodations and expecting support from school staff. It sure changed how I look at parents coming to me asking for accommodations and support.

- **Re: Greetings** by **susan powers** on Oct 09, 2007

We have several staff members who have special needs children so we always keep in mind how they would feel when attending and conducting an IEP meeting. I think that it is very important to keep in mind when we are working with our families. I agree!

- **Re: Greetings** by **teresapinder@yahoo.com** on Oct 14, 2007

I too get to sit on "both sides of the table." My boys have taught me so much about the daily struggle families with a special needs child-whether hidden or visible-have to deal with. It has made me a better mom, therapist and advocate for students and families.
teresa

- **Re: Greetings** by **pams** on Oct 15, 2007

I too have a son with special needs. He has taught me so much about how to advocate for programs and accommodations that eventually enabled him to graduate from HS. Being on both sides of the IEP table has made me a better teacher, who now advocates for all of my students and even those who are not necessarily in my class any longer. So many parents don't fully understand what their rights are and

what types of accommodations or modifications are available for their child. Every time I have the opportunity to help open a door I think of my own battles.

- **Hi !!** by **teresapinder@yahoo.com** on Oct 08, 2007

I was thankful the list for the Autism side was not as long as the Transition side!! My introduction is on the Transition side. I will look into the PDA symbol question, seems I saw something along those lines while looking for something else! If not CTG is just around the corner and I I will keep my eyes open and ask there.

- by **Sara Mobley** on Oct 08, 2007

I must say that I am impressed that there is a discussion strictly on autism and AT. I am a special education inclusion teacher. I do not currently have any students with autism, but I have worked with several people with autism in the past. It is amazing how much AT has helped the people I have worked with. I am going to enjoy learning even more from all of you caring people!

- **From JCriger** by **Jackie Hess [SI Faculty]** on Oct 08, 2007

Here's another cross post, from the transition strand. It's interesting how many people wind up as AT Specialists because "no one else knew what it was" or something along those lines. I'll bet many of you have a similar story.

My journey to this point has been circuitous, but always in education. I have taught general ed pre-k, k, 2, 3, and 4. Then SpEd K-6, and as a member of the district's behavioral intervention team member k-12. Back to GenEd helping teachers integrate technology and the Internet into their everyday curriculum. Now as an AT facilitator...a position I got because no one knew what it was, but I had such a varied history, admin thought I could do it. (I disagreed at the time, but am glad they held their ground. I love this field!)

The district I work in currently has a large population of students on the Spectrum. I'm always looking for technology they'll find helpful enough to bother with. (And, I'm *constantly* searching for ideas that help the staff 'get the picture' and want to learn more in order to support our learners.)

Looking forward to meeting and learning from all of you,

Jacquie

- **Re: From JCriger** by **JoanneCafiero** on Oct 08, 2007

I think that the bottom line in implementing visual supports is providing consistent ongoing input, receptive language input for these people so that they can begin to build a language base or have the "hooks" with which to attach concepts.

- **Re: From JCriger** by **kellyedale@yahoo.com** on Oct 10, 2007

I agree-- the key word is "consistent". I have seen some programs fail because of the lack of consistency. If you are interested in some programs, there is an excellent autism summer program at Martinsville, IN. If you contact the special education director and ask for the autism specialist, they can lead you to the right person.

- **Innovative Technologies for Persons on the Autism Spectrum** by **Matthew Goodwin** on Oct 08, 2007

I look forward to discussing autism and technology with you all over the next couple of weeks. The following is just one example of the kinds of innovations we can look forward to in this area:

The series premier of Wired Science (<http://www.pbs.org/kcet/wiredscience/>) recently aired on PBS, and featured coverage of the research I'm involved in at the Groden Center (<http://grodencenter.org/>), in collaboration with computer scientists at the Massachusetts Institute of Technology Media Lab (<http://www.media.mit.edu/>), developing wearable cameras and facial recognition systems to aid persons on the autism spectrum. This segment of the program can be found at:

http://www.pbs.org/kcet/wiredscience/video/100-face_reader_video_.html

Be happy to hear your thoughts.

- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **Joanne Cafiero** on Oct 08, 2007

Hi Matthew

I am looking forward to checking out these links. There is so much more to learn!

- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **Matthew Goodwin** on Oct 09, 2007

Excellent. I look forward to hearing what you think!

- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **Pat Sitter** on Oct 08, 2007

Hi Matthew,

I really enjoyed viewing these links. The Groden Center sounds like a remarkable place with so many different programs for individuals with Autism. The face reader sounds like a good place to start to teach individuals with Autism to recognize facial communication. How successful have the individuals shown in the video been in improving their awareness of facial expressions in real life situations?

Pat Sitter

- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **Matthew Goodwin** on Oct 09, 2007

We're really only in the beginning stages of this research, so I can't say empirically how well face learning has generalized with this group. However, in the pilot studies we've run thus far, I've noticed our kids are enthusiastic about making and viewing videos of themselves, their peers, and caregivers; and attend to a wide range of facial features. One of our primary research questions, which you've essentially asked, is whether or not this interest will transfer to real-time situations outside of our sessions. We certainly hope so!

- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **angela bennett** on Oct 10, 2007

Matthew, I really enjoyed the video. I have worked with children with Autism. The face reader sounds like a great tool to have if it helps the individuals improve their facial awareness. How effective is it? How often is it used and on what ages of children?

- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **Matthew Goodwin** on Oct 10, 2007

A few of you have asked about the age range of children we are working with to develop the face reader technology. Currently, we're including children between 13-18 yrs. However, this group represents a convenience sample of kids we have daily interactions with. As we continue to develop the technology, we will include children as young as 5 or 6 yrs and as old as adulthood.

- o **Re: Innovative Technologies for Persons on the Autism Spectrum** by **ct76** on Oct 08, 2007

Thank you for the websites. I work with students who are on the spectrum (anywhere from self contained to fully included). I have one student who needs help with his writing skills and has developed a phobia of handwriting or typing. Any suggestions?

- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **Anne Z** on Oct 09, 2007
I don't know the age of the child you are working with or how verbal he/she is, but I have had success with students 5th grade and older who have Aspergers. Dragon Naturally Speaking Preferred vs. 9 has worked well in a school setting.
- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **janet** on Oct 11, 2007
How about magnetized letters or rubber stamps? Magnetized word bank? On-screen keyboard such as Click n Type - www.lakefolks.org - or Clicker 5 software www.cricksoft.com - he would only have to click the mouse and not keyboard in order to construct sentences. Does he also have a phobia about drawing pictures? I wonder if the phobia is due to the physical act of writing or perhaps a fear of failure... Will he use a pencil for anything? If he is a fairly fluent speaker, voice recognition may work - have heard some good things about Speak Q for the younger kids. www.wordq.com
- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **pmcclure** on Oct 11, 2007
How about a voice activated word processing program? They are available fairly cheap at various stores like Best Buy, Staples, Office Depot.
- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **Brian Wojcik** on Oct 11, 2007
Many people do not realize that if they are running Microsoft Word XP or better, speech recognition is built into the program. It is a great way to explore the feasibility of speech recognition as an option. I am a HUGE proponent of implementing trials to determine the efficacy of a tool before funds are expended on that tool.

Another tool that has been really gaining favor is SpeakQ (<http://www.wordq.com/speakqenglish.html>), which is a speech recognition add-on for a word prediction tool called WordQ. There are a number of nice features in SpeakQ. For example, (and this is perhaps my favorite feature), all speech recognition programs need be trained by the user (though dragon naturally speaking version 9 is the most compatible without training). Typically, the program provides the user with some text to read. The difficulty often is that the text is at a greater readability than what the student has mastered (there are ways to deal with this though). SpeakQ, in contrast, allows a teacher to define the 'training text', thereby making it at a level that the student can read independently.

- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **damaelisa** on Oct 08, 2007
I am fascinated with the video. The face expression is one of the important parts of the communication. And this is one of the great difficulties in these children.
- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **jennydelvalle** on Oct 09, 2007
I am Jennifer Del Valle; I work as a Clinical Psychologist in PR. I am glad to be in this forum. Also I am new to this type of interaction, so I hope I can do it as is supposed to be! As the mother of a kid with PDD it is my pleasure to see so many professionals dedicated to helping our child. As a Professional I would like to increase my knowledge to help my clients. Thanks for this effort.

I feel so happy with the face expression program. That is the most difficult part in the socialization. It is wonderful to know how the technology is becoming part of the solution!!! I hope that type of technology can be used soon. I wonder how old are they?
- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **pmcclure** on Oct 11, 2007
I have toyed a bit with using a video camera within my classroom and within the community to teach certain social skills. I am dealing with students with mild disabilities and autism. Teaching appropriate behaviors for teens in the social world is one of my primary goals. I have found this approach to be most effective and would like to further expand the use of technology. We use it to capture others with appropriate behaviors/responses as well as showing our students how they are being perceived. Any suggestions?
- **Re: Innovative Technologies for Persons on the Autism Spectrum** by **rtaylor** on Oct 15, 2007
Wow! Now if the video reader could incorporate intonation too.
 - **Re: Innovative Technologies for Persons on the Autism Spectrum** by **joanne cafiere** on Oct 22, 2007
I'm not sure if this was mentioned or not, but it is important when using video or photographs for modeling specific routines or behaviors, that the appropriate behaviors are highlighted rather than the inappropriate ones.
In fact I am working with a new teacher of children with ASD. I have videotaped her group instruction and edited out anything that was less than effective and left in her "shining moments". It's amazing how all of us will repeat a positive behavior when we can see the results and are reinforced by our own successes. This is the same for kids and adults in the spectrum.

- **AT and Autism** by **Laura C** on Oct 08, 2007
I will begin serving as an AT resource person for a separate day school for students with multi-disabilities. In the past, the school faculty and staff have used a "try it and see if it works" model. I am beginning to work with them on a more formal approach to making AT decisions. Any suggestions as to how to help them see the value in assessing before purchasing. Of course, their current approach has led to an overwhelming amount of AT abandonment.
 - **Re: AT and Autism** by **teresapinder@yahoo.com** on Oct 08, 2007
Abandonment is EXPENSIVE!!! A slow steady data driven course is more cost effective! The SETT framework is another resource, but breaking old habits tends to be hard to do, except when the money run out!!!
 - **Re: AT and Autism** by **susan powers** on Oct 09, 2007
We have used the Sett framework where we work and it seems to be a good

framework to start as well. There is just some much out there it is hard to know where to start and how to begin. And who is going to do it. We do not have an AT person, it is all of us trying to come up with what works best for each student. That can be hard at times.

- **SETT Framework by Jackie Hess [SI Faculty]** on Oct 09, 2007
For those unfamiliar with the SETT Framework, I thought I would post a piece of Joy Zabala's "expert perspective" (she developed the SETT Framework) from the online discussion she moderated for the Family Center. If you're interested in reading more, you can access the FCTD's discussion archive. You can also, of course, visit Zoy's website.

The SETT Framework is an organizational tool to help collaborative teams create Student-centered, Environmentally useful, and Tasks-focused Tool systems that foster the educational success of students with disabilities. The SETT Framework is built on the premise that in order to develop an appropriate system of assistive technology devices and services, teams must first gather information about the student, the customary environments in which the students spend their time, and the tasks that are required for the students to be active participants in the teaching/learning processes that lead to educational success. It is believed that the elements of the SETT Framework, with minor adjustments, can also be applied to non-educational environments and service plans.

Critical Elements of the SETT Framework

- Collaboration
- Communication
- Multiple Perspectives
- Pertinent information
- Shared Knowledge
- Flexibility
- On-going Processes

It must be remembered that SETT is a framework, not a protocol. The questions under each section of the SETT Framework are expected to guide discussion rather than be complete and comprehensive in and of themselves. As each of these questions is explored, it is likely that many other questions will arise. The team continues the exploration until there is consensus that there is enough shared knowledge to make an informed, reasonable decision that can be supported by data.

The Student

- What is the functional area(s) of concern? What does the student need to be able to do that is difficult or impossible to do independently at this time?
- Special needs (related to area of concern)
- Current abilities (related to area of concern)

The Environments

- Arrangement (instructional, physical)
- Support (available to both the student and the staff)
- Materials and Equipment (commonly used by others in the environments)
- Access Issues (technological, physical, instructional)
- Attitudes and Expectations (staff, family, others)

The Tasks

- What SPECIFIC tasks occur in the student's natural environments that enable progress toward mastery of IEP goals and objectives?
- What SPECIFIC tasks are required for active involvement in identified environments? (related to communication, instruction, participation,

productivity, environmental control)

The Tools

In the SETT Framework, Tools include devices, services and strategies... everything that is needed to help the student succeed. Analyze the information gather on the Student, the Environments, and the Tasks to address the following questions and activities.

- Is it expected that the student will not be able to make reasonable progress toward educational goals without assistive technology devices and services?
- If yes, describe what a useful system of assistive technology devices and services for the student would be like.
- Brainstorm Tools that could be included in a system that addresses student needs.
- Select the most promising Tools to implement in the natural environments on a trial basis.
- Plan the specifics of the implementation (expected changes, when/how tools will be used, cues, etc.)
- Collect data on effectiveness.

It is expected that the SETT Framework will be useful during all phases of assistive technology service delivery.

With that in mind, it is important to revisit the SETT Framework information periodically to determine if the information that is guiding decision-making and implementation is accurate, up to date, and clearly reflects the shared knowledge of all involved.

- **Re: SETT Framework** by **JoanneCafiero** on Oct 09, 2007
Thanks for posting that. Now all participants will have access to the real deal!
 - **Re: SETT Framework** by **angela bennett** on Oct 10, 2007
Thank you for the information. I am new to the field education and alot of the terms and phrases that veteran teachers use I am unaware of.
- **Re: AT and Autism** by **Kim Haynes** on Oct 08, 2007
When I complete AT evals I name features needed such as static displays, direct selection, X-locations, a device with levels, etc. That way if the staff/parents would like to participate in the selection process I go over device choices that would meet the student's needs. This way if they have input they are more likely to use the devices.

The next step is education, education, education. So often I walk into a situation and am told the child has a device but doesn't like it. When asked to show me how they use the device with the child, I often witness the teacher saying show me yes, show me bathroom, show me book, etc. As you know this is not communication, rather an identification task.

I then show the teacher how to use the device functionally during classroom and literacy situations. When they see a child begin to respond and use the device, I have them hooked.

This may be more than you asked for, sorry....

- **Re: AT and Autism** by **Catherine Molano** on Oct 09, 2007
I am trained as a regular and special educator and a school psychologist. Educating teachers in a way that says you respect them and want to help them be more successful is one of the most important jobs an administrator at any level can accomplish. We can spend all the money we have. We can have the very best materials and technology. It means nothing unless the teacher buys into the process

and feels empowered.

It sounds like you are right on target.

- **Re: AT and Autism** by **shari** on Oct 12, 2007
I hope this is the right place to drop this in. I'm an OT in a school-system, have worked with all ages & most dx's. I had the opportunity to work closely w/ ST's during my tenure. One of the most successful ways we developed to help teachers and TA's 'get it' was to run groups in their classrooms. I like literacy based activities as it helps with making things meaningful as well as introducing staff to the idea that everyone can be involved in literacy. The ST would read a book or poem & my job was to manage the relevant picture symbols, switches, toys, stuffed animals related to our book. We then did a related activity, again using the picture symbols and switches to enable everyone to participate. When we cooked, I put together picture symbol directions. The kids with ASD tended to respond very well to this sort of activity. Most importantly, the staff saw it work and bought into a whole different level of interacting with the kids.
 - **Re: AT and Autism** by **kelkamp** on Oct 16, 2007
I've had success with this kind of thing, too. And...it not only promotes early literacy and success for all types of students...it makes planning a LOT easier on the teachers/staff as well...since all of the activities relate to the book and to the same vocabulary...and therefore to the same language/topic boards/programming in devices, etc!
- **Re: AT and Autism** by **JoanneCafiero** on Oct 08, 2007
Assessment is so important, but I think that any tool that is interpreted in a way that excludes kids from AAC is a mistake. I think in light of the new information on autism and IQ, we all need to assume that each and every individual with ASD has the potential to be a better communicator. Social Networks, The Participation Plan and SETT are assessments I like to use because they look at what specifically is needed for an individual to be active and participating within that environment and with those communication partners, rather than what a student can and can not do.
 - **Re: AT and Autism** by **teresapinder@yahoo.com** on Oct 09, 2007
I agree that it makes a difference if during the assessment process if you are looking for function across environments and what is needed for success and access rather than what can the student do/not do.
teresa
- **Re: AT and Autism** by **CScott** on Oct 08, 2007
Our school district uses a form developed by WATI to assess need, determine best input modality, and factor in a number of variables such as motor capability, cognitive ability and other such factors. It provides a consistent way of identifying student AAC needs, which then is the basis for equipment trials. I notice that the WATI is provided as a resource reference in our packet - Wisconsin Assistive Technology Initiative: http://www.ideal-group.org/initiatives/access-tomorrow/at_transition_packet.pdf
 - **Re: AT and Autism** by **Laura C** on Oct 08, 2007
Thanks for this resource. I will take a look at it. It is not so much presenting a model for them but finding a way to convince them to use it!
 - **Re: AT and Autism** by **Linda Welk** on Oct 08, 2007
Thanks for the website info but I couldn't get it to open (page not available) but I will try again tomorrow. Am very interested in reading more about WATI.

- **Re: AT and Autism by Brenda Scott** on Oct 21, 2007
Our district uses the WATI forms and resources; we stumbled onto them about 5 years ago and have not let go since! They are wonderful (and some are free!). Even the resources that we have ordered and paid money for have been fairly inexpensive and are always good. They help us organize our referral and assist us in doing a good assessment and collecting the right data.
- **Re: AT and Autism by LeanneGrillot** on Oct 08, 2007
<http://www.wati.org/products/freematerials.html>

hope this link works for you! It takes you to the free materials available. Your district could, of course, buy the whole program if they seem to have money to burn. It would be money well spent and could end up saving the district a bunch in the long run.
- **Re: AT and Autism by sarahj** on Oct 09, 2007
It might be a great help if somebody who is conducting the AT assessments could obtain assistive technology practitioner certification through RESNA. The training and study involved could really improve your school's ability to meet the individuals' needs more accurately.
 - **Re: AT and Autism by pmills** on Oct 10, 2007
How timely! I just saw the face reader video and how exciting! I am an APE teacher in Ohio and work with predominantly children on the autism spectrum. One little guy has become obsessed with looking at himself on the computer! What a great time to work on emotions and helping him read himself and others. This is so cool. How do I use this concept now??

On another note, one thing that I have done is make up PECs folders for PE teachers to keep in the gym so that each child who attends regular PE class can have visuals of what is happening. First, Then, is very good in helping them transition from one activity to the next. There are usually a lot of transitions in PE as well as less structure. Both make life more difficult for children with autism. The paraprofessionals who come to PE with our more severe population use this folder and can set up the icons as instructions are given so students can be prepared. It is also instructional for our PE teachers in that it helps them be more a part of "team" efforts to teach our children rather than just leaving them to the specialists because they feel they don't know what to do.
 - **Re: AT and Autism by Brian Wojcik** on Oct 11, 2007
I have spent many hours making PECS Boards/Books and other visual strategies. I have recently become acquainted with a company called Augmentative Resources (<http://www.augresources.com/>). They have many low-tech, ready to use materials that can be used for communication, literacy and visual strategies. It has given me more time to focus on the student's actual program by freeing up my time that used to be consumed with so much material creation. Just a thought...
- **Re: AT and Autism by Bridget Ames** on Oct 13, 2007
One of the ways our district dealt with abandonment was at the administrative level. When purchase orders came in and it was related to assistive technology they learned to ask about the trial or process that led the teacher or team to the decision about purchasing that particular tool or software. If there was no process or justification the administrators asked them to go through a process to help them make better decisions. They generally also suggested consulting with the district AT team to explore all their options. Often times we knew about resources both low and high tech that might make a difference. Having the administrators involved in the process reduced AT abandonment. It was initially frustrating to teachers but over time I believe they have found the process to be very valuable.

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- **Autism/Profound MR and Communication** by **Joel Leckie** on Oct 08, 2007
I am a special ed teacher (PMD/Autism) for a middle school. Is there any assessment available for special ed teachers to better assess the receptive vocabulary of my students as well as the best way to approach communication with them. My students are diagnosed as both. I look forward to hearing your responses.
 - **Re: Autism/Profound MR and Communication** by **JoanneCafiero** on Oct 08, 2007
Hi Joel,
That indeed is a challenge! Visually based cognitive assessments, rather than language based assessments can give us a better handle on a person's cognitive potential. I have seen psychologists adapt standard tests, in particular, adapt for easier access. When this is done there was reported a significant increase in scores. Of course this has not been an empirically validated instrument. It shows how far we need to go.
 - **Re: Autism/Profound MR and Communication** by **Catherine Molano** on Oct 09, 2007
As a school psychologist, I'd like to address the adaptation of standard tests. We call it "testing the limits." Generally, we give the test using standard protocol to get the normed score. Then we extend or adapt the test to see what the child can accomplish when we make the test more accessible. Both scores should be reported with a detailed explanation of the limits testing. This way we get the score required by the state and the teacher and staff get the information on strengths and weaknesses to assist with curriculum planning and implementation.
 - **Re: Autism/Profound MR and Communication** by **JoanneCafiero** on Oct 09, 2007
Thank you Catherine. That's very helpful.
 - **Re: Autism/Profound MR and Communication** by **faithp** on Oct 18, 2007
One recent resource I have purchased is Assessing and Developing Communication and Thinking Skills in People with Autism and Communication Difficulties. This resource is a checklist type of assessment completed by those familiar with the child. It can help assess the level the child is currently functioning and give direction to the communication/academic program. I bought it on Amazon for about \$35.00
 - **Re: Autism/Profound MR and Communication** by **Anita Swan** on Oct 18, 2007
Thanks Faithp.
I am going to purchase this for our Resource Center for our teachers to use. This sounds like an assessment tool that parents could benefit from by answering the questions also. Who is more familiar with the child than his/her parents (smile).
Thanks again for the resource information.
 - **Re: Autism/Profound MR and Communication** by **Brenda Scott** on Oct 21, 2007
There are some "visually based" cognitive assessments, such as the Universal Nonverbal Intelligence Test (UNIT) that psychologists give. Most of the subtests are truly not language mediated, and that is really good when you are evaluating students with poor or no language.
 - **Re: Autism/Profound MR and Communication** by **kelkamp** on Oct 09, 2007
I worked for a self-contained school for several years which housed a large population of PMD/AU students. From my experience the scores from standardized tests were rarely useful for these students as they often scored below the basal level...and this is if they

could even participate in testing AT ALL! Therefore I relied on curriculum-based assessments as the previous poster described. I used quite a bit of symbol-based communication boards and would often assess vocabulary based on the students' abilities to express and identify vocabulary from monthly units.

Kelly

- o **Re: Autism/Profound MR and Communication** by **Elisa Wern** on Oct 09, 2007

Joel,

We have had some luck with good curriculum based measurement - CBM. Really looking at assessment data based on the curriculum you are using. That of course assumes that the curriculum you have in place in your classrooms is good research based stuff. Have you seen the Meville to Weville series by Ablenet, or the Four Blocks work by Erickson and Koppenhaver (adapted based on the original work by Cunningham)...we are really looking at starting with a curriculum that is research based, and then assessing our students' progress from within that curriculum...since there aren't a lot of assessments from a psychometric level that really give us good information about our students with autism, CBM is really what gives us instructional data to serve our students. It also really assists our teachers in planning their instruction...

- **Re: Autism/Profound MR and Communication** by **teresapinder@yahoo.com** on Oct 09, 2007

The book by Erikson and Koppenhaver is a great place to get started but, you need a basic understanding of 4-block. A Google search will get you started. I have several teachers using Me-ville to We-ville with your population (K-12th) and they are achieving a foundation in literacy skills. Monitoring progress is built in to the data collection and AT is infused throughout the lessons. Ablenet is slated to introduce an "older" version of Me-ville to Weville at CTG.

teresa

- o **Re: Autism/Profound MR and Communication** by **Mary** on Oct 12, 2007

Our district has begun to use the STAR Program which is a curriculum which includes discrete trial, pivotal response, and teaching functional routines. It has a student profile which helps to figure out where to start. Has anyone else used this curriculum?

- **Re: Autism/Profound MR and Communication** by **Connie Pazderski** on Oct 14, 2007

Thank you for information about the STAR Program. If it is really a peer reviewed, empirically validated program it seems as if it could be an effective program model to implement for students with severe disabilities. After reading about this program on the internet, I drew the conclusion that it may be somewhat similar to the TEACCH model out of UNC, but with an emphasis on ABA. TEACCH is a useful model which focuses on using the child's interests to motivate the child, and developing life skills/functional routines. The TEACCH model provided a successful framework for developing and structuring my preschool autism program through the use of visual schedules and one-to-one instruction. However, the STAR Program seems very interesting because it incorporates (as I have gleaned from a quick visit to the STAR website) ABA, discrete trial, pivotal response, and teaching functional routines as you have also noted. I too am interested in the success of the STAR curriculum for PMD students as well as students with autism and wonder if anyone else has had experience with the STAR curriculum.

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- **Hello** by **MarciaJ** on Oct 08, 2007

I have already posted a way too long intro on the Transition thread. For many years I worked primarily in the field of ECSE (over 25), during that time frame many of the children I worked with had diagnoses of Autism, PDD-NOS, Asperger's, ASD, Hyperlexia etc. I fully appreciated Joanne's introductory comments that each child manifests very individual strengths and needs that will

respond to individualized methodologies and that there is no "rubber stamp" "one size fits all" solution. As occurring nationwide, Northeast Iowa is experiencing a substantial increase in the number of students diagnosed as being on the spectrum with the full range of abilities. I am extremely interested in learning more about what technologies are available for the students, families and professionals I collaborate with.

- o **Re: Hello** by **JoanneCafiero** on Oct 08, 2007

Hi Marcia

I guess I can't overemphasize the importance of looking at each child/student as an individual and as an individual with potential. If any of you have read the journal review on Autism and Mental Retardation by Marian Edelson (Focus on Autism, 2006), it is clear that the field of autism practice has perpetuated (over the past 60 years) the idea that 70-80% of people with ASD are also cognitively disabled. We know now there is nothing to substantiate those large numbers (which are part of the DSM-IV). It may be that it has become part of our mindset as autism practitioners, causing us to lower our expectations, provide inadequate curricular adaptations and even worse, give up because we believe there is limited potential to learn and communicate.

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- **Important Dialog** by **Melissa** on Oct 08, 2007

Hello, All! I am looking forward to this important conversation!

These threads will become a significant core of information if we share our observations and experiences freely!

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- **From ML** by **Jackie Hess [SI Faculty]** on Oct 08, 2007

I've copied below a message that was posted on the transition strand. Hopefully, participants will read both strands and cross post whenever they see fit.

Hi, I am a special educator as well as an AT Specialist. AT is so new to our town that it is overwhelming to be called in to do an AT evaluation when you are just given a name and the direction "___ needs an AT eval.". There is no knowledge of referral questions and such - so, I have a lot of leg work to do. However, I'm up for the challenge (with a lot of help along the way!). My first challenge is that we have numerous children on the autism spectrum referred to me to determine how AT can help them access their curriculum in their upper elementary classrooms. Our challenge is the lack of hardware at this time - some classrooms do not have computers in them. Staff also have limited experience with software that is out today - so, my hope through this experience is to narrow down how I can quickly help our staff to begin to incorporate universal design in their classrooms and meet the needs of our children on the autism spectrum. The second part of my hope is I do have a few children on the severe end of autism that need basic recommendations, but again the challenges of limited hardware (computers) and teacher experience are present. Looking forward to this experience! ML

- o **Re: From ML** by **Sandra Callahan** on Oct 08, 2007

Our biggest challenge within our classes has been the switch to OSX from OS9.

There are a few pieces of key software such as Great Action Adventure by Silver Lining Media, that is not available for OSX. I will be attending CTG and hope to find some new software ideas.

Sandra

- **Re: From ML** by **Kim Haynes** on Oct 08, 2007

We just ran into the same problem at one of the centers I work for. We just bought new iMacs. Although we called around software companies and asked if their software was compatible with OSX. Everyone said yes. However none of the software

worked. After further investigation I found out that our new macs were "intel based" and would not run the software we had. Moral to the story - find out if your macs are "intel based" and then ask the software/operating system question.

- **Re: From ML by beames** on Oct 11, 2007
We faced the same challenge when our district made the move to OSX. We learned we were asking the wrong question. We got the same response when we asked if it was compatible with OSX and some programs worked in the classic OS9 platform but not all.

We learned to ask a different question. We asked if a program was "native" to OSX or was the program created with the OSX operating system in mind. It made a world of difference.

- **Re: From ML by Linda Welk** on Oct 08, 2007
OSX, OS9, CTG

Call me stupid - but what are these?

- **Re: From ML by Kim Haynes** on Oct 08, 2007
CTG is the Closing the Gap conference in Minnesota every October

OSX and OS9 are operating systems for the Macintosh computer

- **Re: From ML by Pamela Evans** on Oct 09, 2007
Operating systems that run the computer.

- **Re: From ML by Pamela Evans** on Oct 09, 2007
Sandra,

I guess I am not sure where to start with one of my classrooms. I need to become more familiar with the technology and supports out there so i can support a class I am involved in. The class has students with some significant behavior issues who are not being challenged enough. What are some baseline programs that I could access to begin to introduce ways that I can support the students?

- **Re: From ML by Sandra Callahan** on Oct 09, 2007
Hi Pam,

I would assess the ability and cognitive level of each student and plan accordingly. Do the students demonstrate simple cause and effect skills? Do they have basic computer skills such as attending to the screen? Touch screens assist students who have limited motor ability to use the mouse.

Some of the following software may be a place for you to start:

Stages software provides data keeping and a systematic progression to the next level in skills

<http://www.laureatelearning.com/professionals602/specials/autpack.html>
Several titles to choose from that teach vocabulary, cause and effect, reading comprehension, etc.

Mind Reader Software
www.autismcoach.com

Using the software you can explore over 412 emotions, seeing and hearing each one performed by six different people.

Audio clips are also provided with the chosen emotion being expressed in the

appropriate tone of voice.

Clicker 5 is a great tool to create activities for the classroom. Free downloads of ready made activities from www.learninggrids.com

Picture it from Slater Software www.slatersoftware.com

Boardmaker is a MUST

Picture THIS for Boardmaker : digital pictures of food, household items, community items, etc.

Computers at Work software to practice data entry for a possible vocational task.

Hope this helps!
Sandra

- **Re: From ML by Pamela Evans** on Oct 10, 2007
Thanks I look forward to mapping out the start of using technology in this classroom to increase learning as well as making staff more accountable.
- **Re: From ML by angela bennett** on Oct 10, 2007
Could you explain what OSX, OS9, CTG mean or stand for.

- **autism and AT by pmills** on Oct 08, 2007

I am very excited to learn how AT will improve my work with children with autism in the area of adapted physical education. I teach APE to children in a large district in Dublin, OH.

- o **AT and adapted physical education by Jackie Hess [SI Faculty]** on Oct 08, 2007
Let me suggest that you read the Family Center's July 2007 newsletter which was on AT and adaptive physical education. Here are just a few excerpts from the interview with Dr. Timothy Davis, national chairman of Adapted Physical Education National Standards (APENS):
"We zero in on the ability. We ask, What can we provide, what can we do, to enhance a child's participation with his/her non-disabled peers?" Often an extension is required. "Say we've got a wheelchair user; we're playing a tag game and the child may not be able to propel himself or push herself, so we have a peer assist in that regard, and we use a five or six-foot noodle to allow the child in the chair to tag someone running by. It's such a simple, simple adaptation, but that noodle enables the disabled child to play like any other child. It's the difference between playing and not playing."

To narrow the scope of AT to the communication devices and electronic devices typically found in a special education classroom is wrong, he asserts. "Too often AT is perceived as those devices only. That's not so. All too often what happens before children with disabilities come to physical education, especially the children with severe physical disabilities, is that their supportive equipment is stripped from them. The Big Mac switch is removed, which enabled them to say yes or no or thank you or let's go or whatever we program into it to enable children to express themselves. We pull that technology away for fear of breaking it. Often the PE teacher has no idea what to do with the equipment anyway. "

Adapted physical education teachers take an entirely different approach, he says. "Instead of stopping the whole class to work with one child, we can engage this child with severe and

profound disabilities in a general education environment and make that environment the least restrictive. AT enables us to achieve that result."

You can read the rest of the interview and the related resources at <http://www.fctd.info/resources/newsletters/index.php> (I've provided this link so that you can choose either the PDF version with graphics or the html version.)

- **Re: autism and AT (APE) by Kim Haynes** on Oct 08, 2007
In the past I have worked closely with the APE teachers. One of my favorite games is twister. Instead of the traditional twister board I use several pieces of posterboard laid out on the gym floor or outside. Sometimes I use peer helpers to move the wheelchairs other times I am the peer helper. I also give the children broom handles with the large foam number one fingers (from football games). My three choices are move your chair to x color, place your right hand on x color or place your left hand on x color. I have one child who is responsible for the spinner (I use the All-Turn-It spinner from Ablenet - however in the past when money was tight I made one with a fan from the dollar store). Another child is the "caller". This child is responsible for telling the other children what the spinner landed on using their communication device (i.e. left hand on red). The other children move about the posterboard. Everyone eventually gets a turn being the "spinner" and the "caller". This is also an excellent opportunity to teach left/right and color concepts.
 - **Re: autism and AT (APE) by Catherine Molano** on Oct 09, 2007
Sounds like fun. Learning and practice in a game. I like that. I bet your kids do as well.
- **Re: autism and AT by Donna Mich** on Oct 09, 2007
I logged in on the transition side so I will also post to the autism side as this is where I want to vest my time since I have a non-categorical preschool handicapped class. I have been presented with 3 moderate to severe autistic children who have not acquired a communication system except for screaming. This is a challenge indeed as they attend with other less serious handicaps such as OHI and developmental delays. Therefore, my priority is to create a communication system that they will use and that will be effective and efficient. I realize that not all systems will work with all the autistic children I serve but if at least 1 or 2 can begin to communicate in some way it will allow more time and energy to explore other AT ideas for the child(ren) who continue to have no communication.
 - **Re: autism and AT by JoanneCafiero** on Oct 09, 2007
I have some strong opinions about that; thanks for giving me the entree to speak my mind. First it is difficult to tell how long to do an AAC intervention for kids with ASD before you give up. These people are complicated and I know of at least 2 children who required several years of aided language input before they generated any output. In addition, new things, whether activities, communication boards, etc. are aversive to people with autism. Don't give up. Use visual language systems, provide aided language input by pointing to symbols while saying the words.

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- **Re: From ML by Susan Powers** on Oct 08, 2007
Hi

I am new at this type of interaction so I hope that this goes where it is supposed to be! Regarding the above challenge, in our district, too, there are limitations in access to computers etc. so I just start with the basics. Visual pictures for a daily schedule and transitions. Or for "first and then" for the daily routines. There are the few programs like Boardmaker for pictures and symbols to use. It is easy to assist those students with ASD with a few pictures and symbols to hold and place into a "done" box to help them move through an activity. It is a place to start at least.

- **Re: From ML by teresapinder@yahoo.com** on Oct 08, 2007
Just spent today doing just that- starting/modeling a classroom with 6 of 9 students classified as ASD with the basics. Schedules and "this/then" was as much as the staff could deal with for now. Small consistent steps seems to make the most progress for staff and students.
 - **Re: From ML by Elisa Wern** on Oct 08, 2007
I agree with Teresa (hi there by the way, from just up the highway...), and that for our students with autism a couple of things that have worked really well Re: first/then supports, using a consistent picture schedule or day planner depending on the level of the student's cognitive awareness. Often times the teachers need lots of support and modeling in how to incorporate these strategies into their instructional day.
- **Re: From ML by JoanneCafiero** on Oct 08, 2007
Yes, I can't imagine life without Boardmaker. Some teachers are now downloading images from Google Images and this strategy seems to be working well; kids like them and seem to "get" what they are.
 - **Re: From ML by shari** on Oct 12, 2007
Hi, I'm an OT working in a school system & not surprisingly, there are limited resources for software, etc. At my old job, I had access to the new Boardmaker & loved it. I need to make picture symbols for the equipment and work sequences in my room, so I can model their effectiveness for my classrooms. I looked at Google Images & was totally over-whelmed. Can someone dumb it down for me or has other suggestions for a Boardmaker-less OT? Thanks! Shari
 - **Re: From ML by teresapinder@yahoo.com** on Oct 17, 2007
Hi, Shari, for a quick way to make supports- if you have access to a digital camera and Powerpoint, you can take pictures you want, put them into PowerPoint slides, add text boxes if needed, then print in "handout" with six "slides" to a page. This may be more support than your students need and if you are needing more abstract symbols this might not be the answer, but maybe.....
teresa
 - **Re: From ML by mjbmillersbcglobal.net** on Oct 17, 2007
That is a terrific idea! I use power point for other applications, don't know why this had not occurred to me. Thanks for sharing.
 - **Re: From ML by Annie Czapp** on Oct 17, 2007
Interactive whiteboards are becoming very prevalent in the classrooms - and the software for these boards are also very useful. You can download free software at <http://www2.smarttech.com/st/en-US/Support/Downloads/default.htm> Under SmartBoard Software, click your operating system and then download the Essentials for Educators. They have a wonderful variety of pictures that are good for students and very applicable in the classroom. They have pictures for every subject as well as for things you see in everyday life. It may help consolidate the overwhelming results from Google Images.

Also, on a different subject, if you do have access to an interactive whiteboard in your classroom, it is an excellent tool to use. You can project the Internet or any computer document up on a huge platform for students to interact with. You can also make specialized lessons using the interactive tools available from this download.

- **Re: From ML by tersainder@yahoo.com** on Oct 19, 2007
A really good pic. site is [WWW.picsearch.com](http://www.picsearch.com). you type in the category and you get lots of pics. just right click and save image, rename and send to a folder on your desktop. Fast way to collect pics. for visuals or to adapt/write powerpoint books that will interest our kids, be at their reading/comprehension level (we write the text), and can be left click accessible or printed out.
teresa

- **Re: From ML by Brenda Scott** on Oct 21, 2007
Here are some other resources for symbol based activities and symbols; some have free parts to them:

<http://www.imaginesymbols.com/>
<http://www.dotolearn.com/>

- **Re: From ML by shari** on Oct 23, 2007
Thanks to everyone for the great suggestions and the links for alternatives to Google images and Boardmaker. I'll be sure to check them all out. I had no idea about the Smartboard stuff, so that was a real bonus. I'm amazed at how the kids in this system do not have simple, low tech communication systems. Some apparently have devices, but they are either in speech or on a shelf somewhere. So I really need to get something going in my area. I have some teachers and aides who are frustrated as well, so this information should be helpful to several people. Thanks again!

-
- **symbol based writing for the PDA?** by **teresa** on Oct 08, 2007
I was wondering if anyone knows of a symbol communication software database, such as Boardmaker, that could be loaded on a PDA for a student with autism. He needs the symbol support for writing, not communicating, and he likes using his PDA. He doesn't need speech output either, just the symbols paired with words. His PDA is a Dell Axim, I believe.

Any suggestions?

- **Re: symbol based writing for the PDA?** by **JoanneCafiero** on Oct 08, 2007
I am currently working with a Japanese researcher from Ehime University in Matsuyama, who has developed a program using Boardmaker that can be loaded on a PDA. The program was a free download from his website. Let me see if I can access that information.
- **Re: symbol based writing for the PDA?** by **teresa** on Oct 10, 2007
That would be wonderful! Thanks.

-
- **Re: From ML by LeanneGrillot** on Oct 08, 2007
This is one of the few 'referral' forms I am reviewing to be used in our tiny district.
<http://www.techconnection.org/pdfs/PreAssess0906.pdf>
I have a similar problem - they want an evaluation but don't know what to ask for so I am trying to get them to provide more information. Another one that I really liked is from Louisiana. It is on page 46 of A Framework for Conducting Assistive Technology Consideration, Screening and Assessment. <http://www.doe.state.la.us/lde/eia/1538.html>

The other comment I think might help is that assistive technology does not always mean 'high technology'. Sometimes just clip art from google, or laminated photos of favorite toys, end up the

communication window for a child.

http://www.wati.org/Products/pdf/AT_Checklist.pdf

The above link is from WATI and reminds everyone that there are all sorts of assistive technology for each area. It helps to put all the expensive 'high tech' in its place and to realize that low tech can be the solution.

Hope this might help!

Leanne

- **Re: From ML by Mary** on Oct 09, 2007
I agree that often high tech is not what may best meet the student's needs. I would say the majority of my recommendations begin with low tech and using natural aided language strategies.
- **Re: From ML by Connie Pazderski** on Oct 14, 2007
Thank you for the very useful information you have posted, especially the forms, and for pointing out that what works for each child is most important when considering technology.

- **AT & Organizational Skills** by **kcweg** on Oct 09, 2007

Hello,

I am not sure where to jump in on the discussion. I am a first year special education teacher. I am new to the topic of assistive technology so I am eager to learn about what is available. I am working in an inclusion setting with a student with Asperger's. I see this student's biggest challenge being organization. What assistive technologies could I start looking into to address this basic skill?

Thanks,
Kathleen

- **Re: AT & Organizational Skills** by **JoanneCafiero** on Oct 09, 2007
I think it depends on which area you want to tackle. Writing? Reading Comprehension? Math skills? problem Solving? There is an excellent book that I have used and recommend called TEach Me Language Freeman and Dake. The book is full of graphic organizers for everything from math to social skills.

- **Re: AT & Organizational Skills** by **fgsfd** on Oct 10, 2007
I agree.

In looking at the domain, if you will, of personal management...there are a couple of sub strands to be considered. One can think of personal management as including self-management (related to behavior) and self-organization. Self-management looks at that relationship between antecedent, behavior and consequence, and, ultimately, how technology can intervene to affect performance. Many of the technologies under this area include visual strategies and other prompting systems. Self-organization looks at a couple areas including physical organization, temporal organization, and procedural organization. Physical organization focuses on having a system for organization. Many of the tools here can be found at the local office supply store. Temporal organization involves organizing oneself with respect to time. Again, the office supply is very helpful here. Finally, and there is some overlap with self-management, procedural organization is actually executing the necessary steps to effectively use ones physical/temporal organization system(s).

Where is your student experiencing difficulty?

- **Re: AT & Organizational Skills** by **kcweg** on Oct 10, 2007
Thanks for the suggestions and breakdown on the different categories of organization. Primarily, I think this student is experiencing difficulty in physical organization. His backpack is a perfect example. I have tried to organize and color code his notes and assignments for each subject. I usually see a lot of random papers just crumpled up and shoved in the bottom. I try to weed through it periodically. I started using an assignment book with him, but I am not sure it is being reviewed at home on a regular basis. I am sure that his organizational issues go deeper than just keeping his papers neat.

Kathleen

- **Re: AT & Organizational Skills** by **Brian Wojcik** on Oct 11, 2007
Hmmm...sounds like my daughter... :)

I have found that with many students, issues of physical organization have underlying issues of procedural organization. When the student is supposed to file a paper...does he really? He may need a mini-task list to help him go through the steps or at least something to serve as a reminder about what are his responsibilities. Unfortunately, like for many of us, actually using an organizational system is a learned behavior which needs to be taught, shaped and reinforced.

Visually, there is a great little tool that I have used with students. It is called pocketmod (<http://www.pocketmod.com/>). It allows a person to create a personal pocket organizer. For students with procedural organizational issues, this is a great tool to list out steps in the organization process or to, at least, list off a list of reminders (which to use depends on the student's needs).

Auditorily, there are a number of tools on the market. Tools like the step pad from Attainmentnet (<http://www.attainmentcompany.com/xcart/product.php?productid=16158&cat=0&page=1>) are wonderful for recording short little 'steps' that the student can play back for prompts throughout the process.

- **Re: AT & Organizational Skills** by **mdover** on Oct 15, 2007
I checked out the pocket mod website and found the info to be useful for my middle school and high school students. Thanks for the resource.
- **Re: AT & Organizational Skills** by **amber** on Oct 16, 2007
I just checked out the pocketmode website, it looks like it might work with my middle and high school students also. Also might encourage my son, who writes notes on his hand, to try it.
- **Re: AT & Organizational Skills** by **Kelly C** on Oct 17, 2007
There is also a neat device called the Watch Minder...
www.watchminder.com
- **Re: AT & Organizational Skills** by **Brenda Scott** on Oct 21, 2007
Brian, thanks for the Pocketmod reference. That's a nifty tool!

- **AT Institute-Autism and AT** by **carmen duran** on Oct 09, 2007

Hello to all! I work for the District of Columbia Department on Disability Services. My position is mainly as an administrator. However, I have worked as a Supervisor for the Special Populations Unit for several years, working with individuals with disabilities from different ethnic/cultural backgrounds. We mainly work with individuals with substance abuse, mental disabilities, mobility impairments and students in transition from H.S. I must confess that I did not worked with any student on the autism spectrum. For that reason, I am glad to take this opportunity lo learn. I basically have learned "on paper" about this disability. Nothing will be better than learning from the practitioners in the field.

I have some questions regarding AT. Here, most of the time, people refer to computers and electronic devices, excluding other devices. Particularly, in the area of language or social skills or disruptive behaviors. I have heard about the robotic toys helping with the communication skills. I must learn more about the characteristics of individuals on both sides of the spectrum and the AT devices most appropriate for them. I appreciate the comments from the practitioners in this field. Thanks.

- **Re: AT Institute-Autism and AT** by **hogla** on Oct 10, 2007

Thank for the Institute! I have a question about Autism AT and the children with HIV (SIDA). Whose work with this area?

- **Tip for accessing the discussion** by **Jackie Hess [SI Faculty]** on Oct 09, 2007

As the number of posts increase, I know it can be daunting to keep up. You might try reading the discussion in transcript mode first. It takes a bit longer to appear on your screen, but is much faster for scanning messages. Then, when you're ready to respond to a comment or question, or to post one of your own, you can re-enter the discussion in "post mode."

After the first week, we'll "clear the slate," giving you a link to the Week One discussion, but creating a fresh screen for Week Two. (We may do this even sooner if necessary.)

- **Re: Tip for accessing the discussion** by **LeanneGrillot** on Oct 09, 2007

This is my first online class and I do agree that the posts are getting confusing for me. I was wondering if the posts will start to have more rhyme or reason as the class goes on. Do the instructors post information every few days, once a week, etc? What are the requirements as students? Just joining in the discussion or more than that? Can a wiki be set up with places for everyone to post links so that we don't have to search through all of the conversation posts to find them? Sorry for all the questions. I'm not sure if there is another place to ask them.

Thanks!

Leanne

- **Re: Tip for accessing the discussion** by **Jackie Hess [SI Faculty]** on Oct 09, 2007

Leanne, we will be adding all of the posted links to the Resources section, so that you don't have to search for them. We can look into the possibility of setting up a wiki as well.

The moderators wanted to give participants a couple of days to introduce themselves and establish their interests (that helps them prioritize). I think they'll begin to establish discrete lines of discussion now.

- **Re: Tip for accessing the discussion** by **jennydelvalle** on Oct 09, 2007
thanks!!!
 - **Re: Tip for accessing the discussion** by **BarbaraBrown** on Oct 10, 2007
I am reading the transcripts from the postings. I am currently working with 2 autistic preschoolers (ages 3 & 4) who have very limited language. I am trying some interventions that have proven to be very helpful in increasing their oral language. I am keeping anecdotal records in hopes of publishing the results of my interventions.
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- **Occupational Therapy Student** by **Summer44** on Oct 09, 2007

My experience with children who have autism is through volunteering and observing in schools and outpatient occupational therapy clinics. I am very interested in working with children who have autism. Anyone from around Pittsburgh, PA know where I could go to be more exposed to people with autism?

- **Re: From ML** by **kimberly fields** on Oct 09, 2007
You have good goals for the course.

- **High Tech Vs. Low Tech AT devices** by **HeatherB** on Oct 09, 2007

Hello! I have been following the threads on this discussion board closely. I am a parent of a Downs child with some speech capabilities. I also have four year old twins, one of whom the doctor speculates may have a mild degree of Aspergers Syndrome. I feel like I don't have much knowledge when it comes to the world of Autism and how AT devices contribute to functioning capabilities. I will tell you I just completed a training course in PECS with none other than Andy Bondy as the trainer and was quite impressed with the progress he makes with Autistic children and the PECS notebook system - obviously a very low tech form of an AT device. He did say at our training that the objective is to enable all children to communicate - whether that be verbally or not depending on the capability of the child. Some children would graduate from the notebook into a handheld device that would speak for them from pictures or from a typed sentence that the child selected - the High Tech device. In the end - every child had a voice and a way to communicate and Andy Bondy indicated that to take that away from any child is morally irresponsible! Something I totally agree with and have actually had happen to my child. When we first got my daughter's device, her teacher told us that it would not be allowed to come into the classroom with her because AT devices become a crutch for children and do not enable communication. As a former teacher, I understand the fear of not knowing exactly what to do with a device in the classroom and how to help a child work with it. It is crucial that teachers receive more training and enabling, so that devices are not seen as crutches, but rather as the aid that they are designed to be. Parents need to also be more flexible and understanding that low tech devices can be just as helpful and enabling for students, sometimes, as a high tech device. Sometimes these low tech devices are actually less distraction in the classroom and easier for the teacher and the child to work with, depending of course on the student and the severity of the need.

- **Re: High Tech Vs. Low Tech AT devices** by **Joan Breslin Larson** on Oct 10, 2007
Hi, Heather and all- I have decided to drop in from the transition side to join this exciting conversation.
I am so interested to hear about your experiences in training with PECS, and certainly agree with what you learned. It is sad to hear what happened with your daughter's experience with AAC. Research actually shows that AAC devices support communication and frequently stimulate independent vocalization. And certainly, for an individual who will be non-verbal, the technology provides a means for communication.

I share your concern with the need for teacher professional development. I am pleased at the number of educators who are participating in this conversation!

I also want to point out that EVERYONE I know who uses a high tech device also uses a low tech device. In fact, everyone I know uses multiple means of communication- although I am verbal (a little too verbal at times)I also type, e-mail, use Webinars, hand gestures, a little signing, facial expression and more to support my communication. And- as do we all, I choose from my repertoire of communication strategies to use what I think is best at that particular moment. When I provide professional development to parents and educators, I always suggest that we identify multiple means of communication and support a student in using what is most appropriate for that moment.

So, my question is, what strategies- in addition to PECS- have you used to support communication for individuals with autism? Let's talk about a range of strategies that have been successful.

- **Re: High Tech Vs. Low Tech AT devices** by **JoanneCafiero** on Oct 13, 2007
I am in total agreement. Students with ASD use multiple augmentative communication tools and strategies. I would caution people NOT to get stuck with PECs and not move a student to interactive receptive/expressive AAC. (Goossens' Crain and Elder).
- **Re: High Tech Vs. Low Tech AT devices** by **teresapinder@yahoo.com** on Oct 14, 2007
I agree with the points you made in your post. This web site: <http://www.lburkhart.com/handouts.htm> has papers and presentations by Linda Burkhart if you scroll down you will see MultiModal Supports for Retts Syndrome, keep scrolling until you come to the Strategies for Developing Language. There are several really good handouts on this site and the strategies are researched based.
teresa
 - **Re: High Tech Vs. Low Tech AT devices** by **Connie Pazderski** on Oct 17, 2007
Great information!
 - **Re: High Tech Vs. Low Tech AT devices** by **Heather** on Oct 17, 2007
Wow! I actually have heard of Linda Burkhart, seen some of her stuff before, but was not overly familiar with what I was dealing with! This was a great tip! I have bookmarked this on my computer! I want to go out and do some more research when I have a free moment and see how we can incorporate some of her ideas for our daughter! Thanks!

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- **Re: From ML** by **sarahj** on Oct 09, 2007
I work for the state AT plan in West Virginia, a mostly rural state. We ran into similar difficulties with teachers not being knowledgeable of software and hardware and not having updated computers that could run some programs. To help the situation, we thought it would be great to secure funding in order to provide an inclusive computer station in the schools. Just last year, we started a pilot project by offering three schools (one elementary, middle and high school) an accessible computer station equipped with an accessible desk, new computer and specific software chosen by teachers or recommended by us. The only stipulation was that each station be placed in an area where all students could access it, not just individuals with disabilities. We also provided trainings to the teachers and students on using the computer and software. So far, the computers have been a major success and have definitely opened up teachers.

- **Autism and AT by carmen duran** on Oct 10, 2007
I was reading the transcripts and quite frankly I have learned a lot from your suggestions, the materials and devices that you are using the websites to visit, having a curriculum based measurement...etc. I will hold several meetings with the counselors here to pass this information along. It's very valuable.

- **Asperger's at post-secondary level by dedgecomb@ledyard.net** on Oct 10, 2007
Hello everyone,

I'm a transition coordinator at a CT high school and was interested in learning if there are schools that have support programs for students with Asperger's Syndrome. What those programs look like?

We offer social skills groups for our Asperger students and I'm wondering if there are technology/computer based resources that we can make available to support our efforts.
 - **Re: Asperger's at post-secondary level by Andrea DeVito** on Oct 10, 2007
I am also wondering about this aspect of Aspergers and transitioning. I am wondering if the programs designed for teens can be adapted to work for adults with similar transitioning concerns. I work with adults. The transition that I am concerned with is from a group environment to a potential community based volunteer or work program. For those who are not going out into the community my concern is transitions throughout the day. I am wondering if there is a program designed to help individuals with transitioning both in the "school" and outside in the community?
 - **Re: Asperger's at post-secondary level by mjbmillier@sbcglobal.net** on Oct 18, 2007
There is a terrific school in Wichita, KS called Heartspring. The website is www.heartspring.org. In the past I have attended continuing education workshops there. I just recently called and asked for a tour and consultation because I needed some fresh ideas for my HS kids who will be transitioning. I was particularly interested in community based instruction and community vocational activities. They have programs that address community based instruction, community vocational activities, pre-vocational tasks, a vocational training program, functional academics, and home management.
 - **Re: Asperger's at post-secondary level by amber** on Oct 10, 2007
I would also like to know this. I teach at a very large high school. I have emotionally disabled high school students. I have just got a new student with Aspergers.
 - **Re: Asperger's at post-secondary level by Kelly C** on Oct 17, 2007
Check out the software that Attainment Company produces. It is very age-appropriate for older students. www.attainmentcompany.com

- **Using AT to augment service delivery to students.** by **Dave Cox** on Oct 10, 2007
I am a teacher in a school for children and adults with disabilities. We have an increasing population of children with Autism attending our school. The biggest challenge we have is getting a picture of the student's emotional, personal and educational needs (what makes them tick). It seems that we have a continuum of uses for technology in education. On one end of the continuum is technology that assists educators, and parents providing services to students. These would include evaluation, summarization and record keeping software and devices. On the other end of the spectrum is technology that assists us in providing direct services to students. These would

include low, med, and High tech methods and devices. Does anyone have a system that spans the technology continuum giving us tools for evaluation and providing suggestions for direct services?

- **Re: Using AT to augment service delivery to students.** by teresapinder@yahoo.com on Oct 22, 2007
This web site- <http://www.onionmountaintech.com/>- look to left and scroll to "handouts and article downloads"- has a wealth of info. written by Judy Sweeney, an educator and AT consultant. She has many great strategies for the classroom, a comprehensive evaluation, and an AT continuum that I have used in many meetings to get everyone looking at the continuum of AT needs/services for the student.
teresa

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- **Assistive Technology Resources** by **Matthew Goodwin** on Oct 10, 2007
Below are a couple more links to AT resources this group may be interested in.

A rather comprehensive list of AT software and hardware resources is provided by Ken Pope's Accessibility & Disability Information & Resources in Psychology Training & Practice site:
<http://kpope.com/assitech/index.php>

Also, I have been very impressed with the University of Colorado at Denver's Rehabilitation Engineering Research Center for the Advancement of Cognitive Technologies: <http://www.erc-act.org/>

- **Re: Assistive Technology Resources** by **Elba** on Oct 10, 2007
More links and websites in:

<http://www.seo-serrc.org/Nick07.pdf>

- **Re: Assistive Technology Resources** by **pmills** on Oct 10, 2007
Several posts have listed resources for AT- is there any way someone with time to kill could consolidate these? I would love to have a comprehensive list to research.
- **Re: Assistive Technology Resources** by **Jackie Hess [SI Faculty]** on Oct 11, 2007
The Family Center staff will be placing all of the resources mentioned in the Resources section of each discussion strand on the Institute "homepage" so that you will, in fact, have a consolidated, comprehensive list. We'll include an active link to each resource for easy access.
- **Re: Assistive Technology Resources** by **Connie Pazderski** on Oct 17, 2007
Thanks, Jackie!

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- **Wired Science awesome-new dimension to discussion** by **msebu** on Oct 10, 2007
I just watched the video clip from Wired Science. I was struck by the term "Affective technology". It really broadens the concept of AT. I did a post, but I think I erased it-so just summarizing... The book THE WORLD IS FLAT talks about how technology spans the world in a business sense. The Wired Science Clip showed how, when we can teach students about the world of affect and how to learn to read expressions we can open a whole new world for them. I am frustrated at times because we can help them learn to write, but they can't belong because they don't have the skill of understanding people. I was at an IEP yesterday where we tried to figure out this issue. I am passing the video clip to the parents, team and will see if with the student. Great! Thanks.

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- **Digital Technologies for Autism Research and Treatment** by **Matthew Goodwin** on Oct 10, 2007

In an effort to provide a little more structure and content to our conversation, I'd like to initiate a multi-part post centered on digital technologies that have the potential to enhance and accelerate the pace of autism research and treatment. I envision a three-part post that covers: (1) an overview of digital technologies, including examples of existing and possible systems; (2) the benefits of developing digital technologies for autism; and (3) barriers to realizing the promise of digital technologies. I will post these three discrete (but interrelated) sections over the next few days, and welcome comments at each stage of this discussion.

Section 1: Overview of Digital Technologies

Digital Technologies represents a variety of digitally-based systems including, but not limited to: the Internet; audio and video recorders; electronic sensing technology; computer architecture, hardware, and software; virtual reality; and robotics. Included below are a range of existing and emerging digital technologies (with hyperlinks included for you to explore more) being developed for autism research and treatment.

Information Systems Technology

Information systems technologies utilize easy-to-use, secure, web-based platforms to support data collection and transmission, information retrieval, and communication. An example of an information system technology for autism is the newly founded Interactive Autism Network (IAN) [<http://www.IANproject.org>]. IAN is a national online registry aimed at enhancing data collection and research recruitment. IAN encourages parents of children with autism to provide valuable genealogical, environmental, and treatment data from remote locations (e.g., home or office) using the Internet.

Audio and Video Capture

Discrete audio and video technology applications are being developed to record, annotate, and communicate behavior imaging data from the classroom, home, and clinical settings (e.g., BI Capture [<http://www.caringtechnologies.com/bicapture/>]).

Wearable Computers

Wearable computers are on-body sensor systems sewn into articles of clothing or embedded into portable accessories. Wearables that utilize physiological, physical, audio, and video sensors can assist persons with autism. For instance, the Galvactivator [<http://www.media.mit.edu/galvactivator/>] is a wireless skin-conductance sensing glove that can record and broadcast skin conductance levels to assess and help with arousal regulation. An Emotional Social Intelligence Prosthesis (ESP) [<http://affect.media.mit.edu/projectpages/esp/>] is also under development, using a wearable camera and pattern recognition software to infer socio-emotional states using nonverbal cues such as head and facial displays of people, and communicate these inferences to the wearer via visual, auditory, and tactile feedback.

Assistive Devices

In addition to the many augmentative and facilitated communication devices currently on the market, voice enabled communication devices can now be created that mimic the voice of the minimally verbal child. Moreover, computerized, mobile tools are being developed to help individuals with autism organize their materials, establish schedules, and provide cues for completing day-to-day tasks (e.g., Symtrend [<http://www.symtrend.com/tw/public/tours/autism.html>]).

Speech and Language Technologies

Speech technologies, which include speech recognition, speaker recognition, speech synthesis, and voice transformation (e.g., Center for Spoken Language Understanding [<http://www.cslu.ogi.edu/projects/researchprojects.html>]), have made tremendous advances over the last decade in terms of accuracy, quality, and user-adaptability and can be used for a wide

range of assistive, diagnostic, and remedial purposes.

Computer-based Learning

Computerized, educational products designed specifically for individuals with autism are also being developed. For instance, Transporters

[<http://www.autismresearchcentre.com/research/project.asp?id=209>] is a DVD-based program aiming to help children with autism look at the human face and learn about emotions. Interactive computer simulation software developed to teach novice tutors (e.g., educators, parents, siblings) discrete trial training techniques (e.g., DTkid [<http://www.esrcsocietytoday.ac.uk/ESRCInfoCentre/ViewAwardPage.aspx?AwardId=2580>]) is also underway.

Virtual Reality

Virtual reality is a technology that allows a user to interact with a computer-simulated environment. Virtual reality technologies are being adapted to teach individuals with autism new coping skills that may generalize to their everyday lives (e.g., YourWorld Project

[<http://www.psychiatry.ox.ac.uk/cap/autism/virtualreality/yourworld/view/>]).

Robotics

Sociable robotics and dolls capable of automatic facial tracking, expression recognition, and eye-tracking are being developed to help children with autism learn, identify, interpret, and use emotional information in a socially appropriate, flexible, and adaptive context (e.g., Affective Social Quest [<http://neurodiversity.com/robotics.html>]).

I welcome any questions and/or comments on the information provided herein before posting Section 2. The Benefits of Developing Digital Technologies for Autism.

- **Re: Digital Technologies for Autism Research and Treatment** by **amber** on Oct 10, 2007
Thanks, didn't realize how many products and services were available. I think the multi-part post centered on digital technologies will clear up some questions I have. I'm having difficulty following all the posts.
- **Re: Digital Technologies for Autism Research and Treatment** by **MGomez** on Oct 14, 2007
I too am amazed at the many "new" digital technologies that are currently being evaluated and developed to assist individuals with Autism. Thanks for helping to get the word out and setting the stage for a discussion in this area.

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- **Technology Considerations for Students with Autism/Aspergers – Social Stories** by **Sean J Smith** on Oct 10, 2007
Technology Considerations for Students with Autism/Aspergers – Social Stories

There have been a number of great ideas shared within the postings thus far and I wanted to add a few thoughts about how technology has altered the way we have been using social stories. As many of you know, Social Stories can be a powerful tool for students with autism and Carol Gray has developed a number of resources to this end (see <http://www.thegraycenter.org/> for more information). Others have investigated its impact and one of my colleagues here at the University of Kansas, Dr. Brenda Myles, has a number of studies underway on the effectiveness of social narratives (if you are interested in learning more about this research, let me know).

Now, how do social narratives connect with AT? Of course, many of you are saying to yourselves, Sean, I create Social narratives using digital pictures, BoardMaker (see mayerjohnson.com) icons, and similar resources. Great! We've been enhancing the social narratives via the use of MovieMaker and/or iMovie. That is, instead of a story where the student interacts with 2-D pictures and text, we have created interactive videos that enhance the narrative and contextualize the

experience for the learner. Let me give you an example.

We have a young man; let's call him Sam, that hates to get his hair cut. When I say hate I mean pulling him to the barber, holding him in the chair and holding his head so the barber can do his magic. The experience is quite stressful to the barber, parents, Sam, and the folks at the barbershop. We have tried doing this at home and a number of other options and have found that the barbershop is the facility best equipped for this endeavor. We have also tried to work with Sam through a variety of strategies, including text and picture-based social narratives, to prepare him for the experience. We have struggled with our efforts and were really frustrated with the lack of progress, as was Sam.

Thinking about the narrative and the context, we thought about further engagement of the narrative via a small video. He liked movies, he liked home movies, he liked being in home movies, and a variety of other things that appeared to reinforce the use of an interactive narrative. Working with Sam, the barber, some of his teachers, and his parents, we developed a storyboard of the barber experience. We had Sam help us as much as possible where he helped take digital pictures to make connections with the storyboard. We then captured video of Sam leaving the house, getting to the barbershop, and everything else involved with the haircut. We had him involved in the videotaping and he actually starred in as much of the narrative as possible. He was very interested and actually helped do some of the editing on the Moviemaker program.

In case you are unfamiliar with MovieMaker or iMovie, these are Windows (Moviemaker – Windows XP and above) or Apple (iMovie Operating System 9 and above) products that are free on your operating system. If you can't locate them, please look to download them at microsoft.com (MovieMaker) or apple.com (iMovie). They are very user friendly and actually I have an 8 and 6 year old who have been quite active in creating their own videos over the past few years. Sam, actually, did a fair amount with this application in the editing stage. Now, if you have access to Atomic Learning (atomiclearning.com), you have access to some wonderful tutorials that walk you thru the very steps necessary to create social narratives for your students. They can easily be saved to a CD or the computer and used by the student, parents, teachers, and anyone else involved in the child's program. Just a brief thought and more later.

- **Re: Technology Considerations for Students with Autism/Aspergers – Social Stories** by nlyles@pbc-sc.net on Oct 11, 2007
This is a forum for autism and AT, but I just thought I would mention that many of these resources are useful for students with pediatric bipolar as well.
- **Re: Technology Considerations for Students with Autism/Aspergers – Social Stories** by **Brian Wojcik** on Oct 11, 2007
A colleague of mine posted this on another network to which I belong...

He is doing some work using avatars in the making of social stories for students with autism and aspergers. An avatar is a 'virtual being' and the students with whom he is working responds better to fictional characters than to real ones. One source for making avatars is at the link below. It uses a Logitech web cam and video effects software (which comes from logitech) to 'map' an avatar over the face of the person in the webcam. As the person speaks, the avatar is animated.

http://www.logitech.com/index.cfm/webcam_communications/video_software_services/video_effects/&cl=us,en

- **Re: Technology Considerations for Students with Autism/Aspergers – Social Stories** by **Carol Leynse Harpold** on Oct 12, 2007
Yahoo, if you create an account also allows you to create avatars, however through their own selections of faces, hair and skin color and provide some animation. Not as

sophisticated as the Logitech with a web cam but very fun and entertaining to create your own. I had thought about using them for students but not for social stories. How clever.

As for technology with students with autism or emotional disorders I am interested in using videos with Smartboards that can capture and focus in on feelings when reviewing a movie that a group or individual student/s are working on social skills development allowing them to identify and interact with. It would be great to take videos of themselves or others and use the interactive pens/markers to identify feeling, body gestures.

Fun stuff to engage and teach students.

- **Re: Technology Considerations for Students with Autism/Aspergers – Social Stories** by **Brian Wojcik** on Oct 11, 2007

In addition to the tools mentioned by Sean, I would highly recommend Voicethread. Voicethread is an online service that allows multiple people to narrate and illustrate pictures. This tool can be used to provide a balance between video and auditory information. It is also a wonderful tool when we are looking at other academic applications that promote UDL. Since it is an online tool, one can view the tool any place.

Here's the link:

<http://voicethread.com/#home>

- **Re: Technology Considerations for Students with Autism/Aspergers – Social Stories** by **beames** on Oct 11, 2007

What a cool tool!! I love getting new ideas and learning about new tools!! Thank you!! Will certainly try it out and share it's potential as a tool for visual learning and social sequencing!!

Bridget

- **Re: Technology Considerations for Students with Autism/Aspergers – Social Stories** by **taits** on Oct 16, 2007

I went to this site, it's great! I can't wait to start using it with my middle school students, thanks!!

- **Re: Technology Considerations for Students with Autism/Aspergers – Social Stories** by **BarbaraBrown** on Oct 11, 2007

Thanks for this wonderful resource!

- **Re: Technology Considerations for Students with Autism/Aspergers – Social Stories** by **AAlsbrooks** on Oct 14, 2007

I never thought of using MovieMaker to create social stories for these children. I have used Board Maker a number of times and found some success, but am always looking for more. Using MovieMaker would engage the students, give them some ownership over the narrative. What a great idea! Thank you for sharing.

- **Re: Technology Considerations for Students with Autism/Aspergers – Social Stories** by **Bridget Ames** on Oct 17, 2007

That makes me think of the iconic program available on mac computers. It is part of the operating system and great for using pictures to create social stories in a comic strip like fashion!! It's a lot of fun as well and very easy to use!!

- **Hi and AT across the curriculum and grades** by **msebu** on Oct 10, 2007
Hi! I am excited to get into this discussion. I am a teacher-consultant and my primary work is to include students in general education from preschool through HS. I have approximately 20-25 students with autism/aspergers and then students with other learning issues. My home district, Washtenaw Intermediate School District (www.wash.k12.mi.us) is lucky enough to have a well developed AT program and knowledgeable people to work with us. Ronnie Connor and Theresa Sutton worked to develop the STELLA project. They worked with general ed. teachers to learn about and use technology-low to complex for writing across the curriculum. It opened doors for the students, in terms of their writing. The teachers had to get used to "using it" even when it was present in the class. Those who did learned ways to successfully include students with autism and other disabilities more naturally into the flow of the group.

- **PECs in the general PE setting** by **pmills** on Oct 10, 2007
I have made up PECs folders for each of the physical education teachers with whom I work. They have these icons in the gym and can use them when teaching, or give them to the paraprofessionals who accompany some of our students with autism and other disabilities to PE. This low tech device is so helpful for students who already have a harder time with transitioning and less structured settings. It also brings the PE teacher into the "team" and helps them teach ALL the kids in the class. The paraprofessionals can listen to the instructions along with the students and then have the picture cues ready to go when the activity starts. I think our children with autism are so much more at ease when they know what is next.
 - **Re: PECs in the general PE setting** by **Joan Breslin Larson** on Oct 10, 2007
Having low tech supports are so helpful in a place like the gym where a bulky technology device will not work! One of my favorite simple AT strategies is to purchase a talking photo album. These generally cost about \$20.00 in a store (far more in a disability catalog). I take a series of digital photos of a student in a situation, and place it in a powerpoint presentation about the activity, include the text about the activity, then print the powerpoint page by page, resizing the page to 4X6 (the size of the photo album pages. I ask a same gender peer to record the text from the powerpoint page on the correct page of the album. These are highly durable, and will allow a student to review the social story over and over- see the picture, read and hear the words, and review the activity that will be coming. Lots of learning can go on, and kids seem to like it!
 - **Re: PECs in the general PE setting** by **Laura** on Oct 11, 2007
This is a great idea for the talking photo album. I work as a PT in the schools, and have worked with a student who used the talking photo album as a communication tool between home and school. The family would put pictures of things significant in the family life of the child, and send it to school with a recorded message. The student then used this album to share with her peers and teachers.
 - **Re: PECs in the general PE setting** by **amber** on Oct 11, 2007
Being new in this field Excuse my ignorance but what is a PEC folder?
 - **Re: PECs in the general PE setting** by **teresapinder@yahoo.com** on Oct 11, 2007
PECS stands for Picture Exchange Communication System, this is a very structured communication system that is taught in a very structured way with different levels being mastered before going to a higher/increased communication demands, level with a nonverbal student. A PECS communication book has picture supports with sentence starters which the student places in sequence on a detachable strip and hands to the communication partner. The "request" made by the student is then "honored" by the communication partner. Many times people talk about a "PECS system" when in reality they are using visual supports for

communication and not the structured program. There is a very formal training you go through to implement PECS (from 1 day to a week long) and it teaches nonverbal students how to initiate a communicative intent very well. This is more info. than you bargained for but if you Google "PECS" you can find the web sight with more details than this!!!
teresa pinder

o **Quick tutorial on PECS PLEASE by RT** on Oct 11, 2007

While absolutely everyone else in this discussion may know about PECs I have a sneaky suspicion that I'm not the only one who doesn't. I suppose I could teach myself using Google, but would one of you be kind enough to provide a quick tutorial about it and especially how it relates to autism. Thanks a million!!

▪ **Re: Quick tutorial on PECS PLEASE by amber** on Oct 11, 2007

You're not the only one who isn't familiar with this.

▪ **Re: Quick tutorial on PECS PLEASE by teresapinder@yahoo.com** on Oct 11, 2007

Look down a little on the "getting started" post I made. Please know that there are several day trainings held on this subject, but the post should give you the general idea.

teresa

▪ **Re: Quick tutorial on PECS PLEASE by guest** on Oct 11, 2007

I just completed a two day training on PECS and was able to set up a small notebook for my six year old Downs daughter. She has very limited verbal capabilities, but understands just about everything you say to her. In the last two days, she went from using single pictures out of her notebook, to making request with the entire sentence strip. She is so excited about her notebook and being able to communicate, she won't quit "talking"! When she caught on to the fact that she could talk with pictures, she really took off with communicating with PECS! I had no idea she would pick it up that easily! To me, it was the best training workshop I have been to in a long time! She now has the High Tech AT device, which sometimes works and sometimes doesn't, and she has the PECS notebook which will never fail her!

▪ **Re: Quick tutorial on PECS PLEASE by HeatherB** on Oct 11, 2007

Okay, that went well! Sorry! Evidently my computer signed me off the internet and I showed up as a guest on this site, not real sure how all that happened. This last post was made by me! Also, a correction to the website: www.pecs.com. Sorry about that!

▪ **Re: Quick tutorial on PECS PLEASE by Laura** on Oct 12, 2007

I am a physical therapist who works with a 7 year old boy who has Downs syndrome. I have worked with him for several years so he knows me. He has been misbehaving lately at school and home, mostly lying down and refusing to move, or having verbal outbursts. Although he is using more vocabulary, he understands much more than he can communicate. He is not using a communication device, or PECS. I will relate your story to our speech and language therapist at school, and see if we can implement such a strategy for him. I have a feeling he would learn as quickly as your daughter, and may use more appropriate responses because he will be less frustrated. Thank you for the input.

- **Re: PECs in the general PE setting** by **Laura** on Oct 11, 2007
As a PT in an elementary school, I will try to implement this idea here. We have kids who carry pecs with a visual schedule and various activity options in a binder. I like the idea of having a folder for each child who needs it in the gym, in order to bring the PE teacher into the team.
 - **Re: PECs in the general PE setting** by **teresapinder@yahoo.com** on Oct 11, 2007
Having activity specific visual supports is a great way to have our kids included, it not only lets them know what the choices are and what's going to happen, they also have the common language for the activities for commenting and requesting.
teresa
- **Re: PECs in the general PE setting** by **BarbaraBrown** on Oct 11, 2007
This sounds like a great idea. I will share it with the other special education teachers in my building.
- **Re: PECs in the general PE setting** by **Mary** on Oct 12, 2007
Are you speaking about using the actual PECs (Picture Exchange Communication) strategy or of using pictures/symbols to provide visual support and communicate? Sometimes our teachers will say PECs when they really are not talking about the picture exchange communication.
 - **Re: PECs in the general PE setting** by **JoanneCafiero** on Oct 12, 2007
I have been out of touch due to a family emergency but will endeavor to keep up. I have not read all the posts Re: PECS but do want to say that it is important to distinguish picture exchange (which was part of TEACCH methodology) and was put into a formalized structure by Bondy and Frost...from PCS, Picture Communication Symbols developed by Roxie Johnson in the 80s. And while we are on the topic of PECS, I think that when practitioners are not successful with an AAC intervention (like a SGD or topic/language boards), they go back to PECS. For many kids this is a mistake. They clearly have cognitive potential but because of motor planning issues, anxiety, etc. they cannot "show what they know" and we unwittingly "dumb down" the intervention. I don't have a clear solution other than always always providing receptive language input to insure comprehension and to provide a model for language.
 - **Re: PECs in the general PE setting** by **Connie Pazderski** on Oct 14, 2007
I am sorry you have had a family emergency - I hope your family is better. Thank you for clarifying PECS and PCS. I was not sure what SGD stood for so I found this website: http://www.assistivetech.net-at_reports-SGD.pdf which gave a good explanation. Your posting has been very thought provoking and I have many questions about using receptive language input to insure comprehension although I do understand the importance of providing a model for language - If low tech such as communicating with picture notebook or objects seems to be effective for a student, at what point should an SGD be introduced? I am using some devices such as BigMac, LittleMac, Twin Talk, and Italk2 in the classroom, which I link with visuals for some activities. I also use these devices for simple expressive language activities such as greetings, expressing a choice given two pictures, participating in circle (i.e. day of the week), and to express continuation of an activity (i.e. "I want more"). These devices have been somewhat effective in my preschool/K-3 PMD classroom. I think providing a model for language is very important, but I have heard that students can become dependent on verbal prompts paired with visuals and that verbal prompts are the most difficult to fade. Can you clarify for me: Can receptive language input also be visual prompts or is it only verbal/oral language? Should we use spoken words with visual prompts (i.e. pictures and/or objects) for some children or only a visual prompt or only

a verbal/spoken/oral prompt? For example, for a PMD child beginning toilet training, is it preferable to present a non-verbal PMD child with a picture of a toilet only to indicate it is time to use the toilet, or would it be better to use pair the words "It's time to use the toilet" with a picture, or to just say "It's time to use the toilet" without a picture, or to present a child with a BigMac/LittleMac device with a picture of the toilet attached and have the child activate the switch? Is it acceptable to use a variety of these approaches to try and begin generalization, or should the prompt be the same across people and settings? Is it a good idea to try several approaches and take data on each to determine which approach works best, or to try several approaches for generalization? Or, would an eclectic approach present too many different skills to allow for generalization?

- **Re: PECs in the general PE setting** by **teresapinder@yahoo.com** on Oct 14, 2007

My vote would be to use a variety of approaches and take the data on each. Over time the data will indicate the "best" approach for that student. I have seen a class where each adult takes a particular structured approach to using the visuals, pairing words, using single message device, they each take data for their particular set up for about 6-10 days. The data then drives which way or combination works best for the student(s). The classroom looks like organized chaos, but when all is said and done there is a body of evidence pointing to what works best.

teresa

- **Re: PECs in the general PE setting** by **Mary** on Oct 15, 2007

I find myself saying the same thing a good part of my day. I think the building receptive through modeling and aided language is critical and needs to continue forever.

- **Re: PECs in the general PE setting** by **Mary** on Oct 15, 2007

Does anyone have an idea how many times a typical child hears a word before he attempts to use it expressively? It seems like there should be some research out there. I have said that we need to model symbolic language at least that many times before we can expect the student to use a symbol receptively.

- **Re: PECs in the general PE setting** by **teresapinder@yahoo.com** on Oct 17, 2007

You are thinking in the right direction, for our kids the need to consistently "see" language is as, if not more important than other kids' need to "hear" language.

teresa

- **Re: PECs in the general PE setting** by **AAlsbrooks** on Oct 14, 2007

Thanks for sharing this! I am a general ed K teacher and my PE teacher has been looking for ways to help get the students engaged. This sounds like a great way and maybe just what she is looking for. I am going to make some of these folders to send with the students so that she (P.E. teacher) can refer to them to help teach the students.

- **Re: PECs in the general PE setting** by **susan powers** on Oct 16, 2007

I have also found that by providing the lunch line with pictures and symbols, my student does not have to balance the communication book or folder, tray and then try to indicate what they want. By placing these common symbols or pictures at various stops throughout the student's day, it may eliminate finding the right one, stopping to look through the book etc. Just a thought...that can be expanded upon with the use of pictures or symbols for communication or choices anywhere in the school day.

- **Question by Hector Jose** on Oct 10, 2007

If there is not a consensus on what or what not is considered autism, how does that issue affect the development and/or creation of assistive equipment or devices?

- **Re: Question by Joan Breslin Larson** on Oct 10, 2007

Jose- I would be very concerned if we had assistive technology specifically for autism, or specifically for any other disability. When I have worked with IEP teams, I have always recommended that when choosing technology for a student, they should look at the student- his needs, strengths and abilities, the environments in which a student needs to be and what supports are available, and the physical arrangement, what tasks are part of being actively involved in the educational setting, and based on that, choose tools. (Hey- this sounds suspiciously like the SETT Framework!)

In my opinion, children with autism are as varied in needs as are all other groups of children. The diagnosis will not drive the need for technology, but the needs of the individual determines what is necessary. On the other hand, it is important to provide input to developers about the needs of individuals- and having multiple ways for a device to be used (for example, being able to have various types of graphics so that the child who needs a photograph as a representation have that option, as well as having an option for children who need line graphics).

I typically have the opportunity to speak with company reps at local, regional, statewide and national conferences. If you cannot attend these conferences, provide input to your local vendor or write to the company.

I remember once when I saw a specific change made to a device based on feedback from a parent. A Mom told me why there were challenges with a communication device for her daughter. A few months later, I was at Closing the Gap and mentioned that to the company's vendor. The next version of the device had the suggestion made by that Mom. That was very powerful!

- **Re: Question by amber** on Oct 11, 2007

I agree. There are so many children with so many needs it is important to look and see what fits a particular students needs rather than what their disability is. That was a great story about the product change from feedback from a parent.

- **Re: Question by J. Long** on Oct 12, 2007

I totally agree. We are a small county(7000 total students) and only 5 students "labeled" Autistic. AT is used in that class, yes, but most of the AT we do in our District is outside the Spectrum Disorder. Many of our SLD classes/students use the AlphaSmart.

- **Hello by Monica** on Oct 11, 2007

I am a parent of a child with Asperger's. I live in South Texas, and in our area there are little to no services available. I hope to learn all that I can from all of you. Thank you for the chance to participate.

- **Welcome by eclements** on Oct 11, 2007

Hello. I am a Special Education Teacher. I am interested in learning more about technology. I am also looking forward to making our students lives more successful.

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- **Question about how to start a student on picture communication** by **ct76** on Oct 11, 2007
I have a student who is pretty non-verbal. She knows about 50 words and they are mostly nouns. She will not use words to communicate even when it is a word that I know she knows. I want to start her on some sort of picture communication. The other problem is she is very young 5 and very active. It is hard to get her to sit down for more than 5 minutes at a time. At home she is allowed to use grunts and yells to communicate and we are still trying to break her away from that to using words and pictures. Any suggestions on how to get her to sit down and get it started? Also any key words or phrases that might be good to start with?
Thanks

- **Re: Question about how to start a student on picture communication** by **teresapinder@yahoo.com** on Oct 11, 2007

I have always started with whatever is of highest interest for the student. If the student does not have a reason to communicate they see no need. This will take two adults at first- Have a visual of the "favorite" item, show the item next to the visual, have a support person assist/guide the student to touch the visual, then allow the "favorite item" for a few minutes. This by the way is how the beginning of the PECS protocol works. Picking up the visual symbol and "exchanging" it for the item becomes a repeated pattern and the support partner gives as few physical prompts as possible. You begin to expand the "requested items" and start placing two pictures for the student to choose from. This can take from one session to many depending on the child. But, it does teach communicative intent/initiation and that pictures have meaning and will get you something you want better than screaming.

Hope this gives you a place to start, good luck and do not give up or in (when the screaming starts) LOL LOL!!!
teresa

- **Re: Question about how to start a student on picture communication** by **margy** on Oct 11, 2007

We begin by using the PECS protocol also. It is great motivation for the student, if you are able to find those high interest items. Once you develop the basis for this, and the student begins to request highly desired items, you can build those motivating items into a "First, Then" approach as you gradually extend their attention span. When you are wanting to begin a work time with the student, have the student request what item they want. Use a visual board that then says "First work, Then (the motivating item)." Begin by doing one small task, then reward. Gradually build up the task demands before the reward is given.

- **Re: Question about how to start a student on picture communication** by **rtaylor** on Oct 15, 2007

I agree. Sometimes we may need a facilitator to help the child understand the relationship of an "exchange". This can be an assistant who helps the child "hand over hand" initially.

We need to set up the environment to encourage communication. If everything is a routine there is no need to communicate. We may need to sabotage the environment such as giving a student an empty box of crayons and ask him to color. The facilitator then encourages the student to give the teacher the symbol for crayons. The teacher then gives the student the crayons.

Also even a student without speech does communicate. If he screams when he is in a certain situation and we respond to his/her screaming then the child was effective in their communication. Of course that is not socially appropriate. So we need to be careful about what we are rewarding.

Also, we need to look at the idea of pragmatics. Is this to request? to deny? to protest? to greet? to gain attention?

I feel that a good place to start is to request.

- **Re: Question about how to start a student on picture communication** by **teresapinder@yahoo.com** on Oct 17, 2007

There are several reasons why we communicate:

1. To request or ask for something
2. To protest
3. To gain attention
4. To share information
5. To comment on the world around us
6. To maintain relationships

Things ALL students need to express:

- Tangible:
 - I want...
 - May I please have...
 -, please.
 - I need ...
- Attention:
 - Come here please.
 - Talk to me.
 - Hi.
 - Excuse me.
 - I need help.
 - Hug, please.
- Escape:
 - I need a break.
 - Is it time for a break?
 - I don't want to do this.
 - I'm tired, may I rest?
 - Can we stop now?
- Sensory:
 - I need to walk.
 - Can I go to my quiet corner?
 - Turn the lights off.
 - It's too noisy, I can't handle it.

And yes we do need to be careful/clear as to what is being "rewarded" as communication.

teresa

- **Re: Question about how to start a student on picture communication** by **nereid** on Oct 12, 2007

You may want to try an Aided Language Stimulation technique to increase both her receptive and expressive vocabulary and her interest in using pictures to express herself. You will model using pictures in a variety of natural paradigms throughout her day. That would assist her to understand that this is the accepted form of communication in your classroom.

- **Re: Question about how to start a student on picture communication** by **valeriekroesen** on Oct 24, 2007

I have used this method repeatedly over the years and have found great success. I believe it emphasizes modeling which we often tend to exclude. When AAC is placed in front of a child teaching staff assume that the students will know how to use it. I often used aided language stimulation with communication boards I have made versus the overlays that are made specifically for this program

- **Re: Question about how to start a student on picture communication by valeriekroesen** on Oct 24, 2007
I have used this method repeatedly over the years and have found great success. I believe it emphasizes modeling which we often tend to exclude. When AAC is placed in front of a child teaching staff assume that the students will know how to use it. I often used aided language stimulation with communication boards I have made versus the overlays that are made specifically for this program

- **Re: Question about how to start a student on picture communication by Mary** on Oct 12, 2007
I think it is important that the child has had exposure to symbols in their natural environment before we expect that they will use the symbols expressively. You could begin with making symbols for her favorite items and when she chooses that item, show her the symbol. Build the receptive vocabulary before expecting it in her expressive vocabulary.
- **Re: Question about how to start a student on picture communication by JoanneCafiero** on Oct 13, 2007
If she knows 50 words do you mean receptively or expressively?
It is common for people with autism to "know" words and not use them consistently. It sure makes our jobs difficult. I would start this young girl on an aided language intervention. Give consistent receptive input with the expectation, without pressure, that expressive language will occur.
- **Re: Question about how to start a student on picture communication by Kim Haynes** on Oct 18, 2007
I always start with something highly motivating to a child (music, bubbles, a toy, etc.) I pair a picture of that item with a blank square. Whenever they point to the picture they get their favorite item. If they point to the blank square they get nothing. I reinforce this verbally, oh there's nothing there. After the child begins to understand the process I switch the pictures (the idea being - to move away from cause/effect activities - the child needs to learn that pictures have meaning) Once the child learns that pictures have meaning, they need to learn different pictures have different meanings. I do this by pairing a liked item with one they absolutely hate (if a child has tactile defensiveness I might use "hold my hand" or sandpaper). My children learn quickly which picture means I get the music vs. she's going to hold my hand. At this point I work in more choices gradually most of the pictures are concrete and allow the child to choose a toy/activity. Once the child is doing well and is using 6-8 pictures to make choices I introduce activity specific pictures. For example, if a child chooses bubbles, they can then point to pictures that indicate blow a big bubble, blow a small one, my turn, your turn, pop it on my head, pop it on my..., etc. This also allows me to work on basic concepts. I add the vocabulary one activity at a time. I have done this with pictures only and with voice out-put devices depending on the needs of the child.

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- **social stories by msebu** on Oct 11, 2007
Carol Gray also does a nice presentation on bullying and people with autism/aspergers. She suggests helping the individual to practice their defenses either through comic strips or written social stories. The students really like the comic strips. They like to create their own on the computer and carry them with them. The comic strips provide another visual tool that can be low or high tech. It helps students to express frustration without having to have a big blow-up.

The dollar store is a great place to find things for low tech tools. They have credit card holders that can fit 8-100 pictures. We made several volumes for a student who attends a class located on a college campus. They make up the schedule in the morning and can change it as needed. He returns the cards as a way to indicate all that he had accomplished that day.

- **Re: social stories by margy** on Oct 11, 2007
The credit card holders are a great idea! Baseball card sleeves are another idea to hold

picture symbols - more expensive but extremely durable if you have a student who needs something more durable.

- **AAC and Early Language Development from Robin Hurd by Jackie Hess [SI Faculty]** on Oct 11, 2007

This is a copy of a post from AAC expert Robin Hurd, offered in an earlier discussion, that I thought would be relevant here.

I want to tackle the questions about teaching kids on their AAC system, especially those who have other issues: Autism, cognitive impairments, etc. One of the things to keep in mind when working with students who use AAC is that they may not generalize well. They may not be able to take a word they learned in a drill and practice setting with a flash card and carry it over into a natural setting and use it appropriately. Why? Because children who have never spoken have not yet internalized English, they will need support to not only learn the location of the word, but also to build a mental structure around that word: how it can be used in real life, what it means, how it fits into a sentence, etc.

In order to teach children who use AAC to actually use the words they learn in natural settings, we need to have a plan. First of all, pick the words you are going to focus on, and make this a short list-- a few at a time. Then think of all of the ways the child might be able to use this word. What questions might you ask the child that would use this word in the answer? How can this word help the child to make his world change? You can write short scripts to help everyone who works with the child support the use of these words, you can say these words verbally, you can model them on the device, you can use flash cards, but what must happen is the child must develop a mental sense of what this word can do.

When Joshua first learned the word "now" it was in a speech therapy setting with me sitting in to help locate new words as needed. The therapist often rewarded the boys with bits of their favorite video. Our goal was to get beyond "I want " phrases and have some conversation. However, Joshua's goal was to watch a part of that video! He kept saying, "I want sleeping beauty", and the therapist promised he could watch it next time he came. Josh was not happy! We wanted to see how he would communicate to the clueless grown-ups. "Why are you angry? When do you want to watch the video?" the therapist asked. Josh didn't know any words he could use to answer that question. I whispered the word "now" and he said "yes" and got excited. So I showed it to him; he now had his first power word! With it, he was able to reach his goal of watching that video. For the next two weeks, "now" was our focus word. We spoke it, asked questions that required it as an answer, but we didn't have to model it on the device. He was so excited to have access to that word, that he remembered it himself.

Not every word we have taught has caught on that quickly, but the process is much the same, even if it requires more modeling and practice to become able to use it in natural settings and without a prompt. At times, we have also spent time teaching what the word means; an example of this is top, middle, bottom.

- **Re: AAC and Early Language Development from Katya Hill by Jackie Hess [SI Faculty]** on Oct 11, 2007

This is another "re-post" from an earlier discussion.

I see many children as part of my clinical practice that are using AAC interventions, and parents are asking questions about what are the next steps to build communication skills. One method to evaluate the effectiveness of the AAC intervention is to see how the system supports vocabulary and grammar skill development. One of the diagnostic tools I use is to compare the vocabulary selection and organization with the research on Brown's Stages.

You may have heard about a child's language skills being at, "Brown Stage I" or "Brown

Stage III." In his book "A First Language", Roger Brown described five stages children progress in mastering basic semantic (vocabulary) skills and acquiring the first fourteen morphemes (smallest unit of meaning) of the English language.

These are the five stages with the age ranges and what to look for in terms of word and morpheme use.

Stage I -- Semantic Roles and Syntactic Relationships

MLU 1.75 Earliest 18 months; latest 27 months

See mommy. See daddy.

Find it. Hide it. Fix it.

Mine. All gone. Up here/Over there.

Stage II -- Grammatical Morphemes and the Modulation of Meaning

MLU 2.25 Earliest 21 months; latest 30 months

That's daddy's nose.

Stage III -- Modalities of the Simple Sentence (Yes/no questions, WH questions, negatives, & imperatives)

MLU 2.75 Earliest 23 months; latest 37 months

Who is this?

What is this?

I can't swim.

Stage IV -- Imbedding of One Sentence within Another

MLU 3.50 Earliest 26 months, latest 44 months

Now, where's a pencil I can use?

That's a box that they put it in.

Stage V -- Coordination of Simple Sentences and Propositional Relations

MLU 4.00 Earliest 27 months, latest 48 months

You snap and he comes.

I did this and I did that.

We went up to Foxboro and there were slides.

Brown, Roger W. (1973). A first language: The early stages. Cambridge, MA: Harvard University Press.

- **Re: AAC and Early Language Development from Katya Hill by JoanneCafiero**
on Oct 12, 2007
Thanks Jackie that was a helpful post. I do want to say that I have noticed over the years that people in the autism spectrum seem to have their own idiosyncratic sequence of language skill development so I try to be careful not to look at a student with autism and pigeon hole him/her and use that pigeon hole as a jumping off point. I think it's important to assume cognitive potential and communication potential regardless of how these individuals may present themselves to us. "Learned helplessness" resulting from never experiencing any power over their environment has made many of these folks present as "low functioning". And it often isn't so.
- **Re: AAC and Early Language Development from Katya Hill, continued by Jackie Hess [SI Faculty]** on Oct 11, 2007
I want to continue our look at early or first words using AAC. Like it or not, the adults are the ones putting the words and selecting the symbols to represent the words on AAC

systems. So being aware of the evidence-base to support these critical decisions is important.

I want to summarize some of the findings from a study by Adamson, Ronski, Deffebach, and Sevcik titled "Symbol vocabulary and the focus of conversations: Augmenting language development for youth with mental retardation." The two year study reports the use of speech-output devices by 12 youths with moderate or severe mental retardation and severe spoken language disability. For the study, the words were listed as vocabulary types and categories as Referential: food or drink, leisure, place, utensil OR AS Social-Regulative: affirmation/denial, cognitive, emotive, greeting, politeness term, qualifier. I believe it would be safe to say the referential words were extended or fringe vocabulary since they were all nouns. The social-regulative words were core.

Here's the list the social-regulative words in alphabetic order:

Be quiet
excuse me
Good
Goodbye
Help
Hello
I'm finished
I want
I'm sorry
More
No
please
Stop
Thank you
Wait
Yes

I'm not going to going into detail about the results, practitioners should be aware of the research methodology and conclusions. Parents can feel assured that their insights into what words are important are supported by the study. I just want to quote from the paper as published in JSHR in 2003:

"The study has an important clinical implication regarding initial vocabulary selection. Our findings suggest that the symbol vocabulary that youths with severe mental retardation can learn may have been underestimated by limiting their composition to concrete nouns. Practitioners may wish to expand their initial vocabulary selection to include social-regulatory symbols. The provision of such vocabulary may facilitate symbol development, community inclusion, and ultimately alter perceptions of an individual's competence."

Adamson, L. B., Ronski, M. A., Deffebach, K. & Sevcik, R. A. (2003). "Symbol vocabulary and the focus of conversations: Augmenting language development for youth with mental retardation." *Journal of Speech and Hearing Research*, 35, 1333-1343.

- o **Re: AAC and Early Language Development from Robin Hurd by Sandra Johnson** on Oct 12, 2007

I have been looking into AAC devices such as the Easy Talk and tango!, but was wondering what the experts thought about using AAC devices and whether it's an effective tool to increase the communication skills, or does it inhibit them by making them dependent on it?

- **Re: AAC and Early Language Development from Robin Hurd by JoanneCafiero** on Oct 12, 2007

There is absolutely no evidence that AAC inhibits speech and in fact, it stimulates it. There are some excellent research reviews available that attest to that fact (Mirenda as well as Light and Schlosser). My apologies if I have neglected to mention another author. We also notice that around adolescence, even kids who have used AAC begin to generate more speech and they begin to perceive themselves as speaking communicators and give up their AAC. That can be a problem because sometimes their speech is not intelligible. AAC compensates for difficulties in language the way that glasses do it for eyesight. Sure we're dependent, but that's ok.

- **getting started with young children** by **msebu** on Oct 11, 2007

I had a class of very active 3-5 yr. olds. We started with any kind of food wrappers of treats they loved. We pair the treat with the food wrapper over and over again, even as they ran around. Then we put the wrapper on a cheap cutting board with velcro and we did hand over hand to pull it off. Make a big deal out of it! We added another treat and continued to have symbols of up to 9 treats. We expand this to pictures of themselves and activities. Does anyone use Cheap Talks? They are button devices of a variety of sizes and shapes. Battery operated. The kids love them! You can velcro on pictures and add voices. It is so great to watch them figure out what they want and try to say it!

- **wow factor** by **pmcclure** on Oct 12, 2007

I have learned about so many great resources from reading your posts. I am cutting and pasting posts that are relevant to my needs to keep in a reference folder. Thank you for all your great suggestions and explanations.

- **Use with deaf/blind population?** by **pmcclure** on Oct 12, 2007

I am also serving children and babies with deaf/blindness. It seems that a lot of the same techniques might be beneficial with this population. Has anyone found some good techniques/strategies to enhance language development with the sensory-impaired population?

- **Re: Use with deaf/blind population?** by **LeanneGrillot** on Oct 14, 2007

I am a teacher of the visually impaired and currently have a student who is blind (light perception only) and considered to have ASD. She is nonverbal and now in the 5th grade. We knew that pictures were impossible for her to see and raised line drawings are just as hard to interpret. We started with four tactual symbols attached to a 9-square GoTalk. We kept the symbols widely spaced into the equivalent of numbers 2,4,6, and 8 on a phone. We started with eating symbols since there were three opportunities during the school day for us to reinforce the communication. For drink we chose a piece of straw; eat was a spoon; bathroom was a piece of toilet paper; all done was a tactual circle with a line through it (like 'do not enter'). She has progressed and we have added another 5 symbols on level 2 - placing them into the equivalent of numbers 1,3,5,7,9. This level was for environmental control. She had a sensory area set up that she could control by two switches. The two choices she could pick from were a fan, a light box, music, a vibrating pillow, and lotion. Again, I made tactual symbols for each choice and velcro-mounted them to the GoTalk. She has become pretty consistent in her choices and does have favorite activities. I hope this helps! I also work with a child that is deaf/blind but her vision is much better and she can identify photos so that is what is used for her communication system (line drawings she doesn't seem to recognize).

- **Re: Use with deaf/blind population?** by **teresapinder@yahoo.com** on Oct 14, 2007

Dr. Karen Erickson has gotten some really good results using the tactual symbols.

There is a lot of info. at her web site:
<http://www.med.unc.edu/ahs/clds/resources.html>
scroll down to "Alternate Pencils"

- **Re: Use with deaf/blind population?** by **pmcclure** on Oct 15, 2007
Thanks for the suggestions. Very creative and easy/cheap to do. I work with two age groups- Birth to 3 in a contract position for early intervention for sensory impaired and high school students in an EMD program with a variety of secondary disabilities.
- **Re: Use with deaf/blind population?** by **CScott** on Oct 15, 2007
I am a speech pathologist who worked with a student in elementary school who had cortical blindness, was non-verbal, and had many spectrum characteristics, including sensory defensiveness. In conjunction with our low vision specialist, we developed a "PECS" type system using tactile symbols based on a symbol set from the Texas School for the Blind. Their website is an incredible cache of instructional strategies for students with vision and multiple impairments; this includes a comprehensive discussion of teaching students with both autism and visual impairments. One challenge in working with the student I mentioned above was his sensory defensiveness, particularly to touching anything (even though this would become an important "input" modality.) The early months of my work with him was spent on reducing his tactile defensiveness and "working" with his hands, teaching him turn-taking and engagement routines. It laid the groundwork for later "PECS" style training, in which he would hand-off tactile symbols to communication partners. Within a year of beginning his PECS training, he began to babble during play, and single words began to emerge. Check out this link for further information: www.tsbvi.edu
- **Re: Use with deaf/blind population?** by **teresapinder@yahoo.com** on Oct 20, 2007
The Texas School for the Blind has done a lot of wonderful work with really tough kids!! Dr. Erickson used parts of your tactile system in her research. But tweaked it using an intellikeys overlay, with color (to take advantage of any possible vision) and shape according to parts of speech. Starting with comments about books being read to them and "free" writing activities-with auditory feed back- over time the students (significantly disabled, deaf, and blind) were able to demonstrate beginning literacy skills.
teresa

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- **digital technology** by **msebu** on Oct 12, 2007
I was in awe of some of the things Matthew was asking us to think about. The whole thing of having a sensor to identify anxiety, etc. was especially intriguing. If you don't have autism or know people with it (asperger,also) it is hard to understand how frightening the act of going through the day would be. Will have to spend some time here. Thanks, Matthew for the challenge.
 - **Frightening and challenging indeed** by **Jackie Hess [SI Faculty]** on Oct 12, 2007
You're so right. I once heard a student on the high end of the autism spectrum, with auditory processing deficits, offer the following analogy, which I've found useful in dealing with a number of students. He compared it to being like a television without channels. If you can imagine having the auditory and visual input from a half dozen different programs coming in at once, without the benefit of channels to separate and organize the raft of signals, you can begin to understand how confusing and therefore scary it can be. A neurotypical brain will automatically sort sounds in terms of background versus foreground and will group the ones that seem to belong together (i.e. in the same conversation). Brains with auditory processing deficits do this very imperfectly.

Small wonder then that students who learn to compensate often do so by zeroing in on a limited set of inputs, while forcibly ignoring the others. That helped me understand why I sometimes have to place myself visually between the student and the focus of his attention

and also why that can be jarring to them.

Many teachers are unwilling to repeat their instructions, believing that it discourages the student from paying attention the first time. While I'm sympathetic to not wanting to constantly repeat oneself, one has to understand that students with auditory processing deficits often have to be permitted a time lag, and given a visual cue, to create a "new channel" and then switch to it before they can take in the auditory input (eg., the directions, information, etc.).

- **Re: Frightening and challenging indeed** by **Brenda Scott** on Oct 21, 2007
Jackie, the description of "television without channels" is an interesting one. I had a student with ADHD tell me one time his brain was like a radio that just constantly switched from station to station. In his case, he was able to separate the channels (he had only one coming in at a time), however, his channels were constantly shifting. I do believe (but without scientific evidence, so it is just a belief on my part) that one day we will find some links between ADD/HD and AU in terms of brain organization and processing.
- **Re: Frightening and challenging indeed** by **msebu** on Oct 22, 2007
I like the television without channels, too. I try to remember to suggest social stories (even if I am making them up right then and there) to put a visual in the communication process. It must be so frustrating. I am seeing a little less patience now that the school year is in full swing. I am gently suggesting social stories or an AT evaluation-I think the adults can hear it, too, now.

- **AT - Autism - Universal Design for Learning - Thought I'd make Sure we are All on the Same Page** by **Sean J Smith** on Oct 12, 2007

Hello all,

As I have read many of the posts affiliated with this Institute, I am being reminded that a number of things being shared are truly universal in nature. That is, while they employ components of the AT Considerations Process and/or Good Planning; they are also taking advantage of universally designed applications and employing them into the lives of individuals with disabilities. Now, I apologize for the review for some but wanted to ensure that everyone was on the same page when it came to the idea of Universal design for learning and how technology lends itself as an excellent application to support this framework.

Many of you are familiar with the concepts of Universal Design for Learning (UDL). That is, when we provide flexible and versatile learning environments for all of our students, we are utilizing the concepts of Universal Design. CAST (see <http://www.cast.org>) a leader in research and implementation of universal design for learning talks about three "key dimensions" which should be included in any universally designed curriculum. These include:

- Providing multiple representations of content;
- Providing multiple options for expression and control; and
- Providing multiple options for engagement and motivation.

In the 2004 reauthorization of IDEA, the term "universal design" was officially defined within the federal law governing special education:

The term universal design has the meaning given the term in section 3 of the Assistive Technology Act of 1998.

Assistive Technology Act of 1998's definition of Universal Design is:

The term universal design means a concept or philosophy for designing and delivering products and services that are usable by people with the widest possible range of functional capabilities, which

include products and services that are directly usable (without requiring AT) and products and services that are made usable with AT.

For more information please see - <http://www.cast.org/research/udl/>

Another good resource is - <http://www.cast.org/teachingeverystudent>

Now, an example of some recent efforts that are UDL and IDEA related has to do with the recent news that came out from the US Department of Education. That is, they just awarded 32 million dollars to Bookshare (bookshare.org) to expand upon the 33,000 plus digital books already available on this site. The site was originally developed to assist those with visual impairments to get access to text in a format from which it can be easily altered for access. Now, the beauty of the digital format is that it is flexible to be used for those with reading challenges. That is, I can easily bring this into a text-to-speech application (e.g., readplease.com) and have the text read to me. I can also alter the text to summarize it and/or modify it for the reading needs of the learner. So, the point here is that digital text has a variety of flexible uses and can be structured in a manner applicable to the needs of the individual. This is a brief example but hopefully gets us thinking within the realm of UDL and technology.

Let me take this further into the transition and technology world.

Alexander (Alex for short) is a young man with Aspergers who has wonderful decoding and vocab skills but struggles with comprehension. Bringing things together and making sense of the reading is difficult. Yet, Alex is quite bright and so he spends a fair amount of time in some honor classes and will soon be in the position to consider AP classes. However, he struggles in areas of these classes and his grades are clearly not representative of his abilities. Likewise, the time it takes Alex (and his mom and dad) to get through this work is incredible. They have hired a tutor and they spend countless hours trying to empower him with the strategies that he can use to succeed in this curriculum. Some might argue Alex should take an easier load, to which Mom would reply, he is capable, he is very interested, and he wants to take these courses. Alex just needs the right supports.

So, as mom and dad looked for things that worked they found Inspiration. Dad found it online and thought it was great for him in organizing his day and visually connecting dots he often missed (yes, dad might be on the spectrum although he has never sought testing). Anyway, they began using Inspiration at home and saw that with the right concept maps, Alex was able to break down the reading, understand the important parts, and thus, study the critical issues. As a result, Mom and Dad asked that Alex use this in school. Of course, like many school districts throughout the country, Alex's school had access to this program but just wasn't using it. They began to use it and it is one of a number of strategies that are really making the difference. At present, this is not listed as an AT consideration but instead, listed as an accommodation (yes we could discuss the plusses and minuses for this) on his IEP. The point I'm trying to make is they took something available on the classroom and general society, and used it for his specific need. It has components of UDL in its application but also, is simply a resource that goes beyond a particular focus (e.g., AT).

Now, as Alex is getting ready to transition into a postsecondary academic setting, he has use of a tool that will make the difference in his understanding, studying, and applying information. This will not be seen as an AT device and will not need the supports from the Office of Disability Services at some two-or four year college. However, it will be critical to his success and something he can use for varied purposes throughout his life.

- o **Re: AT - Autism - Universal Design for Learning - Thought I'd make Sure we are All on the Same P** by teresapinder@yahoo.com on Oct 14, 2007

What comes to mind is the saying "one man's trash is another man's treasure" Great points and story!

teresa

- **Re: AT - Autism - Universal Design for Learning - Thought I'd make Sure we are All on the Same Page** by **Anita Swan** on Oct 22, 2007

To Sean J Smith: Thank you so much for this wonderful information. I visited the sites that you suggested. They are wonderful, and very easy to understand. I am also referring my parents who request information to these sites. Your suggestion of Inspiration was right on time for me. I have given a couple of parents this information. Does anyone have any more information regarding the Inspiration software? I found it online, and I'm interested in the Kidspiration. Have any of you tried it?

Thanks

- **Re: AT - Autism - Universal Design for Learning - Thought I'd make Sure we are All on the Same Page** by **Joan Breslin Larson** on Oct 22, 2007
Typically, I have folks use a trial version of Kidspiration- I think you can get a 30 day trial from the company. I personally like the program, but would not recommend it for anyone until I either knew more about them or had them try it out for themselves.
- **Re: AT - Autism - Universal Design for Learning - Thought I'd make Sure we are All on the Same Page** by **msebu** on Oct 22, 2007
I have. I am fortunate to work in a district that put it on its main list of programs that are available to all students. You can get a free trial. It is also a good UDL program, because it is so great in helping kids organize their thoughts for writing and it is fun too.

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- **Hello** by **Sandra Johnson** on Oct 12, 2007

I am a new Assistive Technology Advocate in the San Joaquin Valley and Mother Lode of California. I have only been in this position for a month now, and am still learning all the ropes. My participation in this institute is two-fold, one to glean more information about Autism and AT equipment for my new job, but also to help educate my best friend who has a son with Autism.

I don't get a chance to get on here every day, but I am trying to read up on the discussions as much as I can.

Thank you for this opportunity to learn more about Autism and AT.

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- **Hello** by **Connie Pazderski** on Oct 14, 2007

I taught preschoolers with autism spectrum disorders for the past three years. This year I am teaching students with profound mental disabilities. I am very interested in AAC for children with autism/severe disabilities. I am looking forward to this opportunity to learn from each of you.

Thank you. Connie Pazderski

- **Re: Hello** by **Joanne Cafiero** on Oct 14, 2007

Hi Connie,

It's good to know that most strategies that work well with children with autism work even better with children without the additional difficulties with socialization, joint attention, shifting attention, etc. There have been wonderful posts over the past week. You might want to browse through last week's archives for some instant information.

- **Digital Technology for Autism Research & Treatment: Part II** by **Matthew Goodwin** on Oct 14, 2007

Following the general overview of digital technologies for autism I posted a few days, the section below highlights ways that digital technologies, alone or in conjunction, can enhance and accelerate the pace of autism research and treatment. I welcome comments on these applications/needs and any further ideas not represented here.

Section 2. Benefits of Developing Digital Technologies for Autism

Screening and Early Diagnosis

The digital audio and video technologies reviewed in my previous post could be used to capture subtle features of behavior (e.g., movement, eye gaze, joint attention) and communication abnormalities (e.g., expressive and receptive prosody) characteristic of persons with autism in young children at risk for the disorder (i.e., siblings) to increase the specificity and sensitivity of diagnostic screening tools. Automated tele-assessment technologies which administer standardized neurocognitive and behavioral tests in schools, homes, and other non-clinic and non-hospital locations could also be used to transfer data to a centralized location via the Internet for algorithmic analysis, clinical interpretation, and feedback

[http://www.cslu.ogi.edu/projects/researchprojects.html#Biomedical_Projects]

Increasing Access to Resources

There are various challenges in delivering healthcare to families with autism. For example, access to professionals experienced with autism is limited and families may wait for weeks or months for an appointment. Even if they are fortunate enough to get appointments immediately, families far from major medical centers must often travel great distances to gain access to the relatively few autism experts. Telecommunication technology could support long-distance clinical health care, patient and professional health-related education, public health, and health administration. A strong partnership between parents, providers, and teachers could address the challenges of early diagnosis, treatment, and care of children with autism. School and community interventions could also be enhanced with interactive websites that allow members of a child's intervention team to access Individualized Education Plans (IEP), progress reports, and other relevant data that have been collected.

Enhance Assessment Efforts

Families often struggle to convey to neurologists, psychologists, and psychiatrists clinically relevant behaviors needed to make accurate assessments. Also, it is often difficult to accurately sample prototypical behavior during an office visit since children with autism may not demonstrate the target behavior, or may find it difficult to adapt to the clinical environment, preventing a useful examination. Telecommunication systems could improve a provider's understanding of the child's behavior and subsequent treatment plan if a caregiver had the resources available to videotape an episode of concern where and when it happened and transfer the video to the appropriate health professional via the Internet. Upon receipt, the health professional could review the video, archive the episode for future reference and research, and respond to the caregiver by phone, letter, or email. A similar system could be developed for real-time consultation using videoconferencing. Also, given the heterogeneous nature of autism, methods of better elucidating subtypes are needed to inform potentially different etiologies, developmental courses, and treatment approaches. Digital technologies including wearable and environmentally-embedded audio and video sensors could enable intensive observation of a wide variety of clinically relevant behavior across contexts and over time.

Promote Interventions

According to a recent review of publication trends in autism-specific journals, assessment research was found to be the most represented and funded (de la Cruz et al., 2006). A great majority of this research focuses on epidemiology, genetics, and neuroscience. While all of these disciplines can provide critical data for understanding the cause and course of the disorder, very little of this information translates into practice for individuals who currently have a diagnosis. There is clearly a need for more intervention research that can help individuals with autism, their caregivers, and educators. Digital technologies carry great potential for providing innovative, individualized

interventions. For instance, many people with autism are highly interested and motivated by computers, and computer assisted learning can focus on numerous academic and support areas of need such as emotion recognition, social interaction, and communication. Portable, wearable computers that record autonomic nervous system functioning and motor activity in real-time could also be used to help persons with autism understand, communicate, and help regulate their arousal levels.

Skill Generalizability

While there has been an explosion of structured learning programs for individuals with autism, many of the skills acquired during such trainings fail to generalize to novel environments. Sophisticated training packages that are easy to administer could promote learning across contexts. For instance, virtual reality technology may provide a relatively low-cost way for children with autism to practice rule learning and repetition of tasks across contexts. The aim would not be to circumvent real-world social interaction altogether, but to provide a teaching aid that would allow practice and demonstration alongside normal input from teacher or support workers.

Reducing the Cost of Treatment

The Autism Society of America (ASA) estimates that 1.5 million people in the United States are diagnosable as individuals with autism spectrum disorders (ASA, 2007). The total annual societal per capita cost (including both direct and indirect expenses) of caring for and treating a person with autism in the United States is estimated to be \$3.2 million and about \$35 billion for an entire birth cohort of people with autism (Ganz, 2007). The rising incidence of autism, exorbitant cost of treatment (e.g., behavior therapy alone can cost upwards of \$60,000 per year), and relatively limited professional resources available suggest that digital technologies should be explored to reduce some of these expenses. Linking families and professionals via the Internet and providing portable and in-home computerized educational and self-management tools may transfer skills to caregivers and persons with autism and reduce reliance on costly professional consultation.

Research Recruitment and Implementation

Research recruitment involves matching parents of children with autism with local and national IRB-approved research studies for which they are uniquely qualified. Each year, many autism studies are not completed because scientists cannot find enough qualified participants in a timely manner. Information systems technologies, such as IAN, may facilitate the process of research recruitment by using the Internet, which is widely available regardless of income, education, race, and ethnicity to significantly increase family participation. Interestingly, among the families who registered during the IAN pilot phase, 80% had never participated in any autism research. In addition to this role in recruitment, information technologies can have a crucial impact on the ease of conducting research in geographically distributed populations. For instance, the Game Design Initiative at Cornell, part of the Cornell University Faculty of Computing and Information Science, has been working in cooperation with the Cornell University College of Human Ecology on software that facilitates integrative research on autism by encapsulating psychophysical, attentional, and social cognitive experiments in the engaging context of a video game – a format more ecologically valid than the standard, repetitive blocks of trials that characterize most psychological experiments. Once this software is completed, volunteers will be able to download the game freely, consent electronically to collection and transmission of behavioral data, and schedule follow-up diagnostic screening and psychometric evaluation.

- o **Re: Digital Technology for Autism Research & Treatment: Part II** by Joanne Cafiero on Oct 14, 2007

What an awesome, comprehensive description of some exciting technologies. I do considerable action research in classrooms partnering with autism practitioners. It is so rewarding to be able to translate this research to practice almost immediately. What is most difficult however, is time. Practitioners are not academics and they are not paid to explore research options. In fact our system of education, as it is now, does not really even support action research. Practitioners must do this work on their own time and when they have the opportunity to present their work it is often at their own expense.

These technologies sound so applicable to families and classrooms. What kinds of supports and strategies are needed to recruit teachers, speech paths, OTs, PTs, and psychologists to engage in Action Research applying these technologies? The research to practice timeline can be as long as 15 years, but with Action Research, that is significantly shortened.

- o **Re: Digital Technology for Autism Research & Treatment: Part II** by **Laura** on Oct 16, 2007

Wow, that is a lot of good information. I think that the expense of testing for autism should be made more available to parents from their medical practitioners. I see that some children are being needlessly tested for autism. Insurance often does not cover what they consider to be behavioral testing, something that many people are not aware of until they receive the \$700.00 bill (or more). A parent may be just trying to do what is best for the child, but finds out that the test was needless and very costly. Sometimes, waiting and observing a child at home and school, and giving them a chance to mature is more informative and appropriate than testing done at an early age (before age 7). I am speaking of those children thought to have Asperger characteristics, not those with severe autistic characteristics. Working in the schools, I do see some kids diagnosed with autism when the school team sees it as inappropriate. Once a child is labeled, that will stay with that child. There are other options to get the proper assistance for the child at school at an early age without needing the label of autism. I agree that testing could be made more accurate across environments with digital technology such as video tapes taken at school and home, vs an office visit test and a profile which parents complete. Perhaps there could be a qualifying gathering of information to even see if testing is appropriate using the digital technology. Research utilizing a video game to gather the appropriate information and offer diagnostic screening and eval if appropriate is a creative and hopeful use of technology with autism. Thank you for the info.

-
- **funding of tech/match to individual** by **msebu** on Oct 14, 2007

I think it is very important to have a well developed picture of what the AT is that is being considered and to have the individual be able to try it out for a while. I remember when Canon Communicators were the big item. They were o.k. for a while until they got thrown, then they weren't very durable.

There is a group in Ann Arbor-the Ann Arbor Autism Foundation. They raise money and grant money to parents to help pay for things that they can't afford or help pay part of something. There was a race that allowed people to pick a charity to run for. They made over \$6,000 just from that. I know it isn't a lot, but it could help people get started.

We have a very well stocked AT Lab. That helps to show people what they are paying for and how it impacts a person's life.

- o **Re: funding of tech/match to individual** by **Joanne Cafiero** on Oct 14, 2007

I agree. As a practical matter, technology for people with autism (or anyone for that matter) needs to be durable, water proof and have an excellent repair history; like needs no repairs! It is so difficult when a student finally adopts a device as his/her voice and ears, and the thing stops working. This has been a chronic problem. Not only is it an outrage that a student lose his communication tool, but it also discourages autism practitioners and families, the REAL communication partners, from personally investing in the use of the device.

-
- **giving children a sense of themselves** by **msebu** on Oct 14, 2007

I inadvertently found out that the child I was working with referred to himself in the 3rd person. "He hit him" meaning the child hit a para-educator. We would say "You" but he didn't have a

connection of who "You" was. I love the movie making idea to help children get a sense of who they are-how powerful to see what the day is like for them.

- **Re: giving children a sense of themselves** by **pmcclure** on Oct 15, 2007
My students love seeing themselves on the screen after we videotape them. It is a powerful tool.
-

- **Communication Interventions for Older Students with ASD** by **joannecafiero** on Oct 15, 2007

I would like to open a discussion on communication interventions for MS and HS and adults with ASD. In particular, students/individuals who either had no opportunity to develop communication through AAC or had limited or poorly invested communication partners (parents and professionals). In general, most of the thrust is for the newly Dx children. Parents are focused; teachers and other professionals are more likely to want to work with the little ones. By the time someone in the spectrum reaches adolescence, family members are exhausted. I can't count how many adolescents and adults with clear cognitive and communicative potential have been pushed through programs, exiting with NO viable, real and functional communication system. Are other practitioners seeing these people too? What interventions are being provided? How are they different from what is being done for the 3 - 8 year olds?

- **Re: Communication Interventions for Older Students with ASD** by **pmcclure** on Oct 16, 2007

I do find that there are older students that have a lot of communication issues that have not been addressed. Within our school, we try to provide a multitude of opportunities for social interactions within the school and community. Using natural settings to establish appropriate social communication skills seems to have the most success. Sometimes, we create situations to occur to promote certain responses. For example, talking to people ahead of time to let them know that the student will be coming by to visit. We discuss ways to promote conversations with this student-like discussing their interests, explaining responses we are working on at the time, etc. Practicing responses to common social encounters, then practicing them in the community seems to find a great deal of success with our students.

- **Re: Communication Interventions for Older Students with ASD** by **kelkamp** on Oct 16, 2007

I also see that, with older students like this, when they transition from early childhood to elementary to middle school, etc...their communication systems do not always get passed on to the next environment. This is particularly problematic when the parents have not been involved in/receptive to the communication system introduced to the student. One way to address this particular problem is to make sure that a communication profile stating what system the child uses and what has been tried in the past is in place for each student when he/she exits a school. This profile should be placed in the student's file and passed on to the receiving teacher. This, of course, will not always work...but it should reduce the number of students whose systems are "lost". I am sure this is quite frustrating for a student, to lose his/her system and then have to start over on a new one, or not be offered access to one at all.

- **Re: Communication Interventions for Older Students with ASD** by **neroid** on Oct 17, 2007

I work in a high school program for adolescents with moderate to severe autism. The majority of my students are nonverbal or minimally verbal. My students are all referred from home school districts that are unable to provide appropriate supports to educate them. All of my students have behavioral issues arising from their lack of communication skills. Most of them come in with no useful system that has been consistently implemented. Few have had any behavioral analysis performed to determine the communicative functions of

their behavior let alone had appropriate communication interventions implemented. My job as an SLP is to start from the beginning and give them workable, functional systems and develop a desire for them to communicate in more appropriate ways. The intervention strategies I use fall along a continuum consistent with developmental steps (e.g, I may need to start at joint attention development). I have been trained in and use the SCERTS model. My opinion is that the age of the student doesn't matter so much as where their communication development has stopped. Working on a developmental continuum I have seen progress with students who had made none for years. My hope is that more practitioners will see the value and importance in giving students functional communication training that has meaning for their lives.

- **Re: Communication Interventions for Older Students with ASD** by **joannecafiero** on Oct 17, 2007

Thank you for your responses. I think this issue is extremely important. All behavior is communication. Until a practitioner really believes this, adolescents in the spectrum will be misunderstood and their academic, emotional and social needs will not be met. Requiring that a file or information be transitioned to new environments makes sense BUT if a student really has a living, breathing communication system, that system should be part of his or her persona and there should be no need to use forms and words to signal to the next provider.

How can we get to this place?

- **Re: Communication Interventions for Older Students with ASD** by **neroid** on Oct 18, 2007

I believe that until there is universal understanding of the concept you mentioned - "a living, breathing communication system that is part of their persona", these pitfalls will continue to occur. Sadly, many practitioners do not understand the inherent need to provide useable systems to persons with autism. I have seen many students who have had systems that were abandoned before they were established. Sometimes the communication between school and home may be lacking for the continuity of system training and use to take place. Families may not understand how to advocate for their child's best interest and may be confused about how to develop a communication system their child will use. Speech language professionals certainly need to continue to advocate for children on the spectrum and we need more training about the behavior/communication connection. I think the word must be spread early in university training programs and reinforced in school systems.

- **Re: Communication Interventions for Older Students with ASD** by **joanne cafiero** on Oct 20, 2007

I think we can identify several issues that preempt older children, adolescents and adults with autism from receiving the tools and supports for an augmented system:

1. Preconceived notions that it is "too late". If it hasn't happened yet it won't ever happen. As far as this is concerned, if our brains become fossilized by adolescence and adulthood, none of us would be on this site learning; it would be too late for us too. I think many practitioners think that people in the spectrum are so qualitatively different from typical folks that simple learning theory doesn't apply. Sure it's more difficult to learn after patterns of learned helplessness, dysfunctional communication patterns have occurred, but no reason to give up.

2. AAC for Autism is new. In light of the fact that the research to practice timeline in education can be as long as 15 years, many practitioners are not aware of the power of AAC. It is important for all

of us to do the action research in our practices, let that inform what we do for our students, and then publish or present the results. This can speed up this research to practice timeline.

3. By the time someone with ASD gets to early adulthood, lack of a viable communication system has been accommodated for, through non-symbolic dysfunctional behaviors. When these appear, practitioners tend to think that this person is "too low" or too behaviorally disordered to benefit from an AAC intervention.

4. The sheer intensiveness of beginning an AAC intervention with a person who has not had the benefit of one early on, is significant. (In fact AAC interventions are intensive anyway).

5. Lack of understanding regarding the importance of the communication partners. I did a study (that was published in 2001 in Focus on Autism) detailing my experience with a student who when provided with consistent receptive language input with no-tech communication boards increased his expressive language by over 300%!!!!. While this was an action research study conducted in a classroom, and not tight scientifically, I have seen similar results in other classrooms. The communication partners must view this system as the ears and voice of the AAC user. The partners must also communicate verbally and by pointing to symbols/words while doing so. For example, using a portable keyboard to provide input, as a model and acknowledgment of the system is essential. I know of a young man who received YEARS of receptive input from his Mom before he generated expressive language. She didn't give up and neither should we.

There are probably more reasons why this population does not receive the supports they truly deserve. The question we ask now is, what do we do about it? I am going to list a few of my ideas and would welcome input.

1. Assume communicative potential regardless of behavior, prior history, standardized testing, prior records, etc.

2. Don't automatically start with PECS. Begin giving input with environmentally specific visual language systems. Also don't always assume that PCS are needed. Many of these folks have become literate in spite of what they never received in school.

3. Consider difficulties in motor planning as an access issue. Look for subtle signs of comprehension: eye contact with the symbol/device, orienting the body towards their communication partner or device, compliance or acceptance of a situation when AAC is mediating it. These often as signs of understanding and the first step in an AAC intervention.

4. Don't create arbitrary time lines: "he/she must generate expressive language within X weeks or it doesn't work.

These are some of my ideas. I am looking forward to hearing others.

- **Re: Communication Interventions for Older Students with ASD** by msebu on Oct 22, 2007
I liked what you had to say, Joanne. I am thinking about a

young person who is experiencing some pretty severe consequences to behavioral acting out-much of which is related to very limited AT use-he can say some things, but people take that as all they can say. I think people also have to allow practice for use of AT in relaxed settings and in stress settings-like learning to drive the car and then driving in a number of different situations. People will say things don't work, because the person has a hard time using it in a difficult situation.

- **Re: Communication Interventions for Older Students with ASD** by **Connie Pazderski** on Oct 23, 2007

Thank you for the great information. Your ideas are very good, especially in indicating difficulties in motor planning as an access issue and the need to look for subtle signs of comprehension when AAC is mediating a situation. What are the no-tech communication boards you refer to above that increased the student's expressive language 300%? Are these boards with symbols/pictures/or objects only - no voice output?

- **Avert behavior crisis** by **msebu** on Oct 15, 2007

It has been helpful to use pictures to practice refusal and "I don't...". I had one young man go and hide the pictures by picking up the trash bag and putting them under the bag, in the trash container. When I told him he could just point to "No", he smiled and did that from then on.

- **Re: Avert behavior crisis** by **pmcclure** on Oct 15, 2007

Too funny!!!

- **Still has Autism-back to research** by **msebu** on Oct 15, 2007

I am glad there is such a strong desire to do research. People forget that the person has autism because they look good and/or can communicate. I have been thinking more about the sensors for anxiety-does anyone know someone who has tried this?

- **Re: Still has Autism-back to research** by **joannecafiero** on Oct 15, 2007

Can you please elaborate on what you mean by "sensors for anxiety" ?

- **Re: Still has Autism-back to research** by **matthew goodwin** on Oct 17, 2007

Hi Joanne. Jackie was kind enough to start a new thread on stress, arousal, and anxiety. In a future post, I'll describe some work we're doing to develop wireless autonomic nervous system sensors for persons on the spectrum to quantify and broadcast arousal responses. Stay tuned!

- **Hello:** by **eaustin@paraquad.org** on Oct 15, 2007

Since so many students are now being identified as persons with this type of disorder it is welcoming to know there is information out there to assist parents and professionals with understanding assistive technology that can support personal growth and independence. I am looking forward to weighing the facts.

- **Strategies for Youth with Autism** by **carmen duran** on Oct 15, 2007

Colleagues: Good news from Washington, DC!

I want to share this information with all of you:

I just got a press release from the Kennedy Krieger Institute in Washington, DC announcing the expansion of Autism Education Services. On September, 18, 2007 a Specialty Autism School opened in Montgomery County, Maryland. This new school is for students ages 10 to 21 with moderate to severe cases of Autism Spectrum Disorders (ASD) and other developmental disabilities. The Kennedy Krieger school will be the only specialty autism school of its kind in Montgomery County, MD. Linda Branderburg will be the Director. The school will feature individualized programs with a high staff to student ratio. In addition, the school will offer a new multi-sensory room that use lights, sounds, aromas and textures to promote learning for autistic students, as well as a new, interactive, technology-driven teaching tool used to provide specialized accommodations and modifications for learning. A key academic and curriculum goal is to apply the skills students learn in the classroom in a community setting, as research has shown that teaching skills in context is more effective than in isolation.

Furthermore, the Kennedy Krieger Institute is in the process of launching a new hands-on autism training program for public school teachers. Beginning in the Summer of 2008, applications for teacher candidates to the Model Demonstration Program will be available, with the first cohort of trainees to begin in September 2008.

For Media Inquiries:

Emily Butler ebutler@spectrumsience.com

For more information on the Kennedy Krieger Institute:

www.kennedykrieger.org

- **Software for hyperlexic preschool student?** by **kelkamp** on Oct 16, 2007

I have a student, 4 years old who has autism. He is nonverbal but is using a communication device nicely and is progressing quickly to the upper limits of the device. He LOVES the computer and can operate a mouse independently, perform simple computer functions, etc. He is also showing a definite tendency towards hyperlexia as he is beginning to recognize words, etc. I am looking for some software that might teach beginning reading/typing/writing skills because I think he might learn to read quickly using the computer (it is his most highly motivating activity). If he could read then he could progress to a word-based AAC system...wouldn't that be wonderful? Any suggestions are very much appreciated, thanks!

- **Re: Software for hyperlexic preschool student?** by **janet** on Oct 16, 2007

Widgit software makes "First Keys" which may address the student's goals:

<http://www.widgit.com/products/firstkeys2/index.htm>

I've seen it in the Mayer Johnson catalog too.

Simon Sounds it Out by Don Johnston www.donjohnston.com is also a very popular program to teach phonics and simple vocab- there is also a keyboarding and recording option.

Edmark Reading Program may be a good choice if you want to teach basic sight words www.riverdeep.com (under the special needs section). Words Around Me, also by Edmark/Riverdeep is good too for visual learners.

- **A question about Autistic Disorders and Asperger's Disorder** by **carmen duran** on Oct 17, 2007

A question to the Moderators: I am trying to learn about this topic as much as I can. My question is: the difference between the Autistic Disorders and Asperger's Disorder is most noticed in the communication area: there is not a significant delay in language or cognitive development or age appropriate self help skills (for Asperger's Disorder). Can one of the moderators clarify this for me? A second question: are there clear differences between the two Disorders?

I have seen diagnosis back and forth. Please help. Thanks, Carmen

- o **Re: A question about Autistic Disorders and Asperger's Disorder by Jackie Hess [SI Faculty]** on Oct 17, 2007

Carmen,

I'll post a longer reply later, but I wanted to tell you about a new book on Asperger's which is the best I've seen (and I've done a lot of research on AS, as my son has it.)

The book is entitled, "School Success for Kids with Asperger's Syndrome." The authors are Stephan Silverman and Rich Weinfeld. (Prufrock Press, 2007) It's extremely readable, while referencing a great deal of very current research. It definitely addresses the relationship between AS and other parts of the autism spectrum.

I highly recommend it.

- o **Re: A question about Autistic Disorders and Asperger's Disorder by Jackie Hess [SI Faculty]** on Oct 18, 2007

As promised, here are some excerpts from "School Success for Kids with Asperger's Syndrome," by Stephen Silverman and Rich Weinfeld.

Carmen, you asked specifically about the lack of language delay in Asperger's syndrome, so I'll start with a quote that addresses that issue:

"The criteria for diagnosing autism include the presence of severe language delays. With AS, these delays usually are not present; however, clinical experience and research reveal that there are differences in the use of language by persons with AS.

Although many of the features of advanced language are present in children with AS in terms of the sophistication of formulating and making connections within language networks, there is a critical lack of ability to employ language interactively to practical ends, except to make requests or demands or to inform others of details that might not be relevant to anyone else's interests. There are differences in pace and prosody (the rhythm of words and stressing of syllables). Ghaziuddin and Gerstein's research (1996) suggests that the pedantic speech of people with AS is helpful in differentiating the diagnosis of AS from high-functioning autism. However, persons with AS' ability to exhibit well-formed, complex speech patterns is superior to other forms of autism, including high-functioning autism."

The authors discuss at length how difficult it can be to distinguish AS from similar symptom profiles, saying they believe that many individuals have been misdiagnosed. Small wonder, as there are multiple standards for defining what AS is and isn't.

"Howlin (2000) reviewed assessment instruments for AS, noting that differences in classification systems limited the development of accurate measures. There are currently about 5 rating scales in use or under development for identifying AS and differentiating it from other conditions. Thus far, few of these instruments have had adequate sample sizes or rigorous statistical analyses. Recently, Jonathan M. Campbell (2005) reviewed and compared the strengths and weaknesses of the 5 rating scales for AS: the Asperger's Syndrome Diagnostic Scale (ASDS), the Autism Spectrum Screening Questionnaire (ASSQ), the Childhood Asperger's Syndrome Test (CAST), Gilliam Asperger's Disorder Scale (GADS), and Krug Asperger's Disorder Index (KADI)." (They go on to comment on the strengths and weaknesses of the different scales.)

The authors also comment on the tendency to make a clinical diagnosis so that educational services can be provided when a child may simply need the services, but may not actually meet clinical criteria for diagnosis. (I'm not sure I made that clear. The point is that we should give kids the services they need without having to pathologize them.)

- **HI (a wee bit late)** by **bettyblanton** on Oct 17, 2007

I am just getting back from fall break and hoping to join in. I am a special educator with too many years to count working with all types of children in need. I have had several students with autism in my classes and they are constantly and always a joy. In my new position as our special ed literacy leader for the county (honk if you know anyone else doing that!) I am observing, modeling for teachers, and being asked all the time for ideas that work for students with ASD. Many of the ones I am seeing are at the higher end of the spectrum with a few being more impaired. I look forward to joining in and learning new ideas.

- **Re: HI (a wee bit late)** by **teresapinder@yahoo.com** on Oct 17, 2007

Hey,

better late than never.... I will be posting several web sites soon and so I hope to be able to provide useful info.

teresa

- **Stress & Coping in ASD** by **Matthew Goodwin** on Oct 17, 2007

Many of you have indicated that stress, arousal, and anxiety are important factors when working with persons on the autism spectrum. I agree heartily, and am pleased to say that myself and my colleagues have done a lot of work exploring innovative ways to assess stress and teach coping to individuals with ASD. Over the next few days, I will make some related resources available and welcome your comments, questions, and reactions to these vital, yet underrepresented, issues.

- **Stress, Coping, & Self-Control in Autism** by **Matthew Goodwin** on Oct 17, 2007

In an effort to provide a relatively brief and cogent overview of issues relating to stress, coping, and self-control in autism, I'm reproducing an article I co-authored with June Groden and Pat LeVassuer from the Groden Center (www.grodencenter.org). The original article was published in the Autism Society of America's magazine "The Advocate" last year. In a future post, I'm happy to suggest ways to assess stress in persons with ASD who have idiosyncratic behavior and provide unreliable self-reports.

Stress, Coping, & Self-Control in Autism

This article will describe stress, one of the most overlooked problems in autism (Baron, Lipsitt, & Goodwin, 2006; Groden, Baron, & Groden, 2006), and three important variables which can impact it: demand, support, and control. We will also describe self-control procedures that can be used with this population to reduce stress, and produce a relaxed state that is optimal for learning and will promote positive behavioral and physical health.

Stress and Autism

Although the role of stress is apparent in many self-reports from people with high-functioning autism, there is surprisingly little research in this field. Individuals with autism who can report their feelings verbally have stated the following: "No one really understands what the emotional suffering of a person with autism is like...It is the confusion that results from not being able to understand the world around me, which, I think, causes all the fear. This fear then brings a need to withdraw." (Jolliffe, Landsdown, & Robinson, 1992, p. 12). Others report "...[feeling] very nervous about everything...fear[ing] people and social activity greatly" (Volkmar & Cohen, 1985, p. 49), and that "...the real world [was] terrifying...stress showed in my speech, my actions, my relationship with others" (Grandin & Scariano, 1986 p. 79).

The characteristics of autism can also exacerbate the problems of stress (Groden, Baron, & Groden, 2006; Groden, Cautela, Prince, & Berryman, 1994). These include: (1) communication deficits that

prevent persons with autism from effectively expressing their needs, socializing, understanding conversations, receiving cues from nonverbal language and facial expression, and having the ability to take another person's perspective; (2) socialization deficits that can make social interactions aversive, leading to repetitive, isolated play, and avoidance of others; (3) sensory problems in hearing, vision, and touch can increase central nervous system arousal; (4) physical factors typical of this population, such as seizure disorders, gastrointestinal problems, and ear infections can trigger a stress response; (5) and deficits in executive function (including skills of planning, inhibition, flexibility, organization, and self-monitoring) and hardiness (ability to accept challenges, make commitments, be confident, and have self-control) can impair this population's ability to perceive, comprehend, and cope effectively with stress.

Stress is the physiological reaction of the body to life situations that can be either positive (eustress) or negative (distress) (Selye, 1956). A stressor is any environmental, social, or internal demand that requires an individual to make an adjustment (Lazarus & Folkman, 1984). Stress is closely associated with anxiety. However, one can have stress without anxiety, but cannot have anxiety without stress. Coping strategies, therefore, are important in preventing anxiety responses from occurring. Coping strategies are behavioral and cognitive attempts to adjust to situational demands that are perceived to exceed an individual's ability to adapt (Lazarus & Folkman, 1984). People who effectively use buffers to deal with stress have been found to lead a healthier and better quality of life than people who do not (for a review see Turner & Roszell, 1994).

Before developing coping strategies, it is important to assess the stressors for each individual so that procedures are personalized to match specific conditions and situations. These assessments typically include direct observation; paper and pencil surveys; and interviews with parents, teachers, and other caregivers. A functional analysis uses direct observation to discover antecedents, target the problem areas, and identify consequences, and is an important component of the assessment process (Grodin, Stevenson & Grodin, 1996). The Stress Survey Schedule (Grodin et al, 2001) is an instrument for measuring stress in the lives of persons with autism and other developmental disabilities, and identifies that following eight dimensions of stress: anticipation/ uncertainty; changes and threats; unpleasant events; pleasant events; sensory/personal contact; food related activity; social/environmental interactions; and ritual related stress. An analysis of 180 Stress Survey Schedules completed for students at the Grodin Center (a treatment and educational center for persons with autism and other developmental disabilities in Providence, RI) found that the following items were most frequently rated by staff as moderate-to-severe and severe: receiving a reprimand, being told "no," being in the vicinity of noise or disruption by others, transitioning from preferred to non-preferred activity, having to engage in not-like activity, change in environment from comfortable to uncomfortable, being prevented from carrying out a ritual, being prevented from completing a ritual, receiving criticism, being interrupted while engaging in a ritual, waiting for preferred events, and having a change in task to a new task with new directions.

A few years ago, Leonard Levi from the World Health Organization presented a useful depiction of stress responses at an international conference on stress management. The most stress occurs when there is high demand, low support, and low control. Conversely, low demand, high support, and high control produce relaxation; the optimal condition to promote learning and good behavioral and physical health. Demand is any force, pressure, or strain placed on the individual. Support usually refers to significant others, including family members, friends, and teachers who help buffer against the adverse mental and physical effects of stress-inducing situations. Control is the capacity to make active responses during stressful situations, and is closely associated with a sense of mastery over the environment. The remainder of this article will describe examples of ways to foster low demand, provide high support, and teach high control in the lives of persons with autism.

Low Demand

Demands may arise from the physical environment, social situations, or task requirements. The ability to cope with demands effectively can be related to the degree of stress experienced. Environmental accommodations, instructional strategies, and acquiring specific skills are ways to reduce the stress associated with high demand situations.

Making choices. When a person has the ability and opportunity to make choices, he/she gains increased control over events in the environment. Persons with autism may need to be taught how to make a choice, beginning with the simplest two item presentation. Advancing to the use of choice-boards with or without pictures can expand the array of choices available. It can also clarify what is and is not available to choose. It is important to make sure that the types and numbers of choices offered match the developmental level of the individual. The intrinsic reinforcement of obtaining the choice one has made can lead to personal satisfaction and a sense of well-being that may reduce the occasion for stress.

Visual supports. Capitalizing on the visual skills that are typically strengths in the learning style of individuals with autism, visual supports are physical cues, environmental strategies, or specially designed tools that assist the learner to receive, process, and act on information. Gestures and body language are often visual supports, as are furniture arrangement, object placement, and the common everyday signs and symbols we all use (Hogdon, 1995). Current best practices abound with examples of individualized visual supports such as schedules, calendars, reinforcement boards, rule cards, if-then boards, and others. As organizing tools, they enhance the understanding of verbal input, provide predictability, and help make abstract concepts concrete, all of which help to improve the communication difficulties that can exacerbate stress in this population.

Schedules. Schedules are specific types of visual supports personalized to reflect an individual's needs for structure, organization, and planning. By sequencing events in time, schedules can reduce the stress associated with not knowing what will happen or how long one must wait for something. When a person participates in developing his/her own schedule, it allows a feeling of control which also helps to reduce stress.

Errorless Learning. In the errorless learning model, the emphasis is on positive reinforcement for each response, because each response is preceded by the necessary prompts to make it the correct response. Through repetition and fading of prompts, correct responses are practiced until mastery, matched with a high amount of positive feedback and reinforcement for learning. Learning tasks can then be categorized as low demand situations. The high level of positive reinforcement provided by errorless teaching contributes to self-confidence and feelings of pride, which are effective buffers in coping with stress.

High Support

In this category, another person or persons is involved in the process of reducing stress. Although the value of social support is commonly accepted in the general population, it remains an area needing exploration in persons with disabilities.

Family. Children and adults with autism frequently develop an emotional closeness to family members. Parents and siblings are usually well aware of particular people and events that are stressful for their family member with autism. That individual subsequently learns that family members can help to solve problems, obtain desired objects, clarify confusing situations, and provide comfort. By filling these roles, family members provide a high level of support that allows the individual with autism to maintain a calm response, rather than be overwhelmed by stress.

Friends. The popularity of self-advocacy groups demonstrates the importance of having someone with similar experiences to share thoughts, interests, and concerns. For persons with autism, whose social challenges limit their ability to participate in such groups, facilitated recreational and skill development groups can provide a high level of support. Several group activities at the Groden Center address this need. Adolescent groups focused on social skill development provide an opportunity for youth with Asperger's to meet and make friends. An after school recreational group provides a venue for teens to share experiences and support each other in trying new activities. There is also an adult recreation club which plans trips and other activities initiated by the members. Social supports such as these provide a setting for mutual encouragement and positive reinforcement for members; they may also provide a setting for the development of meaningful friendships. In a literature review on social supports, Thoits (1995) reports that the negative physical and psychological effects of stress can be greatly reduced by having a confidant.

Teachers. The requirements of the educational setting may often occasion stress for persons with autism. In order to provide the supports needed to achieve the optimal learning environment, teachers must take into consideration individual learning styles, instructional formats, transition strategies, task demands, and strength-based teaching. Beyond these basics, teachers must also model positive character traits, foster desired values, and plan to teach sharing, empathy, kindness, flexibility, self-confidence, and pride in accomplishment. A person who possesses these traits demonstrates hardiness, which acts as an internal buffer in coping with daily stressors.

High Control

A sense of personal control or mastery over life is one of the most frequently examined coping resources in the literature (Thoits, 1995). A number of studies show that a sense of control reduces psychological problems and physical illness and buffers the negative effects of stressors (Turner & Roszell, 1994). Taking a child's developmental and cognitive level into account, teachers, parents, and caregivers can emphasize the importance of personal control and use techniques that enable their child to exert as much control over his/her own life as possible. High control can be taught by enhancing a child's assertiveness and social skills, personal goal setting (self-management), and self-control. Self-control is defined as learning a new, more appropriate response in the absence of external cues, prompts, or contingencies. We make the assumption that self-control is not a personal quality possible only for people of a higher cognitive range, but that people with autism can also learn self-control to reduce stress in their lives. The following are examples of procedures that help promote high control.

Attribution. There is a good deal of evidence in favor of the general proposition that an individual's attributional style influences how he/she responds to life events (Rutter, 1983). If people feel that they can control their fate and make positive attributions, than they are more likely to use self-control, self-reinforcement, positive imagery, positive assertions, and other practices leading to a brighter future (Groden, Baron & Groden, 2006). Teachers, parents, and caregivers can teach children and adults with autism to exert control over their lives. Evidence clearly suggests that antecedent reappraisals of both internal and external threat and danger before the fact has a salutary effect on the later expression of negative emotion (Barlow, Allen & Choate, 2004). It is therefore important to identify stressors and change attributions before the events occur. As an example, if children find it stressful to wait in line, they can be taught that it is interesting to wait in line if they are encouraged to watch other children, or play a hand held game; thus making it appear that the line is moving faster.

Positive Assertions. Positive assertions are statements describing a person's strengths and abilities. At the Groden Center, we develop a list with input from teachers, parents, and the children themselves as to what they consider their strengths. Items on the list can be as diverse as, "I have a good sense of color" or "I share with my friends" or "I get dressed quickly in the morning and am on time for the school bus" or "I help my mother prepare for dinner" or "I am a good swimmer." The list can be extensive, but five items are typically selected and rotated daily. The teacher reads the items, which may be words or pictures depending on the child's abilities. For children with speech, they can repeat the item. For children who are able to read, they can say the items independently. The purpose of practicing positive assertions daily is to increase self-esteem. People high in self-esteem are more likely to use active, problem-focused coping responses, related to the demand itself. People low in self-esteem are likely to use more passive, avoidant, emotion-focused coping (Thoits, 1995). Avoidance is a strategy often used by persons with autism and it is therefore critical to work on procedures that deal directly with facing problems and solving them. Increased self-esteem leads to the willingness to tackle problems and accept new strategies.

Relaxation. The relaxation response, when learned, can function as an adaptive behavior that is incompatible with disruptive, stereotypic, or self-injurious behavior (Baron, Groden & Cautela, 1988). Progressive muscle relaxation procedures have been adapted to meet the learning needs of persons with special needs (Cautela & Groden, 1978). By practicing these procedures, children and adults with autism can learn to discriminate the presence of tense muscles and then learn to relax these muscles. In addition, deep breathing is taught to relax the whole body. After learning the relaxation response, the individual is taught to identify situations in which stress occurs and then use relaxation before, during, and after a stressful situation. Relaxation can also become part of a

daily routine and help decrease general stress and anxiety. The focus is on helping the individual to identify both bodily signs of stress and the situations that elicit stress. One advantage of relaxation therapy is that it can be used in any setting, including school, home, or workplace, whenever a stressful situation occurs. It is a positive, preventative strategy in which the learner actively reduces stress by engaging in a familiar routine that, through practice, becomes inherently reinforcing.

Cognitive picture rehearsal. Cognitive picture rehearsal is a pro-active instructional strategy, based on imagery techniques, that uses sequenced pictures and an accompanying script. It was developed in 1980, by June Groden and Joseph Cautela, and is the forerunner of many programs which use scripts and pictures. The pictures and the scripts create a scene or story which describes when, where, and how to use a particular behavioral sequence and ends with reinforcement for successful performance (Groden & LeVasseur, 1995). The behavioral scene depicted is typically a coping strategy, individually designed for use in a situation that has been identified as stressful for the learner. Picture rehearsal scenes are written within the positive reinforcement framework and have three components: the antecedent (A); the behavior to increase (B); and the reinforcer or consequence (C). For each individual, this information is obtained from a number of sources, including a functional analysis of the target behavior, an ecological inventory, the Stress Survey Schedule (Groden et al., 2001), and reinforcement surveys. It is then put into the A-B-C format with picture(s) and a script for each component. Each scene is designed to match the person's attention abilities, language level, sequencing abilities, picture preferences, and reinforcers. It depicts the desired sequence of adaptive behavior that a person can use in a specific stressful situation. Daily practice of the picture rehearsal scene increases the likelihood that the individual will be able to use it when the actual situation occurs. Cognitive picture rehearsal programs, a unique adaptation of imagery-based therapy, combine a proven behavioral approach to learning with a visual support system that results in an effective, internally mediated self-control strategy. An example of picture rehearsal to deal with receiving a reprimand is provided to illustrate the sequence and components involved: (a) identifying the antecedent (the supervisor corrects the work); (b) coping strategies: (1) relaxation; (2) change of attribution (anyone can make a mistake); (3) behavior to increase (adaptive response to reprimand, I start to do it again); and (c) reinforcement for using coping strategies (supervisor is happy, I am proud, I picture myself swimming).

This article provided a useful model for understanding conditions that lead to stress and focused on coping strategies available for persons with autism. It is important to remember that no single coping strategy fits all individuals. Multiple strategies should be used and personalized following assessments to identify inner (thoughts, feelings, and images) and outer (observable) behaviors that are affected by stressors. Through careful practice of the proactive strategies described in this article, each person with autism can work toward reducing stress by gaining support, reducing demands, and achieving high control, thus producing the optimal state for learning and promoting positive mental and physical health.

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- o **Re: Stress, Coping, & Self-Control in Autism** by **kcweg** on Oct 18, 2007
Matthew,

Thank you very much for sharing that article. I think that the techniques described would not only be effective with those with autism, but those without it as well. My six year old daughter has a high level of anxiety for a young child. I think that the suggestions regarding giving control and choices to reduce stress will be effective.

I hadn't really thought about stress and autism but I see what a strong link there is between the two. If one has difficulty being understood and understanding others, a high stress level is a natural result.

Thanks again for sharing the article.

Sincerely,
Kathleen Weghorst

- **Re: Stress, Coping, & Self-Control in Autism** by **Connie Ferency-Viars** on Oct 18, 2007
This article is wonderful on so many levels. I am both an educator working with students who are on the spectrum as well as having 2 sons with high functioning autism. In the past 2 days, I have been involved in discussions with several teachers to identify what stress looks like in some individuals with ASD, as well as to describe why they might respond with "unconventional" behaviors that do not, on the surface, seem related to stress. I intend to share this article with my son's teachers, as well as the other educators at my school to give them some idea of the various strategies they can use.

Thank you for posting this one!

- **Re: Stress, Coping, & Self-Control in Autism** by **Brenda Scott** on Oct 21, 2007
I liked the cognitive picture rehearsal described in this article. It would appear to be an easy strategy (A-B-C) to show teachers how to use it.

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- **Section 3. Barriers to Realizing the Promise of Digital Technologies** by **Matthew Goodwin** on Oct 17, 2007

This is the third and final post relating to the promise of digital technologies to enhance and accelerate the pace of autism research and treatment. Thoughts are welcome.

Section 3. Barriers to Realizing the Promise of Digital Technologies

The primary barrier to creating and utilizing digital technology in autism research is funding exploratory/development research. The NIH is one of the largest supporters of autism research; however, NIH funds very little research in this area despite enthusiasm about the technological innovation. The primary reason for this neglect is the shortage of pilot data available for funding applications. Many of these applications lack pilot studies because they require technology development at a cost in the \$100,000 to \$1,000,000 range. A key and effort-wise, non-trivial technology development step is needed to generate pilot data necessary to obtain NIH funding for projects with important relevance to autism research and treatment. Making such resources available would greatly assist the existing and possible technological innovations reviewed in my previous posts, and help researchers interested in technology and autism to: (1) create an infrastructure with regard to research tools, methods, and qualified investigators to support the development and use of digital technologies; (2) establish a taxonomy of digital technology application areas and specify how these map to autism research; (3) team technology developers with autism experts (caregivers, educators, professionals, and autistic persons with communication abilities) to guide research and ensure acceptability and utility; (4) establish standards of excellence and rigorous evaluation processes of new technologies; (5) organize an expert review panel for technology grants; (6) create symposia and workshops at national and international autism and technology conferences to promote education and collaboration; and (7) provide a clearinghouse of available technologies to coordinate product dissemination and services.

Cure Autism Now's (CAN) Innovative Technology for Autism Initiative (ITA) is perhaps the closest currently available mechanism to begin addressing this funding gap. CAN's ITA was designed to support collaborative efforts between technology developers, social scientists, and neuroscientists to create technologies that "either help manage the everyday challenges faced by those with autism; support development and education; or assist researchers studying the fundamentals of autism biology and treatment." The ITA workgroup and its resources also serve to disseminate research and to actively recruit new investigators to the field by providing mid-sized multi-year grants, fast-track bridge grants, educational programs, and a workgroup within which investigators can meet, share information, and collaborate to create further advances in scientific knowledge

regarding autism.

- **Austism and Aspergers by Monica** on Oct 17, 2007

Thanks for the information on the book. I am a parent of a 9 year old boy who has recently been diagnosed with AS and am finding that the district and school personnel have limited understanding and knowledge about both diagnosis. I am from Texas, and our state has a lending library that is accessible to parents. I will request it from them, as I think it will be a great benefit.

I am so glad that I signed up to participate in this institute, it is a great help. thank you!!

- **Re: Austism and Aspergers by carmen duran** on Oct 22, 2007

I think that even professionals are not clear on the distinctions. Jackie, thanks for your clarifications. I ordered the book that you recommended. I have read about so many cases being misdiagnosed.

This past weekend I continued to read about AT and Autism and I found an article by Susan Stokes, Autism Consultant, in which she defined the supporting technology strategies as low, mid and high technology. It answered my questions about using all strategies, equipment, materials to increase expressive communication skills, attention, motivation and independent daily living skills. Beginning with the most simple ones like boards, clipboards, photo albums, photographs, highlight tape, etc and to include common electronic devices such as tape-recorders, language master, overhead projector, calculators and simple voice output devices. To combine the above mentioned with the high technology devices, also high cost devices, for example the video cameras, computers and adaptive hardware, and complex voice output devices.

I have read all the comments from my colleagues working in the field and I can see that not everybody has the budget and access to high tech-AT devices. I guess many people think of AT as high tech, high cost devices. Perhaps due to the influence of computers and specialized hardware.

For Visual Representation for example I have read that it is important to determine which visual representation system works best with a child and in what contexts. Typically, children with autism process visual information easier than auditory information. Therefore, the AT devices should help them to process the information through their strongest processing area: visual. I read that even with the Voice Output Communication Aids (VOCA), a visual representation can also be used. However, not all devices are good or effective for all children. The use of devices, strategies should always be individualized and incorporated into every aspect of daily living.

- **Re: Austism and Aspergers by teresapinder@yahoo.com** on Oct 22, 2007

You have been finding good info.!!! It is important for you to be the "detective" and watch how your child reacts and interacts with different strategies and remember there is not one final, perfect, single "thing" out there for our ASD students. Visual has been shown to be the best, especially in the beginning, but for you to give auditory-thinking aloud-kinda input as you are modeling how to interact/use the visuals is important. In order for children to read and write they have to develop an "inner voice" and for students with ASD this has to be taught. Find a really good K5 general education teacher and spend a few mornings during her circle time, these are the best local examples of how to teach inner voice.

By visual representation I think what they mean is you can start with real objects, move to real photos, then to line drawings with color like found in BoardMaker

software. I have watched children go through these stages in as little as a month to up to several years, just depends.

Start simple- remember it is new to you and the child too. Many parents start with package labels of favorite foods on the frig. You can use 2 inch clear packing tape with self sticking magnetic strip-found in a craft store. But make sure you only put up what the child can have! When you give the food to the child show the pic. and let them see you place it on the frig., each time pair up the two and leave the pic. on the frig. always. What you want is for the child to touch or take the pic. off the frig., might happen quick, might take several days.... then grow from there. Whenever this happens make sure you give what is chosen! I usually get a request for a morning routine-getting dressed, a bed time routine or a going to potty routine next. Soon it takes on a life of its own and you know you are ready for a more mobile system, lots more choices and usually colored line pics., sometimes with words and some times without.

I have a seven yr. old who is very confused with the words being on the same visual as the pic.- just not ready, although the speech therapist and OT are pairing printed word and pic. during their sessions, I think she will be ready soon....mom will know!!!

Individualizing a system, whether low, mid or high is important and what makes our job soooo much fun!!!

Hang in there, you and family are just beginning the journey and for all the bumps and sharp turns there are just as many moments of triumph and joy!

Go and find the post about Josh and mom, if you have not already- this mom is a good resource!
teresa

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- **Matthew's article on stress and autism** by **msebu** on Oct 17, 2007
Matthew-your article is great in so many ways. I just came back from visiting a student who was hospitalized due to over medication. He was laying on the floor of the bathroom. People kind of assumed that he wanted to be there. (WHY?) I talked to him and got him out and back to his room. I talked to him until his dinner came. The hospital people were surprised. I am going to bring a copy of your article to them as it tells what he needed and how, even verbally-I could help him communicate what he needed. It is very difficult to explain behavior of a person with autism and why sticker charts won't fix the problem. The article you wrote does a great job of outlining possible solutions. Well done, thank you.
 - **Re: Matthew's article on stress and autism** by **annette** on Oct 18, 2007
Thank you for sharing your article. It really does a wonderful job of explaining behaviors and responses that I don't always understand. The suggestions for minimizing stress are very helpful. Thanks again!

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- **for all levels, ages** by **msebu** on Oct 18, 2007
This is so true. I am very appreciative for all that I have read during this institute. I am struck most by the passion and concern for the individuals. I, too, feel like there should be a plan format that is required and free access to knowledge of and trials for AT from simplified to more complex.

It is as much a need as a general education plan, maybe more so. I think we try to plan for what we have or know about-when it would be great to plan for what we want for the people. This is a good way to expand our resources.

- **Autistic Disorders and Asperger's Disorder** by **carmen duran** on Oct 18, 2007
Jackie: thanks for the information about the book, I will get it. Please address this topic later.
Matthew: thanks for the article on Stress, Coping & Self-Control in Autism. I will copy it for my colleagues in the office. We are all learning. We will be discussing in our staff meeting your posting on Digital Technologies for Autism Research and Treatment.

High Functioning Autism and the development of an IEP:

As I continue to learn about this topic I am focusing now on the high functioning autism and the development of an IEP. Since the IEP should include all the services and AT needed for the student to succeed I would like to hear from you all your experiences with the IEP. For example: speech therapy and social therapy should be included. How do we include services for depression and anxiety? with individual psychotherapy? In terms of AT, I have seen more products to address communication, language and visual supports. When transition students come to Rehabilitation Services Administration many do not have the IEP so we need to develop the Individualized Plan for Employment (IPE) right away. I have read that the students with autism have better success when given early intervention and consistency in communication and sensory areas.

- **AT and UDL** by **msebu** on Oct 18, 2007
Technology grows faster than the education on how to use it. I like the cast site. It has a lot of good resources and you can read the books online.
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- **Various programs for face training** by **msebu** on Oct 18, 2007
Simon Baron-Cohen has excellent information and a program on face training. There is another one that is being tested called FACESAY. The beginning of Face Say is a little hoky-but once the program keeps going it is interesting to compare what I see to what the feedback is from the program. I have some students who do not notice a lot of facial expressions, so it is a good place to begin.
 - **Re: Various programs for face training** by **Lisa OT** on Oct 20, 2007
At CTG this week presenter Mo Boty shared a website www.do2learn.com that has an interactive face that demonstrates facial features paired with emotions.
 - **Re: Various programs for face training** by **Brenda Scott** on Oct 21, 2007
Laura, that was interesting to hear. I like the do2learn website and checked out this resource. It costs about \$30 to get. However, with a digital camera and a few good "face makers" I am not sure why one could not make some simple resources to use for training emotions in the classroom.
 - **Re: Various programs for face training** by **joanne cafiero** on Oct 24, 2007
Although ready-made resources are great it is also important to note that people are more likely to emulate models most like themselves AND themselves. So, making video or photo models of appropriate behaviors, skills sequences using the students themselves is a strong empirically based intervention.
I am recommending that students who need service learning hours be recruited to assist in making these very individualized technology tools.

I am looking forward to reading and re-reading these transcripts. This is an area within which I have lots to learn.

- **Autism/Aspergers** by **msebu** on Oct 18, 2007
www.gvsu.edu/autismcenter has good resources to address this as part of the Michigan Start grant-Statewide Autism Resources and Training. It is interesting to hear the different responses.
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- **Additional computerized methods to train face processing** by **Jackie Hess [SI Faculty]** on Oct 18, 2007
Another excerpt from the Silverman/Weinfeld book:

"Computerized methods are arising to train or retrain face processing. One such study (Silver & Oakes, 2001) used a program called the 'Emotion Trainer,' which has been developed to help autistic individuals recognize and predict emotional responses of others. Repetition with such techniques appears to show promise in initial test results. 'Let's Face It' is a program developed by Tanaka, Lincoln, and Hegg (2003) that develops a child's learning of facial expressions. Baron-Cohen and Wheelwright (2003) used a test called Reading the Mind in the Eyes to detect subtle individual differences in social sensitivity in adults with AS. This test involves choosing descriptive labels for the emotions expressed through pictures of eyes."

- **Assessing Stress & Arousal in Persons with Autism** by **Matthew Goodwin** on Oct 19, 2007
With help from the facilitators of this AT Institute, I have uploaded some papers relating to the assessment of stress and arousal in persons on the autism spectrum. For those interested in this area, I suggest reading in the following order:
 1. Baron, Lipsitt, & Goodwin (2006). Stress & Coping in Autism: Scientific Foundations for Research & Practice. This is a chapter from a book recently published by Oxford University Press. While I recommend the entire book, this chapter does a nice job of introducing and reviewing stress and coping research/treatment in ASD.
www.fctd.info/resources/newsletters/upload/ScientificFoundationsforResarch&Practice_Baron,Lipsitt,&Goodwin2006.pdf
 2. Groden et al. (2001). The Development of a Stress Survey Schedule for Persons with Autism and Other Developmental Disabilities. This is a paper describing the development of a 49-item scale for rating stressors in persons with autism. The survey can be completed as self-report or caregiver report.
www.fctd.info/resources/newsletters/upload/Development-of-the-SSS_Groden-et-al.pdf
 3. Goodwin et al. (2007). Validating the Stress Survey Schedule for Persons With Autism and Other Developmental Disabilities. This is a paper demonstrating the validity of the Stress Survey Schedule.
www.fctd.info/resources/newsletters/upload/ValidatingtheStressSurveySchedule_Goodwin-et-al-2007.pdf
 4. Goodwin et al. (2006). Cardiovascular Arousal in Individuals with Autism. This paper describes the use of a wireless heart rate monitor and systematic procedure for quantifying physiological stress responses in persons with autism. It also provides evidence for arousal-regulation problems in persons with autism.
www.fctd.info/resources/newsletters/upload/ValidatingtheStressSurveySchedule_Goodwin-et-al-2007.pdf

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- **visuais-schedules, choices, topics for communications-a parents perspective** by **tersainder@yahoo.com** on Oct 19, 2007

This newsletter was written by a parent of an AAC user and is the best I have read about how a family deals with a nonverbal child using visuals daily. Although Josh does not carry the diagnosis of Autism, he has many traits of ASD. You see I met Josh and his family this week when he and his mom gave a presentation on the power of the spoken and written word.

To get to the article go to <http://www.aac institute.org/Resources/ParentsCorner/2007June.html>
Josh and his mom would also like to invite you to go to their personal blog, which has Josh's writings and some of the projects they do together to increase and improve Josh's literacy skills. This site has some other great resources.

teresa

- **Re: visuais-schedules, choices, topics for communications-a parents perspective** by **joanne cafiero** on Oct 21, 2007

This is the most comprehensive, user-friendly description of a real, breathing, dynamic AAC system. I happen to know Pam and Josh and they are the superstars of AAC: What Communication Partners! Of course, Pam, Josh's Mom started with AAC early and she did not give up. She inundated Josh's environment with AAC, from schedules to picture boards to SGDs AND she provided receptive language input consistently and continuously even though at the beginning Josh was not generating output. This model detailed by Pam, I believe can be started with any individual with limited or no speech, regardless of age or other preconceived notions of non-viability. Just do it.

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- **Stress and AAC assessments** by **joanne cafiero** on Oct 20, 2007

Thank you Matthew for your work in this area. There is a growing body of research and information that details the effect stress has on being able to "show what you know". In many AAC assessments "showing what you know" determines whether you are provided with a device and what that device may be. This highlights the importance of using AAC assessments that look at the communication partners, communication tasks that are needed, rather than a set of "can and can't dos"

- **Re: Stress and AAC assessments** by **susan powers** on Oct 24, 2007

Again thank you for sharing this article on stress. As an OT who specializes in the sensory processing portion of our autism evaluations and who is part of our autism evaluation team, I am always thinking in terms of stress, sensory processing etc. I am always informing teachers, parents, staff, and others regarding sensory processing concerns and the resulting stress that can manifest itself in those students with autism. It is so important to keep this information in mind when dealing with students and to step back and look at what our students go through on a daily basis. If they cannot communicate that something is too loud or have other sensory difficulties, where do you think their stress levels are? It's another part of the difficulties that they deal with on a daily basis that we should keep in mind.

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- **Older Students - AAC Technology Abandonment** by **Brenda Scott** on Oct 21, 2007

We are currently working with an older AU student for whom AAC technologies (low tech to high tech) have been implemented several times. He always is initially excited (especially if it is a device) and begins using, but then abandons after 2-3 weeks. We think he needs more complex

devices but have been cautious about getting them through funding resources such as Medicaid for fear he will abandon them. Through school funding we have purchased a Chat PC which is a dynamic display device and he again initially used it excitedly but now is tapering off again. Any suggestions as to how to keep him going with an AAC device?

- o **Re: Older Students - AAC Technology Abandonment** by **joanne cafiere** on Oct 21, 2007
Hi Brenda,
First question: Are his communication partners using the device themselves to model its use and provide receptive language input?

Are you creating situations/opportunities within which the device gives power to the student? Have you identified reinforcing situations that you can use as a basis for the initial AAC intervention?

Is this student literate? If he/she is literate, perhaps a device with the potential for keyboarding will increase the potential for communication.

It is possible that this student and his communication partners have developed some idiosyncratic communication system that works for them. This is great, but if it doesn't work outside of the intimate environment where it was developed this individual has no universal system that will provide access to people, places and activities of life. So, in spite of the challenges it is imperative that communication partners invest in making this aac system work. Communication partners are the single most important element of a successful AAC intervention.

- **Re: Older Students - AAC Technology Abandonment** by **teresapinder@yahoo.com** on Oct 22, 2007
I agree, the partners modeling/answering using the device can lead to a greater understanding from both parties involved. Also, an age appropriate commenting "page" on the device may be motivating for your student. There are a lot of really "funny" teenage books, that the adults may not care for but the students want to respond to. One is called "That's Disgusting"- can not remember the author, but older kids find it quite hilarious and the text is simple. Also, is the voice on the device of same sex and age??? A recording buddy is a strategy used by one teacher I know who allows a chosen classmate to record a "private chat" page that is only used when "hanging" with same age peers- the adults never really know what's on this page but, again it is very motivating for the student to engage with peers. Any mother of teenagers will understand why this is important....
hope this helps,
teresa
- **Re: Older Students - AAC Technology Abandonment** by **joanne cafiere** on Oct 22, 2007
Yes, I agree. I think we all need to think about these kids as typical. Reading Pam and Josh Harris' blog really brings this to light.
These are kids, just kids, (or young adults) needing some communication support to live their lives. But back to my original premise: it is never too late to begin an AAC intervention. Regardless of behavior, prior history, affect, learned helplessness. It is the job of the practitioner to trouble shoot these impediments.
- **Re: Older Students - AAC Technology Abandonment** by **joanne cafiere** on Oct 24, 2007
It is the end of the Institute and I have learned much about what is on practitioners' minds regarding autism and technology. I do hope that

we all continue to work on "cracking the code" in autism especially with older students.

- **Future access to the Institute transcripts** by **Jackie Hess [SI Faculty]** on Oct 24, 2007
Thank you all for your participation in our 2007 AT Institute. We hope you found it interesting and informative. In a few days you'll receive an evaluation form asking for your comments about the experience. We'd greatly appreciate any comments you can offer.

We'll be archiving the discussion transcripts for future reference and including them on our 2008 Assistive Technology CD-ROM. You'll be able to access them at any time by going to our website and following the link to "Online Discussions."

If you're not currently on our listserv and would like to receive the Family Center's monthly newsletter, please send us an email at fctd@aed.org.

Again, thanks, not only for sharing your knowledge and experiences, but for everything you do for young people with disabilities.

- **It was a pleasure** by **Matthew Goodwin** on Oct 24, 2007
Thanks to all of you who participated in the AT & Autism discussion. I enjoyed our interactions around emerging digital technologies for persons with autism, and ways to assess stress and promote coping in this population. There is much work to be done in both of these areas, and I'm encouraged that many of you "on the front lines" see the relevance, value, and need to push the field forward so we can provide the best possible care. I'm hopeful that the knowledge and dedication evident from many of your posts will translate into practice and that, together, we will help leverage the strengths of persons with autism to help them lead meaningful, dignified, and productive lives.

- **Autism Spectrum Disorders** by **carmen duran** on Oct 24, 2007
My final comment at the end of the Institute: This was the most challenging section for me. I participated by posing questions and making comments and I got answers too! Actually, I printed all the transcripts to go over it after the expiration of the Institute. My colleagues at work got a daily progress report on the postings. It was not only for me but for several counselors interested to learn too. We will be reviewing the resources posted by the faculty and expert colleagues. At first, it was overwhelming but to divide the topics by sub-topics was very helpful. Thank you to the faculty and colleagues with more experience in this field of Autism Spectrum Disorders.

- **Re: Autism Spectrum Disorders** by **Jackie Hess [SI Faculty]** on Oct 24, 2007
Carmen,

You were a fantastic participant. Many thanks for your comments, questions, and resources. Please send our best to your colleagues as well.

I hope we'll see you at upcoming FCTD online events.

Jackie

- **November discussion of technology tools** by **Jackie Hess [SI Faculty]** on Oct 24, 2007
Throughout the month of November, the Family Center on Technology and Disability (FCTD) will

host "Teaching Digital Natives - Technology Tools for the Classroom." The discussion will be co-moderated by Kirk Behnke and Scott Marfilus.

Kirk Behnke has worked all over the country in various AT roles. Along with Dr. Harry Murphy, he designed and implemented the "Assistive Technology Applications Certificate Program (ATACP)" through California State University, Northridge (CSUN). He holds a Master of Education degree from Temple University and a certificate in Assistive Technology Applications from the University College in Dublin, Ireland. He is also a RESNA-credentialed Assistive Technology Practitioner and Assistive Technology Supplier. Kirk is particularly interested in accessible curriculum design, universal design and the use of web-based tools.

Scott Marfilus has been working with individuals with disabilities for the past 26 years, the past 20 of which have involved AT implementation. His teaching certifications are in Early Childhood Handicaps, Cognitive Disabilities, Emotional Disabilities, and Learning Disabilities. Scott works with universities, helping them infuse technology throughout teacher preparation programs. He consults with individuals and businesses to determine adaptations that are needed in workplace settings. Scott also teaches in the CSUN Assistive Technology Applications Certificate Program. His AT focus areas include computer access, and technologies that assist those with cognitive and learning disabilities.

The November discussion will look at the emerging use of handheld computers, podcasts, online textbooks, wikis, blogs, wireless access to the Internet, virtual reality and other leading edge technology as effective tools in the classroom.

Unlike our online institute, you don't need a special URL to access the month-long discussion. Simply visit the FCTD website - www.fctd.info - and follow the link to "Online Discussions." We hope to see you there!