AUTISM SPECTRUM NEWS™

YOUR TRUSTED SOURCE OF SCIENCE-BASED AUTISM EDUCATION, INFORMATION, ADVOCACY, AND COMMUNITY RESOURCES

WINTER 2014 VOL. 6 NO. 3

Using Technology to Enhance the Lives of Individuals on the Spectrum

The Pitfalls and Potential of Technology: A Guide for Parents and Professionals

Joshua John Diehl, PhD
W. J. Shaw Assistant Professor
University of Notre Dame

Rapid advances in technology over the past decade have led to an overwhelming number of products put on the market to treat Autism Spectrum Disorder (ASD). The sheer number of products (from computer games to apps to robots!) can be intimidating. Moreover, many product lines make enticing claims about what their new technology can do. Technology presents exciting possibilities, because many individuals with ASD have an intrinsic interest in or aptitude for technology. Unfortunately, empirical studies of what works, what doesn't, and how new technology should be implemented have not kept pace with the technological advances. What should we consider when determining which technology is appropriate for our child, our client, or our student? Here I discuss three important factors, discussed in order: 1) finding an interest, 2) considering the approach, and 3) selecting the appropriate technology.

Find an Interest

I often hear "Individuals with ASD love technology" or "Individuals with ASD love robots." As a researcher, I can say that both of these statements are false. It is a mistake to assume that just because an individual has ASD that he or she will like a certain type of technology. The most consistent finding in research on the use of technology with individuals with ASD is that there is considerable individual variation, both in terms of interest in the technology and in terms of response in therapy. It is important to pay attention to the individual. As a parent, educator, or therapist, you are looking for windows of engagement that provide an opportunity for social interaction. It is possible that a certain type of technology might provide that window, but only if the child shows an interest in that particular app, game, or tool. If you are unsure about whether or not a particular child might have an interest in a type of technology, try to find opportunities to "pilot" the technology before purchasing.

Consider the Approach

Before implementing an approach that uses technology with an individual with ASD, we must ask what the purpose of the technology will be. I often have seen the purchase of a program/app/device precede the development of a purpose for its use. To use an analogy, a 10 foot tall refrigerator might look great in the store, but if you can't even fit it in your house, why would you purchase it? There are many potential uses for technology, and some choices are simple. Is the purpose to provide an

see Guide on page 30

Scaling Inclusive Practices Through Technology

Jamie C. Pagliaro
Chief Learning Officer
Rethink

While the concept of "including" students with disabilities has only recently entered the collective consciousness of educational reformers nationwide, it is far from being a new fad or trend. The Least Restrictive Environment (LRE) component of the Individuals with Disabilities Education Act (IDEA) has been a cornerstone of special education policy for nearly 40 years now. Mandating that, "to the maximum extent appropriate," children with disabilities be educated alongside children who are not disabled, while still receiving the supports and services they need to be successful, LRE has not, since it became law in 1975, been amended and is one of the few pieces of education policy that has remained relatively uncontroversial over the years, at least in theory. Despite this consistency, meeting the requirements of LRE, creating a culture of inclusion, and ensuring staff and student success in this model of education continues to be a struggle for many school districts.

Disseminating Effective Practices

One of the most efficient ways for school districts to begin promoting inclusive practices is through professional development. Yet the traditional stand-and-deliver nature of these sessions does not lend itself well to transforming teaching behavior. While didactic lecture can be an effective way to improve staff knowledge of terminology and concepts, it does not typically impact staff performance in the classroom unless it is followed by activities such as performance feedback, goal setting and self-monitoring (www.ncbi.nlm.nih.gov/pmc/articles/PMC1986691/). Unfortunately, school districts are often limited in the amount of follow-up they can provide after a professional development session, due to the cost and availability of expert staff.

Ensuring Ongoing Collaboration

Given the personalized nature of inclusion, it would seem necessary to provide teachers with ample time to collaborate on individual student needs. Teachers often cite lack of planning time (www.forbes.com/sites/erikkain/2011/03/08/high-teacher-turnover-rates-are-a-big-problem-for-americas-public-schools/) as a primary challenge in education. Some districts have implemented collaborative team teaching models, which pair general and special education teachers and students in the same classroom. This model offers an exciting opportunity for teachers to modify traditional classroom routines, observe student needs in a shared setting and creatively problem-solve to provide appropriate support across the school day. However, not all districts have implemented this model as there may be challenges around philosophy (www.edutopia.org/blog/collaborative-team-teaching-challenges-rewards-marisa-kaplan) and other logistical variables (e.g., not enough students with special needs in the same school building or grade level), and it is not necessarily appropriate for all students with special needs to spend their entire day in a general education classroom. Many students continue to be served primarily in self-contained settings, or spend portions of their school day in a resource room with specialized support. In these models, it is less likely that teachers will have an opportunity to collaborate on identifying appropriate goals or delivering interventions. In most cases, these duties fall to the special education teacher, who may be operating independent of the general education classroom.

see Inclusive on page 31

Mental Health News Education, Inc.
460 Cascade Drive
Effort, PA 18330

NON PROFIT
ORGANIZATION
U.S. POSTAGE PAID
MONROE, CT
PERMIT NO. 137

Autism Spectrum News is a Publication of Mental Health News Education, Inc, a Nonprofit Organization.

460 Cascade Drive, Effort, PA 18330 • (508) 877-0970 • dminot@mhnews.org • www.mhnews-autism.org

Table of Contents

Autism Spectrum News
2014 Theme and Deadline Calendar

Spring 2014 Issue:
"Autism in the Workplace"
Deadline: March 5, 2014

Summer 2014 Issue:
"Autism and Mental Health Services"
Deadline: June 5, 2014

Fall 2014 Issue:
"Exploring Relationships and Social Skills"
Deadline: September 5, 2014

Winter 2015 Issue:
"The Importance of Scientific Research"
Deadline: December 5, 2014

To Submit an Article or Advertisement
Call us Today: (508) 877-0970
or email dminot@mhnews.org

AUTISM SPECTRUM NEWS DESK

Two Studies Map Gene Expression Across Brain Development

By Virginia Hughes
SFARI.org

Now that genetic studies have implicated several hundred genes in autism, researchers are turning their attention to where and when in the healthy young brain these genes are expressed. The first two studies to tackle these questions appeared on November 21, 2013 in *Cell*.

One report, led by Matthew State at the University of California, San Francisco, analyzed nine genes that sequencing studies had strongly linked to the disorder[1]. These genes tend to be expressed together in certain layers of the cortex in the fetal brain, the study found.

The second study, led by Daniel Geschwind at the University of California, Los Angeles, took a broader approach, looking at the expression patterns of hundreds of autism-linked genes[2]. Some of these genes tend to be expressed together in networks related to the workings of the synapse, or junction between neurons. Other networks are involved in turning genes on or off.

Despite using different methods, both studies found clusters of autism genes that are important during mid-fetal development, and for the function of neurons that produce the chemical messenger glutamate. These so-called 'glutamatergic neurons' mediate excitatory signals in the brain.

"It's remarkable that, despite these huge differences in how we approached the problem, we converged on the same time period and on glutamatergic neurons," Geschwind says. "The themes that are emerging from these analyses are very, very resonant with each other. It's a good thing when that happens in biology."

Still, the research reveals a complex mix of networks, time periods and cell types involved in autism, underscoring the notorious heterogeneity of the disorder.

"Both of these studies are, in a sense, heroic, in terms of the breadth and depth of what they're going into," says John Allman, professor of neurobiology at the California Institute of Technology, who was not involved in either study. "They represent just how incredibly difficult it is to address this stuff."

Seed Genes

Geschwind's team and others have previously analyzed gene expression in postmortem tissue from people with autism. A downside of that approach is that most of that tissue comes from adults, and none from anyone younger than 2 years old.

In contrast, both new studies tapped into BrainSpan, an online database of gene expression data from more than a dozen brain regions across the full span of human brain development, from prenatal stages through infancy, adolescence and adulthood. The resource pulls from postmortem tissue studies done by several nonprofit, government and academic groups.

State's team searched this resource for genes that had passed a high threshold of statistical confidence in whole-exome sequencing studies — which sequence the protein-coding portions of the genome —

see Brain on page 31

Autism Science Foundation Announces 2013 Research Enhancement Grant Recipients

By The Autism Science Foundation

On November 12, 2013, the Autism Science Foundation, a not-for-profit organization dedicated to funding autism research, announced the recipients of research enhancement mini grants. These grants are intended to enable researchers to expand the scope or increase the efficiency of existing grants, or to take advantage of changes or findings that have occurred in or around the project that warrant more funding. Six projects were selected for funding.

"Our goal with this funding mechanism is to speed up the pace of research and remove research obstacles" said ASF president Alison Singer. "We want researchers to be able to move quickly when they've made the kind of breakthrough that just needs a bit more funding to exploit rapidly".

The following projects were selected for enhancement grant funding:

Sex Differences in the Neural Mechanisms of Treatment Response
Dr. Pam Ventola/Yale University

This grant will support a 16-week Pivotal Response Treatment trial to expand work funded by Dr. Kevin Pelphrey's center. This funding will add an additional cohort of girls and will focus on the sex-based differences in neural response to treatment, which is not included in the current NIH funding.

Use of Real Time Video Feedback to Enhance Special Education Teacher Training
Dr. Jessica Suhrheinrich/University of California at San Diego

Funds will be used to purchase iPads for teachers to enable real-time feedback during a study implementing classroom based Pivotal Response Training in preschool through fifth grade special education classes. This is significant because this study will focus on teachers who were not previously able to master PRT.

The Effects of Autism on the Sign Language Development of Deaf Children
Dr. Aaron Shield/Boston University

This grant will expand the control group of typically developing deaf children to compare to deaf children with ASD. Findings from this study will inform the eventual adaptation of the Autism Diagnostic Observation Schedule and other instruments for use with deaf and hard-of-hearing children. It will also inform the design of future interventions with deaf and hard-of-hearing children with ASD.

Cross-Modal Automated Assessment of Behavior during Social Interactions in Children with Autism Spectrum Disorder
Dr. Adam Naples/Yale University

This grant supports implementation of hardware to monitor a child's facial expression, gaze, speech, and posture during recording of neural activity in Dr. James McPartland's lab. This technology will enable simulation of interpersonal interactions based on a child's verbal and nonverbal behavior. This study will investigate the brain mechanisms of multimodal reciprocal social interaction for the first time.

Role of Astrocytic Glutamate Transporter GLT1 in Fragile X Syndrome
Dr. Haruki Higashimori/Tufts University

This grant will allow for promising new discoveries in mice with Fragile X Syndrome to be tested on human brain tissue samples. This is significant because it will bridge their findings from rodent models to humans and help further validate a new therapeutic target for Fragile X and autism. This study builds on a finding during Higashimori's Autism Science Foundation Post-Doctoral fellowship.

Partners in Schools: A Program for Parents and Teachers of Children with Autism
Dr. Gazi Azad/University of Pennsylvania

Funds will provide financial incentives for urban, public school parents and teachers to participate in a study testing a new paradigm to improve parent-teacher communication about evidence-based interventions. This project will result in a new culturally sensitive tool for communication improvement, which is the first step in fostering family-school partnerships for children with autism.

The Autism Science Foundation is a 501(c)(3) public charity. Its mission is to support autism research by providing funding to scientists and organizations conducting autism research. ASF also provides information about autism to the general public and serves to increase awareness of autism spectrum disorders and the needs of individuals and families affected by autism. To learn more about the Autism Science Foundation or to make a donation visit www.autismsciencefoundation.org.

AUTISM SPECTRUM NEWS DESK

NIH Study Finds Attention to Others' Eyes Declines in 2 to 6-Month-Old Infants Later Diagnosed with Autism

By The National Institute of Mental Health (NIMH)

Eye contact during early infancy may be a key to early identification of autism, according to a study funded by the National Institute of Mental Health (NIMH), part of the National Institutes of Health. Published this week in the journal Nature, the study reveals the earliest sign of developing autism ever observed—a steady decline in attention to others' eyes within the first two to six months of life.

"Autism isn't usually diagnosed until after age 2, when delays in a child's social behavior and language skills become apparent. This study shows that children exhibit clear signs of autism at a much younger age," said Thomas R. Insel, M.D., director of NIMH. "The sooner we are able to identify early markers for autism, the more effective our treatment interventions can be."

Typically developing children begin to focus on human faces within the first few hours of life, and they learn to pick up social cues by paying special attention to other people's eyes. Children with autism, however, do not exhibit this sort of interest in eye-looking. In fact, a lack of eye contact is one of the diagnostic features of the disorder.

To find out how this deficit in eye-looking emerges in children with autism, Warren Jones, Ph.D., and Ami Klin, Ph.D., of the Marcus Autism Center, Children's Healthcare of Atlanta, and Emory University School of Medicine followed infants from birth to age 3. The infants were divided into two groups, based on their risk for developing an autism spectrum disorder. Those in the high risk group had an older sibling already diagnosed with autism; those in the low risk group did not.

Jones and Klin used eye-tracking equipment to measure each child's eye movements as they watched video scenes of a caregiver. The researchers calculated the percentage of time each child fixated on the caregiver's eyes, mouth, and body, as well as the non-human spaces in the images. Children were tested at 10 different times between 2 and 24 months of age.

By age 3, some of the children—nearly all from the high risk group—had received a clinical diagnosis of an autism spectrum disorder. The researchers then reviewed the eye-tracking data to determine what factors differed between those children who received an autism diagnosis and those who did not.

"In infants later diagnosed with autism, we see a steady decline in how much they look at mom's eyes," said Jones. This drop in eye-looking began between two and six months and continued throughout the course of the study. By 24 months, the children later diagnosed with autism focused on the caregiver's eyes only about half as long as did their typically developing counterparts.

see Eyes on page 30

Autism Speaks Awards iPads to 800 Individuals with Autism

Pilot Study Showed Their Effectiveness on the Communication Skills of Individuals with ASD

By Ali Waters
Content Manager
Autism Speaks

A brother and sister proudly hold their iPad from Autism Speaks

On December 9, 2013, Autism Speaks donated iPad 2's to 800 financially disadvantaged individuals with autism, as well as teachers and social workers who work in the autism community with individuals in need.

After the iPad grant application was announced in November, Autism Speaks received more than 16,000 applications for iPads. Thanks to generous donations from Sevenly.org, Wyndham Worldwide, the Geier Foundation, the James Walter Pickle Charitable Foundation, the Boston Bruins Foundation, the Agarwal Foundation and Jonathan Izak, the organization mailed 800 iPad 2s to individuals in 46 states between the ages of four and 60-years-old. Each iPad came with a unique Autism Speaks Kraken A.M.S. case from Trident Case, as well as a free download code for Brain Parade's popular app See.Touch.Learn Pro, which usually costs $39.99.

Review committees thoroughly reviewed each applicant's unique situation in terms of the individual's family's financial status, his or her age and verbal ability, and most importantly, the applicant's response to how the person would use the iPad and how it would change his or her life.

"The 16,000 applications we received are a real testament to the success that individuals with autism have had with iPads," said Lisa Goring, Autism Speaks vice president of Family Services. "We were thrilled to be able to provide 800 iPads to financially disadvantaged individuals. It is our hope that these devices will improve the communication and language skills of the recipients and expand opportunities for them at school and in the community as a result."

Testimonials

In 2012, Autism Speaks donated 830 iPads bringing the total to date to 1,630. Testimonials from last year's recipients and their parents reflected the profound impact the devices had on their loved one's communication skills and behavior.

"This is only my son's second week of school using it, and already the difference has been amazing," said the mother of a nine-year-old recipient. "Using the fun, educational apps, he has been able to demonstrate to his teachers that he knows his alphabet, numbers, shapes, colors, and many other concepts. What a difference! Before, he would get frustrated, upset, refuse to even attempt, and sometimes have meltdowns when faced with the dreaded paper worksheet. Now, not only is he completing more work - he's having fun doing it! The possibilities for learning are endless, and best of all - he's loving it!"

see iPads on page 34

Augmentative Communication: Finding the Real Person "Trapped Inside"

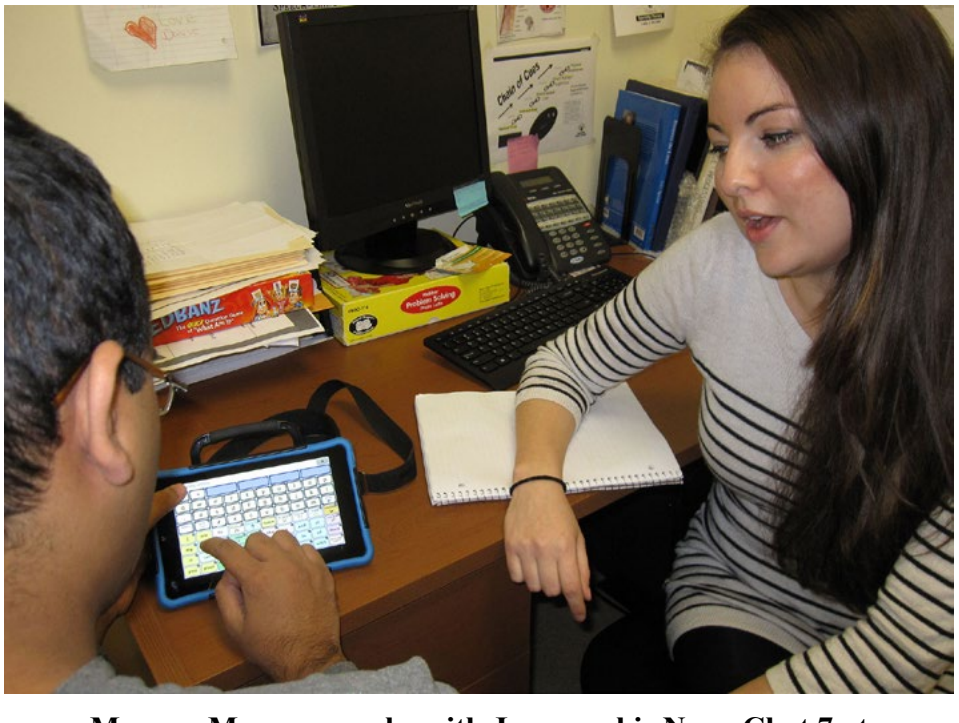
By Maegan Meneses, MA, CCC-SLP
Speech Language Pathologist
YAI Center for Specialty Therapy

Jerry, a young man with autism, approached two women in the waiting area. He pressed a button on his augmentative communication device and said, "Good morning. It's nice to meet you."

Thanks to a Nova Chat 7 communication device, Jerry, 22 (note: he turns 23 on 1/22/14), has a voice for the first time and he's proud that people can easily understand what he has to say now.

As a Speech-Language Pathologist, I work with children, adolescents and adults with a variety of communication deficits and who typically struggle to interact socially. I was initially inspired to pursue speech-language pathology by observing a family member with autism and the progress he made throughout his childhood. My mother, a nurse practitioner, also suggested that I enter this field while I was in my early years of college, as she works with many speech therapists in the hospital and understands my desire to work with and help people.

More than 3.5 million Americans cannot rely on their natural speech to meet their daily communication needs (Beukleman & Mirenda, 2005). Our goal here at the YAI Augmentative and Alternative Communication (AAC) Center is to provide as many of these individuals as possible with the means to communicate so they can interact with peers, family members, and staff. This also enables them to more fully participate in school, at home, and work, while helping them establish and maintain social relationships, and meet their own personal needs.



Maegan Meneses works with Jerry on his Nova Chat 7 at YAI's Augmentative & Alternative Communication Center

My colleague Rachel Bouvin, Supervisor of Rehabilitation Services at YAI's Center for Specialty Therapy, clearly recalls the day when Jerry was trying to make himself understood.

He guided her to the supervisor's office at our Kew Gardens Day program in Queens, N.Y. "He pointed to his mouth, as we tried to figure out what he was trying to say," Bouvin said. "'Are you hungry?' After 20 minutes, we finally figured out that he had to go to the dentist. Jerry was so excited that we understood. He is extremely motivated to communicate."

When I first met Jerry, he would often write a word down to convey if he wanted something or attempt to produce 1-2 word utterances, but that was clearly not a functional means of communication for him. He frequently perseverated on different topics. But we didn't know the full extent of his literacy and his understanding of more complex language.

Jerry's world, as well as ours at YAI's AAC Center, all changed about a year ago during a speech and language evaluation in Kew Gardens.

During the evaluation, I asked him his favorite TV show. He just stared blankly at me. I wasn't sure if he didn't understand the question or simply couldn't communicate his answer. He saw my iPad on a nearby table and he opened it up and typed in "Laverne and Shirley Show." I knew at that moment that Jerry was capable of so much more than we had imagined, and I knew at that moment that he needed an augmentative communication system.

Jerry is one of many individuals who has been evaluated at the program, which began

see Real Person on page 33

The Ins and Outs of Technologically-Savvy Psychotherapy

By Alyson H. Sheehan, PhD
and Shana Nichols, PhD
ASPIRE Center for
Learning and Development

When the parents of a bright, 7 year-old girl were informed that their daughter's delays in social and emotional development were likely indicative of Autism Spectrum Disorder (ASD), they responded in a manner similar to many other parents who have received such news. They began seeking medical and developmental specialists to obtain comprehensive information and appropriate, individualized treatment to address their daughter's unique needs. Her meltdowns and anxiety about change were beginning to interfere greatly with her ability to participate at school. Unfortunately, these parents quickly learned that the providers available around the small city where their family resided had little, if any, experience in working with such difficulties. Their frustration intensified as a series of phone calls and internet searches revealed that ideal services for their daughter did indeed exist – just not in a location that was plausibly accessible to their family. How could they possibly secure efficient and effective treatment for their daughter without disrupting the entire family's functioning?

Alyson H. Sheehan, PhD

Shana Nichols, PhD

Technology's rapid advancement has vastly impacted the process of planning, seeking, and participating in services that foster optimal everyday functioning, such as the concerns presented in the scenario above. Among the range of diverse supports that individuals on the autism spectrum and their families may seek, psychotherapy is a valuable tool for addressing short- and long-term concerns ranging from school struggles to emotional difficulties to interpersonal relationships. However, the movement towards computerization across mental health services has led to a controversial, yet inevitable, shift.

The past decade has been characterized by a push to make therapeutic services increasingly accessible, universally affordable, and, especially for individuals with ASD and social learning difficulties, less characterized by stigma and general discomfort. Consequently, therapy seekers and providers alike have been drawn to the possibility that electronic communication may be a forum for facilitating therapeutic growth without leaving home. At the same time, the gains obtained in psychotherapy have a long-standing link to the interactions between client and therapist. Can the goals of therapy possibly be reached through a computer screen? Moreover, how can regulatory organizations and insurance companies keep pace with these alternative technological approaches to therapy?

Continually expanding research and practice in teletherapy has directly sought to answer these questions. Interventions and studies are primarily aimed at clarifying the means by which technology can enhance participation in psychotherapy without negating its fundamental tenets (Bischoff et al., 2004; Hill et al., 2001; Oliver & Demiris, 2010). The *American Psychological Association* recently released guidelines for teletherapy practice, and some state licensing boards have begun to publicize their expectations for licensed providers (APA, 2013).

A brief review of informational materials illustrates the varied terminology used to describe computer-based therapy. Although we use "teletherapy" for the purposes of this article, interchangeable or related approaches may be referred to as telepsychology, tele-mental health, remote treatment, videoconferencing, online

see Psychotherapy on page 33

Using Technology to Provide Evidenced-Based Outcome Data to Make Better Decisions

By Barry Katz
CEO
Operant Systems, Inc.

Schools, provider agencies and parents are concerned with looming cuts in special education services. Schools, provider agencies and parents are looking to become more efficient and effective with their programs. The Devereux School of NY has meet the challenge by partnering with Operant Systems' *TeachMe Skills* ,a mobile and web technology, that aids them in the planning, observing, recording, analyzing and modifying a student's progress. The process began with John O'Keefe, the Executive Director of the Devereux School of NY asking some fundamental 'How' questions about their program. As a consummate leader he asked his staff, how can we;

- Provide evidenced-based outcome data that demonstrates the effectiveness and the efficiencies of our educational and clinical services?
- Increase productivity in administrative services?
- Reduce the preparation time to collect all students' data before an audit?
- Obtain staff buy-in to effortlessly collect and manage educational and clinical data?
- Reduce negative behaviors and increase students' positive behaviors?
- Track progress towards assessment goals?
- Use existing technology as well as mobile technology?
- Reduce audit risks?
- Reduce staff turnover and increase staff satisfaction?
- Gain parent support and accolades?

Devereux of New York, who serves special-needs children with autism, severe disabilities, and disorders has teamed up with Operant Systems mobile/web technology *TeachMe Skills* to serve more children more effectively than it could before. With more extensive, timely, and accurate clinical data, Devereux can now better analyze client progress and modify treatment plans.

Barry Katz

Business Needs

There are too many children who will never realize their parents' hopes for them, due to debilitating combinations of developmental delays, and psychiatric and behavioral disorders. Yet other children, similarly afflicted, will go on to lead fulfilling and rewarding lives.

But for Devereux New York, increasing challenges threaten another type of disablement. The number of children diagnosed with autism, for example, has doubled in a decade, creating unprecedented demand for limited services. Meanwhile, those services have become more expensive to provide, at a time when funding for them has become increasingly scarce.

That's the context in which Devereux New York uses applied behavioral analysis to treat its clients, especially those with autism. The technique discourages specific negative behaviors, rewards specific positive ones, and continually refines the treatment program based on each child's progress.

Applied behavioral analysis depends upon a massive, virtually continuous collection of behavioral data for clinicians to analyze. That data comes from staff who both work with the children and lug around binders and clipboards to record their behaviors. Behaviors could go unreported, or reported inaccurately, inconsistently, and tardily.

Solution

John O'Keefe, Executive Director of Devereux New York, discovered *TeachMe Skills* from Operant Systems. While electronic systems for the collection and analysis of behavioral data had long existed, O'Keefe had long found them insufficient. Traditional electronic solutions required staff to report behaviors through PC interfaces—which meant that much reporting had to wait hours or more, until staff had the opportunity to transcribe data from their binders. Analysis, too, was often confined to client-server systems that limited the flexibility with which clinicians could use them.

In contrast, *TeachMe Skills* brings together mobile technologies that address the shortcomings of traditional solutions. Devereux New York staff record behaviors as they happen, using any mobile devices that they carry with them. A set of various behaviors make it easvisualy, even intuitive for staff to learn and use the *TeachMe Skills* App. Staff professionals—including speech and language teachers, physical and occupational therapists, the special-education staff—also use the app to document their provision of services.

Behavioral data is hosted "in the cloud" by Operant. Clinicians analyze the data using a *TeachMe Skills* mobile and web interfaces with graphs and charts that show the severity and frequency of monitored behaviors. They conduct these analyses from anywhere, at any time, either with an Internet connection.

Clinicians use their analyses to help decide whether each child's treatment plan is proving effective, and to make changes to those plans—for example, changing behaviors to be monitored or skills to be learned. Those changes are immediately sent over the web to the Windows Phones of the relevant staff members.

Benefits

John O'Keefe declares the solution a success for his staff, his school, and, most importantly, the children under their care by:

- Recording timely data
- Enabling staff to record data at the right time and the right place
- Increasing a student's positive behaviors while decreasing negative behaviors
- Reducing risk of litigation by providing reliable data
- Reducing administrative work for staff
- Enabling clinicians, psychiatrists and teachers to make more effective decisions.
- Providing a consistent, simple and powerful tool across disciplines

Increase Volume of Reliable Data - Because staff can now record data more quickly, easily, and promptly, they're recording more of it. The volume of recorded behaviors immediately available for analysis has increased by 60 percent, fueling faster and better analyses, and better refinements in treatment plans.

Gains Consistent Reporting, Analysis from Across the Enterprise - The children in our school programs may be campus residents, day-program clients, ICF participants, or any combination. For the first time, Devereux New York assembles comprehensive reports and analyses that cover a child's experience across these environments.

Successfully Treats "More Intense, More Problematic" Children - The school now successfully treats children with issues that are "more intense, more problematic," than previously, according to O'Keefe. That success is based in part on the more in-depth analyses and closer tracking of client progress that clinicians gain with *TeachMe*. It's also based on the greater time that staff spends with clients, time previously consumed in administrative chores.

Makes Better, Fuller Use of Remote Care Settings - Devereux New York opened four ICFs in the past year, a major expansion for the school, in part because it is better able to identify children from its residential and other programs who are likely to thrive in the small-scale, community-based setting, and because it can better monitor and assess their progress.

Monitors, Evaluates Staff More Effectively - Administrators use *TeachMe* to assess how thoroughly staff members track behaviors and implement the treatment plan for each child under their supervision—giving administrators a new and highly useful tool with which to evaluate staff performance.

The Devereux School and its staff are prepared for the challenges of delivering there services in a more cost effective and efficient manner using the proven track record of Operant Systems' *TeachMe Skills*.

For more information about Operant Systems' TeachMe Skills, visit www.operantsystems.com, email support@operantsystems.com, or call 305-771-3124.

Developing Self-Reflection and Resilience in Adolescents with Asperger's Syndrome and High Functioning Autism

By Dorothy Lucci, MEd, CAGS
Program Director
Aspire/Massachusetts General Hospital

Some key ingredients to success as an adult in college or in work are: self-awareness, self-reflection, stress-management, social competence, and resilience. This is true for everyone with and without disability. It would be fabulous if we could eliminate stress from all our lives; however stress is a part of life, a part of everyone's life so developing stress management and resiliency is a critical life skill. At Aspire/MGH we believe the earlier in a person's life we begin this training the better prepared our participants will be for adult life. Our three core areas of focus: self-awareness, social competency and stress-management are addressed in all programs and they serve as the backbone of all of our instruction and consultation. We serve individuals from the age of five to thirty in a variety of programs including social groups, summer camp, summer teen explorations, internships, college mentoring and consultation and professional development. Focusing on these three competencies and utilizing a strengths based approach as well as a science based approach serves our participants with Asperger's Syndrome (AS) and High Functioning Autism (HFA) well.

Dorothy Lucci, MEd, CAGS

Given that many individuals with AS and HFA are visual learners, enjoy technology and are generally concrete, sequential learners we made the deliberate decision to incorporate these learning preferences into our instructional methods. Our adolescent programs use a curriculum we developed called the Science of Me (Lucci, D., Levine, M., McLeod D.S., and Challen-Wittmer, K., 2013). In this curriculum we incorporate two pieces of technology as an integral part of instruction: a web and mobile based software system, Symtrend™ and a stress-management tool developed by HeartMath called emWave™ along with HeartMath's curriculum *The Inside Story*.

Symtrend's™ web-based and mobile-based technology system can be used for a variety of purposes: behavior analysis, outcome measurement, data management, self management, team communication, and coaching/direct instruction (Levine, M., 2013). In our work we used it primarily as a data collection tool and an instructional tool for self-reflection, self-awareness, social competency and stress management. Symtrend™ has the capacity for individualization which allowed us to author our own screen content which mapped onto our Science of Me curriculum and the Inside Story.

Each participant and staff person utilized an Apple iPod Touch with Symtrend™ uploaded onto each device. Our screen content included: feeling states, attitude, cognitive flexibility, group participation, social thinking, anxiety, stress level, stress triggers and relaxation techniques among others. After designated periods and multiple times during the day, participants rated themselves in these areas as did staff. Both sets of data were uploaded to the web, synchronized and then printed and reviewed during social groups. A visual graph/chart was printed that included a comparison of staff/teen plotted together on the same page. This allowed for discussions of personal data and reflection by each participant about themselves as an individual and as a member of a group. Many teens with and without an ASD diagnosis may be reticent to participating in these discussions. Our participants did not view the feedback, even if "negative," as emotionally triggering. Our hypothesis is they were intrigued by "seeing" their data "concretized and objectified." It allowed more honest discussions and we found that by using Symtrend™, teens' self-awareness of their feeling states, cognitive flexibility, stress awareness and management improved as did their social behavior as it related to others. Our data also suggested that teens used the visual graphs to describe their internal states and broaden the neurotypical person's perspective of individuals with ASD. During a discussion, a staff member rated a teen as "not part of the group" and the

see Developing on page 34

One School's Experience Engaging Students with Autism Through Technology

**By Amanda Coons, MS, BCBA,
Rebecca Stanmyer, BS, CCC-SLP
and Kathleen Marshall, BA, MA, SAS
Anderson Center for Autism**

Educators, clinicians, therapists and other professionals continue to look for new ways of using technology to benefit students with autism. Video modeling to teach social or self-regulation skills, individualized computer-assisted instruction, and augmentative communication devices are widely utilized interventions. School programs can be overwhelmed when considering technology options for students on the spectrum. Cost, accessibility, identifying and measuring student outcomes, teacher/therapist training, and adult and student "buy-in" are just a few of the areas to be considered.

Located in Staatsburg, New York, Anderson Center for Autism's residential school serves students on the autism spectrum. As in any school setting, Anderson Center for Autism (ACA) administrators and staff are continually looking for ways to motivate students and positively impact learning outcomes. In recent years, a myriad of technology options have become available and their use with students on the spectrum has received a great deal of attention. Some schools quickly transitioned to using tablets such as iPads for all students with autism while others have chosen to utilize computer-assisted instruction for all or parts of the instructional day. ACA identified three areas important to our student population where various technology options could have positive outcomes. These areas included: communication training, group instruction and play skills.

Amanda Coons, MS, BCBA, Rebecca Stanmyer, BS, CCC-SLP, and Kathleen Marshall, BA, MA, SAS

IPads were identified quickly as a powerful tool for autism treatment and the broader speech pathology and special education fields. "Advances in technology afford new opportunities for both facilitating language learning and exploring additional dimensions of instruction" (Romski & Sevcik 1997). Many educational applications can easily be incorporated into the therapy setting and can be used to collect data, record conversational samples, motivate students, and improve receptive, expressive and pragmatic language skills in addition to being used as an augmentative assistive communication device.

At ACA, iPads are used by speech language pathologists within therapy sessions on a daily basis. They are used in a direct-teaching approach as well as in naturalistic settings to motivate students, and promote independence in language learning and communication. Using iPads, therapists are able to play videos and music, allow students to play popular games and search topics of interest without moving from the instructional site (desk/table), minimizing interruptions and providing immediate reinforcement. As time progressed, numerous applications for language development and topics were incorporated including cause and effect, literacy, written language, social stories and pragmatic language skill building. Children are taught prerequisite skills for communication (matching, motor imitation and verbal imitation) as well as turn-taking, appropriate play and social attention to partners, all using different applications geared toward students with autism. Therapists love the new tool and the students seem to thrive with the use of this technology.

However, the most talked about features of an iPad for a person with autism continue

see Engaging on page 38

Technology Opens Doors for College Students on the Spectrum

By Dana R. Reinecke, PhD, BCBA-D
Assistant Professor and Chair
Center for Applied Behavior Analysis
The Sage Colleges

Individuals with autism spectrum disorders are entering college in increasing numbers (USDOE, 2011). These students may benefit from the many opportunities enjoyed by non-disabled college students, but they may also find college much more challenging. Disability services mandated by ADA such as preferential seating, notes provided, tape-recorded lectures, alternate setting, and extended time for exams may be helpful (Andreon & Durocher, 2007). These accommodations may not provide enough support for students on the spectrum, however, as these individuals can be challenged in many areas.

Autism is associated with difficulties in sensory processing and executive functioning, as well as learning differences and language and social skills deficits (Andreon & Durocher, 2007). Each individual with autism presents with a variety of challenges across these areas, and has a unique pattern of strengths and weaknesses. This means that to the greatest extent possible, support must be customized to individual needs to best help college students on the spectrum. The ongoing proliferation of technological advancements makes such individualization increasingly possible. See Mull & Sitlington, 2003 for a review of literature on the use of technology to support post-secondary students with disabilities – and remember that technology has come a long way in the past 10 years.

One key support is to provide choices in content delivery. If students are presented with a variety of learning experiences, they can choose their most effective strategies. Traditional college teaching strategies often involve assigning readings and then lecturing on selected aspects of the readings – or on entirely different material. Students with autism who are limited in their abilities to process different types of information could miss out on a lot with this strategy. Even simple information like instructions for assignments and teacher and peer introductions may be difficult to process. Often, this information is only shared verbally, so students who struggle with auditory processing are at a disadvantage. Providing written as well as verbal instructions may be the best solution for these students.

Choice of assessments can also be helpful to students with autism. Some express their knowledge and demonstrate mastery of material verbally, while others do better in writing. Some students with autism can be extremely anxious about tests, or lack certain test-taking abilities like staying on task or managing their time, making testing an ineffective way to truly assess their learning.

Offering choices can involve a tremendous amount of extra work for the instructor to prepare and update content and assessments in different formats and modalities. Choices should be offered carefully, because some students on the autism spectrum are resistant to being treated "differently." And alternative assessments need to be equivalent, fair, and meaningful.

Dana R. Reinecke, PhD, BCBA-D

Technology can help overcome the challenges of incorporating choice strategies into classes. Alternative forms of content delivery do not need to be fancy, they just need to be made available to students who need them.

- Choose textbooks available in both audio and text formats. If a book doesn't have an audio format but can be read on an e-reader, there may be the option to convert to audio.

- Encourage students to create their own audio content for later listening by allowing them to record lectures and class activities with smart phones.

- Record classes and make them available to students for repeat listening and viewing by posting them to YouTube, on public or private channels.

- Make lecture notes and PowerPoints available for students who rely on written formats for most of their learning. Cloud services such as Dropbox and Google Drive provide multiple access points so students can customize their experience.

Choices of assessment can be offered by providing flexibility in the format of deliverables.

- Allow students to demonstrate their understanding of content verbally. Services such as Audioboo allow for free recording and sharing so that students can submit audio essays to fulfill certain assignments.

- Give students who struggle with long writing assignments the option of producing a PowerPoint or Prezi that highlights and describes the important information in an outline format.

- Software such as Dragon can be helpful for students who have difficulty getting started writing, but can talk about the subject more easily. This application allows students to speak into a microphone and converts their speech to text that they can then edit into a written product.

- Offer more frequent, lower-stakes tests to alleviate test anxiety. Offering a weekly five-question quiz is much less stressful for most students than one 50-question exam at the end of a 10-week semester.

- Explore alternative formats for quizzes such as SurveyMonkey links and smart phone polling apps such as Poll Everywhere, which may also be less stressful for students.

Another important way to support college students with autism is to apply the principles of shaping, or the process of gradually shifting expectations to maintain a consistent level of success, ultimately resulting in the establishment of new skill sets. Instructors can apply shaping at the college level by providing frequent assessment, clear and specific feedback, opportunities to revise work based on feedback, and assignments that build in complexity.

These strategies can be time-consuming for teachers and are often based on written feedback, which can be difficult or confusing for students. Once again, technology provides solutions.

- Offer frequent online quizzes that can be automatically graded. Most colleges have a learning management system, or LMS, in which instructors (even of face-to-face courses) can set up question banks and offer quizzes that provide immediate feedback without instructor intervention. Though time-intensive to set up, this proves extremely efficient in the long run.

- Set up gradebooks in the LMS to provide students with continuous feedback on their progress. In the absence of a LMS, share spreadsheets through Google Drive or Dropbox to keep students updated on their grades and progress.

- Utilize screencasting and recording programs such as Audioboo and Screencast-O-Matic to deliver audio feedback for students who are stronger listeners than readers.

Students with autism benefit from flexibility, especially when confronting social challenges. Instructors can change the way group and partner work is handled, but eliminating collaborative experiences for students with autism is not a good solution long-term. Instead, instructors can take advantage of the plethora of technological options now available for social networking. Skype, Facebook, Twitter, and e-mail are just a few ways in which students with autism can more comfortably interact and work with peers in a variety of ways – real time, asynchronous, and at-a-distance – and often serve as a bridge to more spontaneous, face-to-face interactions.

Finally, students with autism are often more successful when their learning environment is simplified. This includes being consistent, limiting changes or surprises, clearly broadcasting all expectations (in both audio and text formats), and using stable patterns. For example, having work always due on the same day of the week; providing reminders; and using consistent visual supports (such as notes on yellow paper and assignments on green) are simple ways to support students with autism.

Once again, technology provides helpful methods for adopting these strategies.

- Word processing and presentation programs allow teachers to reuse templates throughout a course for consistency.

- Students with autism can be encouraged to use technology to provide automatic prompts and reminders for themselves, by setting calendar alerts on their smart phones, and teachers can use programs like Remind 101 to send out text messages to the class to keep everyone on track.

- Clip art and photographs available online can be used as icons and symbols as additional visual supports.

While there are challenges for students with autism spectrum disorders who enter college, there are also many solutions that can easily be implemented by instructors using available technology. The strategies described in this article are all used in The Sage Colleges' Achieve Degree program, which is a true bachelor's degree designed specifically for students on the autism spectrum. The Achieve Degree is a fully online program, but these suggestions are equally applicable in traditional face-to-face or hybrid settings. Students with autism in any college program can be more successful given the proper support, and technology solutions have made those supports more easily available.

To learn more about the Achieve Degree online bachelor's program at Sage, visit www.sage.edu/achieve, e-mail achieve@sage.edu or call (855) 509-6607.

References

Adreon, D., & Durocher, J. S. (2007). Evaluating the college transition needs of individuals with high-functioning autism spectrum disorders. *Intervention in School and Clinic, 42*(5), 271-279.

Mull, C. A., & Sitlington, P. L. (2003). The role of technology in the transition to post-secondary education of students with learning disabilities: A review of the literature. *The Journal of Special Education, 37*(1), 26-32.

USDOE. (2011). http://www2.ed.gov/about/offices/list/ocr/transition.html

The Technique of "Twitter Speak" May Create More Effective Communication with Your Teens

By Beth Yurman, PsyD
Licensed Psychologist

"Twitter Speak." What is it and how will it help communication with your teenager progress more smoothly? If you are a parent who has ever been confronted by your child responding with short, disinterested comments when you attempt having what you believe to be a "regular" conversation, the information to follow might be key.

Being a teenager can be a confusing time for many youngsters who are trying to find themselves and figure out where they fit in in the world. The teenage years are when developing children form an identity for themselves, and begin to understand the world around them and function more independently. To enhance this independence, teenagers wish to receive information that pinpoints their curiosities instantaneously and provides immediate answers. Many times, avoidant behavior or disrespectful dismissal towards parents during a normal conversation can become commonplace. Often interpreted as frustrating and troublesome by parents, this does not have to be routine. "Twitter Speak" (credit is given to Ms. Patricia Schissel for coining this term) is a term that I have found to be very helpful when parents are trying to get certain points across to their teenagers. While parents care for their children and wish to include as much information as possible when discussing important topics, often what is heard by the child is the first few sentences of speech while the rest becomes white noise and is tuned out. Once the white noise "switch" is turned on, the response from your child might be one-worded, brief, or result in him/her walking away or avoiding the conversation altogether.

Beth Yurman, PsyD

Twitter is a social network that was created to allow its users to "tweet" or speak in very short, succinct phrases that convey the user's thoughts/feelings/emotions. The idea behind Twitter is that viewers receive the most pertinent information, without any added detail. "Twitter Speak" is the real life application of the term "tweet." "Twitter Speak" can be a very useful tool to use when conveying important information to youngsters because it focuses on the most crucial points and eliminates any additional details. The additional details that you might provide are exactly what become white noise and dismissed altogether by the teenager who is looking for immediate gratification and answers. For example, when parents are making a point about the importance about being home at night for a certain curfew, instead of delving into the detail that causes your own mind to loop (increased risk of being in danger, less sleep at night, car accidents on the road, traffic, less visibility, etc.), it is important to establish the most important point(s) and state clearly to your child something along the lines of: "I want you to get sufficient sleep so I need you to be home by 11 pm on weekends." When lengthy explanation and details are incorporated into an explicit rule that you are trying to establish, your teenage will hear something punitive, begin to justify reasons as to why none of your concerns should be concerns, and dismiss the conversation. Once this becomes a pattern, your child may begin to avoid all conversation. A question such as, "what did you do at school today?" might yield the reply, "nothing" from your child on a daily basis.

Just as public school curriculum is often "chunked" in special education classes so that material is broken down and becomes simpler for struggling students, it is imperative for parents to also subscribe to this "chunking" technique when speaking with their children. Just as bulleted points are written down as a professor gives a long lecture, these points are crucial for children to receive as well. When too many details that support the main ideas are added into conversation, the main ideas become lost and muddled in the teenager's mind, and the conversation can go south quickly.

As parents it is our duty to provide our children with information to help them navigate through the world and develop independent skills. However, when too much information is provided children can go into "information overload" and our good intentions become washed away. "Twitter Speak" is a simple way to enhance communication with your teenager and improve

see Twitter on page 32

Designing Databases That Drive Continuous Improvement for Clients and Organizations

By Andrew Shlesinger, MSW and Frank Bird, MEd, BCBA Melmark

Today's classrooms are often filled with technology, some not even imagined just a decade ago. Tablet computers loaded with educational or communication software, PC stations, iPods, Augmentative and Alternative Communication (AAC) devices, and Wi-Fi internet service are all commonplace. They serve various uses including data collection, communicating, skill acquisition, or reinforcement.

This article will focus on the technologies that help collect and analyze data across students, classes, programs and schools. These solutions offer teachers the tools to deliver individualized treatment to their student in a timely and effective manner while providing the organization with the information it needs to continuously improve on key areas of quality and effectiveness.

Andrew Shlesinger, MSW

Frank Bird, MEd, BCBA

Individual Treatment Solutions

Delivering evidence-based teaching strategies competently and effectively often requires a tremendous amount of measurements, data-collection, calculation and analysis. Technology can assist the teaching process dramatically by providing real-time data collection, calculations of results, automation of the workflow processes, graphing and reporting, assessment data, analysis tools and automation of agency and governmental requirements. Such technology improves the speed of delivery and shifts thousands of hours of teacher time from data-entry work to working with the students.

Due to the data-intensive nature of evidence-based teaching methodologies like Applied Behavior Analysis, much of the focus of custom technology solutions revolves in some part around a database. A database is basically a central repository into which all forms of data from around the organization can be collected, organized, reported, graphed, charted, compared and otherwise analyzed. Databases can be programmed directly to include automation of workflow, reporting and more, or it may collect data from a separate "front-end" program or web application the organization has developed.

Designing a database and program that is right for your school requires both a bird's eye view of the organization and a detailed understanding of the day-to-day tasks each member of your staff encounters. Melmark, for example, designed and programmed their proprietary academic and clinical database over seven years ago from the ground up. This program automates the academic and clinical data collection as well as all the graphing and reporting requirements. Implementing this program freed each direct staff member from approximately two hours of data and report preparation per week, equating to thousands of hours per year shifted from paperwork to working with the students. Additional databases at Melmark serving the individual include weight and BMI trackers, bowel movement and menses trackers, sleep charts and proprietary

see Improvement on page 37

The Lighter Side of the Spectrum ~ A Mom's View

By Carrie Cariello

The Sex Talk vs. The You Have Autism Talk

So, we've got this guy in middle school now. And he is all sorts of cool. Savvy. Phrases like *let's play* have been replaced by *let's hang out*. He makes scrambled egg sandwiches for himself in the morning and wants to walk home from the bus stop alone in the afternoon. There is swagger in his neon-sneakered step.

Last spring all the parents of incoming fifth graders were invited to the middle school cafeteria so we could preview The Movie. You know, The Movie that shows ten-year old kids how their bodies change and mature, what they can expect as they enter puberty and discover the opposite sex. Let me just say I learned a few things.

I imagined we would sit Joey down when the time came and have the Sex Talk. But about six months ago I realized he knows way more than we think; juicy details and tidbits gleaned from the back of the school bus and movies and music. Every once in a while he'll ask something like, "So you and Dad had sex five times?" And I will say, yes, just five.

Joey

He and I were alone in the car one afternoon, talking about kids and families, and I asked him how many kids he'd like to have.

"Oh, I don't know," he answered casually. "I guess it depends on how much I enjoy having sex."

I nodded nonchalantly, my eyes trained on the road. There didn't seem to be much more to say.

I figured we'd sit Jack down at some point soon and have a similar discussion, about him and autism. And I've been dreading this talk, the You Have Autism talk, much more than the Sex Talk.

Because sex—although an awkward and uncomfortable subject—ultimately leads to family and children. And if you have one too many French Martinis on date night it can even lead to a fifth baby who weighs ten pounds. That happened to a friend of mine.

Discovering sex is like a flame gathering speed along a long fuse, eventually exploding in a brilliant spark of color and enlightenment.

But discovering you have autism? That's like saying, listen, I know we've been pretending all along that you're just like the rest of us, that it's perfectly normal to ask people when they will die and to remember what year Hershey started making chocolate.

But it's not. You're not. You are different, diagnosed, identified.

You have something called Autism Spectrum Disorder.

For the most part, the You Have Autism Talk seemed to be following the same path as the Sex Talk. In the past year or so, Jack started picking up on little details here and there that make him different, things like speech therapy and a paraprofessional and stimming.

But instead of a spark igniting, I pictured this discovery more like a balloon full and buoyant with air. Each new finding—each new *why do I have an aide and Rose doesn't*—is like the tiniest leak, until the brightly colored circle drifts to the floor, empty and weightless.

Last spring I had all the kids in the car and we were headed to the playground so they could run around while Joey played baseball. Charlie suggested he could watch the kids if I needed to take Henry to the bathroom, but Rose interrupted, "Why doesn't Jack watch us? He's older."

"Because," Charlie answered. "He has autism. He can't."

Hearing this, Jack promised, "I won't have my autism at the park. I will leave it in the car."

(It took everything I had not to look back and ask, *oh, we can LEAVE IT BEHIND? All these years we've been lugging your autism around to all sorts of inconvenient places like the grocery store and church and doctors' offices and the library, where it screams and shouts and asks people about death? Huh*.)

see The Talk on page 32

Leaders Gather to Celebrate Autism Spectrum News' First Annual Event

Staff Writer
Autism Spectrum News

On November 6, 2013, *Autism Spectrum News* held its first annual *Leadership Awards Reception* at the Crowne Plaza in White Plains, NY, to celebrate leaders who are making a difference in the autism community.

The Beacon of Hope Award was presented to honor two outstanding members of the autism community for their extraordinary dedication and devotion to individuals with autism and their families. Charles N. Cartwright, MD, Director of the YAI Autism Center was presented with the *Beacon of Hope Award in Research and Clinical Outreach* and Linda Walder Fiddle, Esq., Founder and President of The Daniel Jordan Fiddle Foundation was presented with the *Beacon of Hope Award in Advocacy and Philanthropy*. Both Charles and Linda gave truly inspirational acceptance speeches. Each highlighted their lifelong journeys which led them to devote their lives to creating vital programs to improve the lives of children and adults with autism, and to unlocking the mysteries of autism through groundbreaking scientific exploration.

Over 100 guests were in attendance, including Mental Health News Education, Inc. Board Members, Autism Spectrum News Editorial Board Members, service providers, individuals on the spectrum, parents and family members, advocates, educators, and other stakeholders in autism. The event raised $20,000 to enhance community autism education and awareness by expanding the free distribution of *Autism Spectrum News* and by providing unlimited free access to our website (www.mhnews-autism.org) that provides vital autism information and education to the entire autism community.

Event Honorees
Charles N. Cartwright, MD
and Linda Walder Fiddle, Esq.

Honored sponsors of the event included the YAI Network, The Daniel Jordan Fiddle Foundation, the ARC of Westchester, the Autism Science Foundation, Optum, NY Collaborates for Autism, Susan Cortilet-Jones, Alan Eskenazi, Donald Fitch, Judith Omidvaran, Jorge Petit, Terry Pirraglia, Patricia Rowan, and Mary Zingaro.

"I couldn't be happier with the success of our first annual event. The work that Linda and Charles have done for individuals with autism is truly inspiring. They are also two of the nicest and most genuine individuals you will ever meet, and the autism community is very fortunate to have them advocating on their behalf," said David Minot, Publisher of *Autism Spectrum News.*

According to Dr. Peter D. Beitchman, DSW, LMSW, Chairman of the Board of Mental Health News Education (MHNE), the organization that publishes *Autism Spectrum News,* and CEO of The Bridge in NYC, "The success of this first annual event and the continued growth of the *Autism Spectrum News* publication speaks to the autism community's increasing demand for a trusted resource of science-based autism education, information and community resources."

According to Ira Minot, LMSW, Founder and Executive Director of MHNE, "My son David and I owe the success of *Autism Spectrum News* to the countless individuals and organizations that are working tirelessly to improve the lives for individuals with autism and their families. The financial success of this event will allow *Autism Spectrum News* to touch the lives of many more families and communities in New York and across the country that are in need of vital autism information and education."

A big change is coming to the *Autism Spectrum News* website, according to David Minot: "In the coming year, we are redesigning the *entire* website to enable our content to reach more people in a whole new way. This is a big project for us, and once completed it will serve as a new way of communicating with the autism community by providing a more interactive and immersive experience. This will be big!"

Autism Spectrum News would like to thank all of our generous sponsors, donors, honorees, guests and volunteers for making the *Autism Spectrum News* First Annual Leadership Reception a tremendous success!

Marco Damiani, MA, Executive Vice President, Innovation and Services, YAI, Charles N. Cartwright, MD, Director, YAI Autism Center with his Beacon of Hope Award and David Minot, Publisher, Autism Spectrum News

Jorge R. Petit, MD, President, Quality Healthcare Solutions Group and President-Elect, Board of Directors, MHNE with Constance Y. Brown, MPA, Vice President, Community and Government Relations, Institute for Community Living and MHNE Board Member

Dr. Peter D. Beitchman, DSW, LMSW, CEO, The Bridge and Chairman, Board of Directors, Mental Health News Education, Inc. (MHNE) with Donald M. Fitch, MHNE Board Member and Anne G. Katz, Former Board Member, MHNE

David Minot, Publisher, Autism Spectrum News, Linda Walder Fiddle, Esq, Founder and President of The Daniel Jordan Fiddle Foundation (DJF) with her Beacon of Hope Award, and Vicki Ofmani, MEd, LDT-C, Founding Board of Trustees Member, DJF

Judith Omidvaran, Parent Advocate, ASN Editorial Board Member and MHNE Board Member, Charles N. Cartwright, MD, Director, YAI Autism Center, and Marna Solarsh

Autism advocates Mary Zingaro, Bonnie Kaplan and Ellen Weinstein

ASN Editorial Board Members Cindy Alterson, PhD, BCBA, Principal/Program Director, Devereux Millwood Learning Center and Theresa Pirraglia, Co-Founder and Board Member, The Foundation for Educating Children with Autism

Stuart M. Flaum, Special Needs Financial Planning with David Kuhn, PhD, BCBA-D, Clinical Director, Center for Autism and the Developing Brain at NY Presbyterian Hospital

Leaders Gather to Celebrate Autism Spectrum News' First Annual Event

Top Row: Antoinette Gentempo, Vicki Ofmani, Board of Trustees, The Daniel Jordan Fiddle Foundation (DJF), Pamela Ball, Director of Community Affairs, DJF, Steven A. Ball, Strategic Planning Chair, DJF, Jessica Walder, Assistant Director, Special Needs Program, Metrowest JCC, Jeff Walder, and Linda Delaney, The Gillen Brewer School Bottom Row: Sherie Reiter, Linda Walder Fiddle, Founder and President of The Daniel Jordan Fiddle Foundation, Amy Gravino, A.S.C.O.T Coaching, LLC, and Michael Gravino

A proud family in support of Charles, including: Sam Cartwright, Taube Berger, Shirley Berger, Terry Kaye, Mark Walters, Charles N. Cartwright, MD, Director of the YAI Autism Center, and Harold Berger

Dr. Peter D. Beitchman, DSW, LMSW, CEO, The Bridge and Chairman, Board of Directors, Mental Health News Education, Inc. (MHNE) Jorge R. Petit, MD, President, Quality Healthcare Solutions Group and President-Elect of the MHNE Board of Directors, Peg Moran, LMSW, Senior Vice President, F·E·G·S Health and Human Services System and Secretary of the MHNE Board of Directors, and Michael Friedman, LMSW, Former Board Member, MHNE

Marco Damiani, MA, Executive Vice President, Innovation and Services, YAI, Charles N. Cartwright, MD, Director, YAI Autism Center, Nicole Rizzitiello, Practice Administrator, NY Presbyterian Center for Autism and the Developing Brain, Jill Krata, PhD, Manager of Clinical Services, YAI Autism Center, and Tracy L. Kernan, Mental Health Clinician, YAI LINK and YAI Autism Center

Richard Swierat, Executive Director, ARC of Westchester and ASN Editorial Board Member with Tibisay Guzman, Assistant Executive Director, Day and Community Services, ARC of Westchester

Sam Cartwright was very proud of his father Charles Cartwright, MD for receiving the Beacon of Hope Award in Research and Clinical Outreach

Marty McGreevy, Academic Coordinator, New Frontiers In Learning with Dianne Zager, PhD, Michael C. Koffler Professor in Autism, Pace University and ASN Editorial Board Member

David H. Minot, BA, Publisher of Autism Spectrum News and Associate Director of MHNE with his father Ira H. Minot, LMSW, Founder & Executive Director, Mental Health News Education, Inc.

Maximize Social Learning by Combining Portable Technologies and Proven Video Modeling Techniques

By Laurie Jacobs, MA, CCC-SLP
Co-Founder
Social Skill Builder, Inc.

If you are looking for a way to bridge the social language gap to help kids with ASD, Asperger's and other learning disabilities achieve success in social situations; interactive video modeling tops my list. This method has research-validated results, and I have seen my own clients grow by leaps and bounds by watching real-life, same-age peers modeling social scenarios, dissecting and discussing the videos with them, and then building social understanding and incorporating those skills into their daily lives.

Interactive video modeling programs, such as Social Skill Builder social skills software curriculum and other video applications available online or in the portable applications (app) market can kick start your video modeling program. These can be readily found by a simple internet search for social language videos or apps, and my website www.socialskillbuilder.com provides an updated list of apps that I recommend. Remember, you are looking for short videos using real pictures (think Snapchat, Vine or Instagram) and succinct narration to detail the skill you are focusing on. Nikopoulous and Keenan (2006) highlight that video modeling "can be a useful medium for learners who cannot take advantage of print material or complex language repertoires." Once the parent or instructor is comfortable with the structure and concepts of the peer modeling, they can begin to create customized videos targeting specific skills for individual children.

Laurie Jacobs, MA, CCC-SLP

As the video scenarios unfold, the user steps inside familiar social situations to make choices, predict outcomes and problem-solve. With the visual attraction of video and interactive of the questions, learning social skills becomes fun and entertaining. Lasting improvement can be achieved by using teaching strategies that capitalize on the visual learning strengths of children on the spectrum and allow for repeated evaluation of targeted social behaviors.

Students with video modeling training have exhibited increased confidence and acceptance of transitions in different social scenarios; and increased expressive language skills and decreased anxiety and negative behaviors have been noted in situations that once caused problems (Chen SH, Bernard-Opitz V 1993). In real life situations, social learning opportunities often occur so quickly that teachable moments such as body language or a glance are gone before they can be identified; but with video modeling each scene can be paused, with the opportunity to replay scenarios and study the different layers of social cues for greater understanding. Such practice provides children with more intuitive insight into social interactions and increases their confidence as they try out new skills in their real-world environments as seen in the study by D'Ateno, et al., 2003.

Why Social Skills Training?

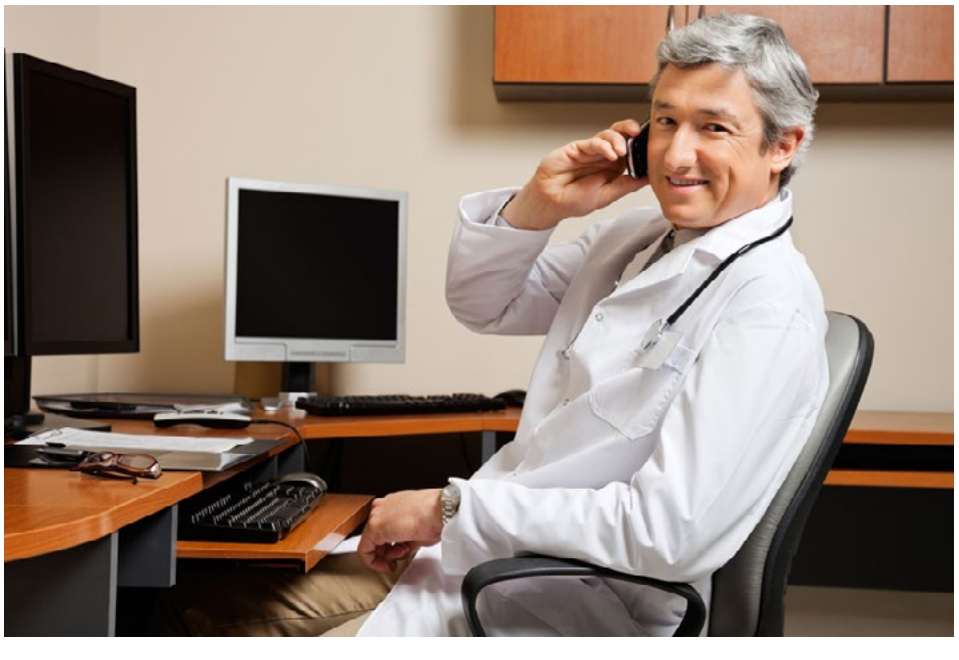
A 1992 Duke/Emory University study showed that nearly 93 percent of communication is nonverbal, requiring acknowledgment of gestures, body language and facial expressions. Unlike their neurotypical peers, children who struggle with pragmatic language do not acquire basic social skills through general experience and observation, usually because of the complexity of the interaction and all of the "unwritten" and situational-dependent rules. Social skills training uses problem-solving techniques to actively teach children the skills they need to be successful and to cope with challenging situations in their social environment. Research has demonstrated that video social skill training using real peer subjects (as opposed to drawings or cartoons) is one of the most effective treatments for helping children with ASDs and other learning disabilities succeed in their interpersonal and social awareness.

Additionally, research has established that many students with pragmatic learning disabilities, particularly those with ASDs, are drawn to visual stimulation and are often

see Social on page 36

B.F. Skinner's iPhone: The Era of Technology-Enabled Clinicians

By Michael J. Cameron, PhD, BCBA-D, Melissa Cline, MSEd, BCBA, and Rebecca Hise, MS, BCBA
Pacific Child and Family Associates



B.F. Skinner was an American humanist, philosopher, behavioral scientist, author, and inventor. In his latter capacity, Skinner had a keen interest in the education of children. In fact, in a notable quote that captures his personal philosophy he suggested that: "It has always been the task of formal education to set up behavior which would prove useful or enjoyable later in a student's life." In consequence, in 1953, in an effort to make education both effective and enjoyable, Skinner built the first teaching machine. The efficiency and effectiveness of the teaching machine can be attributed to the automaticity of feedback, the delivery of educational reinforcement, the inherent individualized pacing system, a logical instructional sequence, and active student engagement. Given Skinner's interest in the use of technology for learning and behavior change, we suspect that if he were walking the streets of Cambridge, Massachusetts today he would definitely have an iPhone in his hand (all right, we concede, maybe it would be an Android). Nevertheless, we suspect Skinner would be using mobile technology to facilitate learning and human engagement for the compassionate advancement of our culture. Therefore, in an effort to celebrate B.F. Skinner's legacy, we have outlined below two innovative methods for supporting the education of children, and rendering the educational process enjoyable, through the use of technology.

Behavioral Intervention Technologies (BITS)

According to Northwestern University's Center for Behavioral Intervention Technologies (CBITS) (http://cbits.northwestern.edu), "Behavioral Intervention Technologies are applications that use technologies such as mobile phones, computers, tablets, and sensors to support behaviors that improve health, including mental health." We have generalized the findings of Northwestern University's "proof of concept" studies and, through our own clinical work, have explored the utility of using Behavioral intervention Technologies for supporting children with Autism Spectrum Disorder and their families. More specifically, we have examined the practicality of both web-based and mobile phone interventions. Our fieldwork shows that both of these technological platforms result in highly favorable clinical outcomes.

Web-Based Intervention: A Case Study

The goal of one of our clinicians was to support a young boy (we will use the pseudonym Ammon to refer to him) to engage in the observances, rituals, and routines of his family. More specifically, Ammon was expected to: (a) attend to his personal hygiene (e.g., brush his teeth, shower, put on deodorant, and change his clothing on a daily basis); (b) take responsibility for household chores such as putting his clothing in a laundry basket at the end of the day; and (c) participate in family-strengthening routines (e.g., listening to family joys during the evening meal). However, during the initial assessment phase, it was determined that Ammon engaged minimally in the aforementioned activities, or not at all. Despite Ammon's inappreciable family engagement, it was determined through a strength-based assessment that Ammon had a keen interest in sport teams, player's statistics, and scores. He also had a strong interest in technology and a sociable

see Clinicians on page 38

The Importance of a Visual Schedule

By Marieke Hoekstra
Mother of Jan

It's half past eight in the morning. Jan, a 10 year old boy with ADHD, wakes up. His phone plays a nice, calm melody to wake him from his slumber. When the music stops, he looks at the screen of his phone to see a picture in black and white with a little man sitting on his bed and is preparing to stand up. Next to that picture is a small clock, which slowly counts down from two minutes to zero.

Jan sits down on his bed, copying the action he sees on the pictogram. After the two minutes have expired, he hears another signal and Jan looks at his phone again to see the next picture: another puppet washing himself. Next to it is some text saying: "wash up and get dressed." The app also speaks these instructions out loud in a calm, friendly voice. He can see the picture of a man dressing up next to it, and he can also see the little clock with 10 minutes remaining. Jan begins. He goes through his morning routine and checks off all the scheduled activities one by one.

At 8 o´clock he is sitting at the table for breakfast, with brushed teeth and fully dressed. This would not be possible without the visual support that the phone gave him. His entire day is planned like this, so he gets a notification to get his coat and one that tells him to ride his bike to school. This

Marieke Hoekstra

is also very convenient for his mother. Instead of having to remind Jan of each step in his routine, she can instead spend time on her morning routine. She doesn't have to ask if he already has his shoes on, or chase him around the house to make sure he will not be late. Jan and his mother both start the day without stress or wasted time.

Visual Scheduling is creating a daily schedule using pictures, also called pictograms. You can also use photos as a pictogram. Most people use downloaded pictograms or pictures made by themselves.

Research of the Indiana Institute on Disability and Community has demonstrated that children with an autism spectrum disorder or with Down's Syndrome benefit from a visual schedule (www.iidc.indiana.edu/?pageId=394). It's not only young children who can benefit from using a visual schedule - teenagers with autism or Down's Syndrome also find it useful. A good schedule provides predictability and structure, thus reducing stress. A visual schedule is also beneficial for people with Alzheimer's.

Because you don't have to remember the order of all the activities, you can focus on what you are doing right now. At any time, you know what you are supposed to do and you can always take a look at your planning to see what the next activity is. This way you can mentally prepare for what is up next, alleviating the stress of the day to day routine.

Of course, every system has its pros and cons. If it takes parents too long to create visual schedules, they might begin to wonder if the benefits are worth the time. Most parents see a huge difference in their children's behavior, so they don't mind putting in the time to create these schedules. The quicker the schedules can be created, the more likely it is that parents will use them regularly.

There are a few systems to make the creation of a visual schedule easier and less time-consuming. One of the simplest ways is to print out pictures and place them on a to-do list. However, this manual approach takes a lot of time and must be repeated every day.

We wanted to help our son Jan by providing him with visual schedules, but without the daily manual labor. In the end we built AutiPlan.com. This is a website with thousands of pictograms in a database, ready to use. The program uses a drag-and-drop system to place these pictograms in a planning quite easily. You can adjust time and the text showing with the pictogram. Also, different activities, like waking up, brushing your teeth and dressing up can be made into one timeslot. These visual schedules can be printed out on paper, or used directly from an app. The viewer also plays a custom sound when it is time to move on the next activity. To help save even more time Autiplan.com supports reusable templates so you don't waste time adding the same items - such as getting dressed - each day. This saves a lot of time and work every day, leaving you more time to spend doing fun things with your children.

I know how tough it is for parents, which is why Autiplan is free to use for personal accounts. It contains everything you need to get started with visual schedules. When you create an account there is also a one month trial of the full version included, which includes features such as the PlanViewer, Android-app, weekly schedules and using your own pictures in a Visual schedule.

see Schedule on page 30

Special Education and College Readiness

Adrienne M. Nagy, MA
Director of Transition and Guidance
Aaron School

Specialized college programs that provide support for students with learning disabilities, non-verbal learning disabilities, and Autism Spectrum Disorders are continuing to grow throughout the country. Although there is an increase in the number of programs that will assist students in receiving academic and social coaching, how do you know if a student is a good fit for a particular college program? Is there a hard and fast rule that indicates a young adult is ready to leave home, pursue college-level coursework, and live on his or her own? There are many aspects to consider in this process and ways in which parents, counselors, and educators can assist in fostering college readiness.

First, it is important to consider what supports are available at the college level. Different levels of support are offered for students with a diagnosed disability, depending on the particular college. It would be detrimental for a student to attend a college that does not offer the type of accommodations he or she needs in order to be successful. There are colleges that exclusively accept students with disabilities, as well as comprehensive support programs that offer academic and social coaching within a mainstream college or university. These programs typically charge a fee to students who are accepted in addition to tuition/room and board, whereas a specialized college accepting only students with disabilities will include this fee under the umbrella of the entire year's tuition.

Adrienne M. Nagy, MA

Every college is required by law to have an office of disability services. Through this office, students are required to advocate for their accommodations using current documentation (adult testing is required, within the last three years of the college application) and are typically offered less support than a specialized college or a comprehensive support program within a college or university. Some students fail to self-advocate for their accommodations and attempt to leave their disabilities behind them in high school. This can lead to a decline in grades, self-esteem, and a feeling of helplessness over their college experience.

In the area of college readiness, there are a few critical components to consider:

Awareness of disability: Can the student identify his or her disability? Does the student know what accommodations are needed in order to reach his or her full potential? Can the student advocate for these necessary accommodations? Understanding their disability and being able to relay this information to receive the necessary accommodations from both the office of disability services and their professors are critical to achieving success at the college level.

Interest in pursuing a college degree: Has the student demonstrated interest in pursuing education beyond high school? What does the student hope the degree will lead to in terms of a career path? Does he or she want to attend college simply because this is what his or her cohort is doing? Without a genuine interest in completing college-level work, students are likely to struggle with work completion and academic success. It is important to preemptively seek out support services that will be able to assist the student with the transition, prepare for a more challenging course load, and learn how to properly self-advocate.

Level of independence: Has the student ever lived away from home before? Does he or she have experience in caring for themselves (washing clothes, organizing materials, managing money, waking up on their own, etc.)? Has the student participated in an overnight camp experience or overnight program at a college? Does the student commute to and from school independently? Does he or she have an emergency plan of action for their commute? Is he or she able to manage money on his or her own to purchase meals, transportation costs, and recreational interests? Exposing students to life skills such as these will increase their chances of a successful post-secondary experience.

Executive functioning skills: Is the student able to wake themselves up in the morning for school with enough time to get ready? Does the student organize

see College on page 37

Digital Storytelling Enhances Self-Expression for Individuals on the Autism Spectrum

By Lorraine Cohen, MS, CCC-SLP
Assistive Technology Specialist
AHRC New York City

At AHRC New York City, digital storytelling is enhancing self-expression for individuals on the autism spectrum through a community service-learning partnership with Pace University. AHRC New York City is a large, family-governed, nonprofit organization that has been serving individuals with intellectual and other developmental disabilities ("IDD") for over sixty years. Individuals on the autism spectrum are integrated into the more than twenty Adult Day Service programs located around the city and comprise the overwhelming majority of the one hundred and twenty students who attend AHRC New York City's Middle High School in Brooklyn. AHRC's overarching commitment to technology is founded upon the belief that technology is currently part of everyone's everyday life and provides opportunities for individuals not only to participate more fully in daily activities but also to explore their identity, enhance self-expression and increase independence. The Pace University community service-learning partnership provides a platform for individuals on the autism spectrum to use mobile technologies to expand their communication, social, and technical skills while becoming integrated members of their communities.

Since 2007, digital storytelling has been the focus of AHRC New York City's service-learning partnership with Pace University. Individuals on the autism spectrum from both AHRC's Adult Day Service programs and Middle High School are engaged in person-centered, digital storytelling projects where technology, and more recently, mobile technology, is used to enhance self-expression by showcasing talents, ambitions and dreams. Dr. Jim Lawler, organizer of the partnership and Professor of Information Technology and Service-Learning at Pace's Seidenberg School of Computer Science and Information Systems says that this collaboration using "mobile technology is giving individuals on the spectrum a critical edge in pursuing learning opportunities and life options, in partnership with enthusiastic and passionate undergraduate students of the university." Yuliya Khripunkova, an AHRC New York City Transition Developer, assists in pairing AHRC individuals with Pace students according to similar interests and talents. Each semester, classes meet weekly at the Seidenberg computer labs at Pace Plaza on Tuesdays and at the facility labs at the Middle High School on Fridays for semesters of fourteen weeks. The digital, person-centered projects being worked on are directed by the individuals from AHRC New York City. A multi-media presentation of the productions of visuals storytelling is a course requirement, and at semester-end all projects are viewed by an audience that includes the Pace students, AHRC individuals, their peers, and staff.

Digital storytelling is a powerful tool for self-expression for individuals on the autism spectrum and success stories abound. A young man of Chinese heritage was proud to introduce his Pace partner to the Chinese culture. They organized a trip to Chinatown, ate lunch together and made an iMovie about their experience. At the end

see Self-Expression on page 32

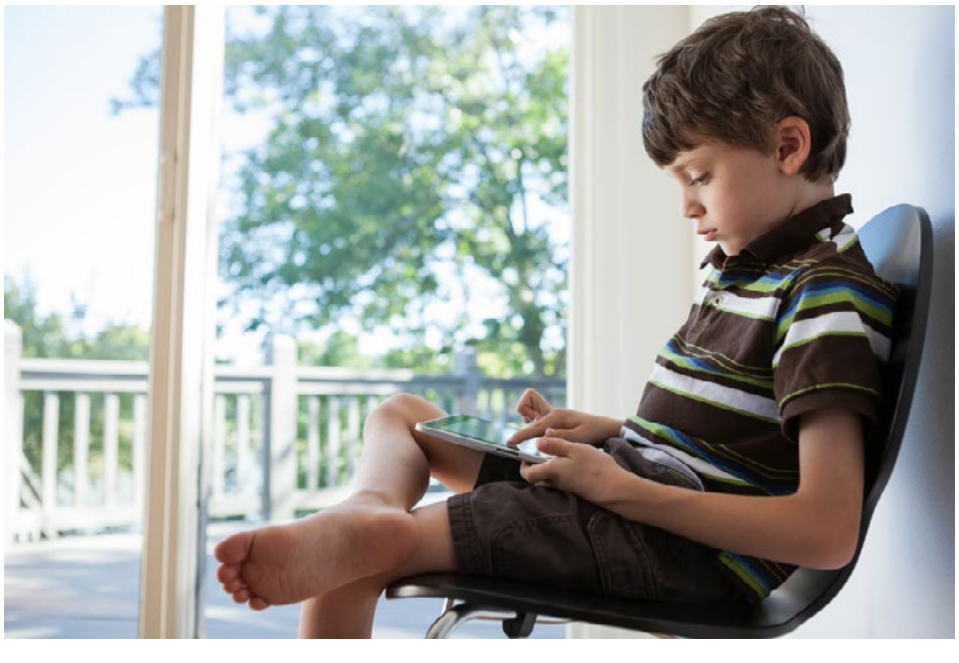
ROBIN'S VOICE ~ A Resilient Mom's Commentary on Autism

By Robin H. Morris, Freelance Writer

Technology and Autism

Technology is a beautiful thing. It can change lives. Years ago, our friend Charlie, who has since passed away, remarked that "someday, we will be able to collect all of our information and store it in a device the size of a credit card." Charlie did not live to see his auspicious vision. So here we are today, using our phones to purchase items, take pictures, chat with friends, check our balance, and research information in a matter of seconds. How can this work for the autism community?

When our quadruplets were toddlers, I needed the tentacles of an octopus to simultaneously reach each crying baby. The miracle of Disney on videotape was my new friend; a nanny of the technology kind. Walt Disney had no idea that "A Dream is a Wish Your Heart Makes" would be the catalyst to propel words from our autistic son's mouth. Our beloved speech therapist, Dr. Nancy Schwartz, used the television as the catalyst for the prompt. "Turn it…?" she started the phrase. Paulie walked up to the TV, pointed and said "On." One single word changed our lives. He could talk! And then came the hard work.



Perseverative behavior is a powerful force. Sometimes it is so seductive that even parents and therapists don't realize that it is taking place. Utilizing computer games or television might be fruitful if it is offered as a "supply and demand" exercise. The story below exemplifies the power of allowing the dangling fruit or candy or television show or computer device to evoke language.

Historically, human beings affected by autism, are governed by levels of rigidity and inflexibility. The variables depend on areas of understanding and functioning in the spectrum of pervasive developmental disorders. I do believe that man is innately reactive, and responds to conditioned reflexes, as in Pavlov's experiment. Consequently, flexibility and rigidity might be partners, albeit unwilling, in tackling autism. Consequently, if one subscribes to the behavioral modification theory, we might be convinced that if the stakes are high enough, flexibility could be induced by the dangling carrot, candy, video, train game, twirling top, or any other inflexible routine. Basically, we hold the abhorrent behavior hostage, and make it work for us. Clearly Annie Sullivan was successful in developing communication with Helen Keller. She too, used a behavioral model.

Initially, our disabled toddler seemed very content in his world. He did not tantrum or cry unless he was hurt. However, we never allowed him to perseverate or dwell on rigid ritualistic behavior. I remember sabotaging his obsessive design of salt, pepper and napkins that were grouped in a line on our kitchen table. Every time he tried, I went in there and messed it up. We were operating on gut feeling, and somehow fighting an unknown opponent.

When our son remained non- verbal at age 3, and the masters in the field advised us to get a sign board (as used for the hearing impaired) because he would never speak, we instinctively knew that there must be another way. I am keenly aware that there are many children who are able

see Robin's Voice on page 35

Assistive Technology Need Not Be So Technical

By Matthew J. Ratz, MEd
Vocational Trainer for
Adults with Autism

When most people think of the word "technology," they imagine iPads, tablet PCs, or internet-ready glasses. Technology, though, just means machinery or equipment developed for practical purposes. This different understanding of the word "technology" can shift a practitioner's focus from high-tech tools like iPads and electronic voice-boxes to any device that can help a person complete a practical task. A simple machine like a lever, a pulley, or a wedge can be considered technology, and these low-tech tools are both simple and powerful in that they are found easily but can enhance a person's natural strengths to help him complete a task successfully. In my professional role as a coordinator of vocational training, I spend much of my time coming up with simple solutions to stubborn workplace problems. For individuals with autism—be they children, adolescents, or adults—low-tech assistive technology can be immeasurably helpful as new academic and workplace skills are learned and mastered.

Matthew J. Ratz, MEd

Technology for autism does not need to be restricted to Durable Medical Equipment like expensive communication or transportation devices; something as simple as a laminated information card with vital information—and individual's name and address and his likes and dislikes—can be considered "technology." The less intrusive and less obtrusive a tool is, the more likely an individual with autism is to be able to use said tool in the school, the home, and the workplace. A pocket-sized book of PECS (Picture Exchange Communication System) can be a priceless resource for individuals who are non-verbal in unfamiliar environments. Easy fixes that can be speedily and efficiently reproduced can make a huge impact on the lives of individuals with autism. Again, much of my job is spent identifying low-tech solutions to consistent vocational problems and executing these solutions on a large scale for vocational training.

Working from a low-tech paradigm can save time, money, and frustration. What follows are some examples of low-tech solutions. A simple solution to the persistent issue of the quality of folded shirts, both at home and in retail environments, is a shirt-folding board, sometimes called a "jig," that consistently folds shirts along the same creases for easy stacking and storing. Such a device can easily be purchased online for around $15 or made at home. A similar issue is the consistency of folded towels and washcloths in a hospitality setting; a quick fix for this issue is sewing matching colored dots along the creases so that individuals have a guide via which they can make consistent and accurate folds. Physical assistive technologies like jigs and visual cues can make an adult's job much easier and can both improve the quality of his work and the likelihood of maintained paid employment. Similar tools can be applied to academic environments. A wooden board with predrilled holes that is equipped to secure drawer knobs and handles can help students complete loosening and tightening tasks as they work on fine-motor skills and other occupational therapy. Again, any device that helps to achieve a practical task is considered a piece of assistive technology.

Many people without disabilities use assistive technology. Those who wear glasses, use GPS systems, recline on back pillows, or type on ergonomic keyboards all use assistive technology. Tools that aide individuals with autism do not have to have all the "bells and whistles" of electronic devices nor do they need to be the latest product for sale; simple, easy, and inexpensive solutions to everyday problems—when applied consistently and thoughtfully—can be truly life-changing.

For more information, please contact Matthew Ratz at mjratz@gmail.com.

Visit Autism Spectrum News at www.mhnews-autism.org to Read Current and Back Issues Free!

Building Skills in the Classroom with Smart Tablet Applications

By Elizabeth Perez, MS
Special Education HS Teacher
Association for Metroarea
Autistic Children, Inc. (AMAC)

Technology and teaching are becoming increasingly intertwined. Students in the twenty-first century will interact with the world through a technological lens. Technology is changing how and what we learn, allowing students access and directing them to those advancements which will determine future academic success. This article outlines a case study conducted in my self-contained ninth grade classroom to test the effectiveness of Smart tablet math applications for students with Autism who struggle with math fluency.

An understanding of basic math concepts (addition, subtraction, multiplication, and division) is unarguably essential knowledge to which a student must be exposed, and master to continue in academic learning and to function successfully in society. Students often fail to develop automaticity of these functions and find great difficulty in keeping up with the concepts of advanced math that follow in mathematics. Technology is math and today's students are very interested in technology, so teachers who can help students learn through this interest may help students gain the necessary fluency and automaticity in basic math functions to increase future chances for success.

Elizabeth Perez, MS

Mathematics software programs aiding students in gaining fluency and automaticity have been implemented into math curricula across the United States with success, but giving every student access to individual computers and the necessary software can be an economic challenge. If students are struggling to get the numbers right so are the schools, but this is not a study of the economics of education. This was a study of how technology can aid students in achieving automaticity of basic math functions without dependence on calculators. Failure to master the basic operations can further delay if not derail a student with Autism.

Visually-aided instruction is often a vital element in working with students on the Autism Spectrum, such as those found in the evolution of computer technology; enter the smart tablet. And returning to economics for a moment, the smart tablet is a more economical solution to supplying students in classrooms with limited space and it is also easier to share among a group of students. Tablet applications are often more affordable and more adaptable than academic computer software programs. Applications are visually stimulating, graphically interesting, and continually evolving; these elements help promote engagement for students' learning. For teachers, constant evolution is the art and science of teaching, so incorporating new technologies into lessons and classroom exploration may influence students to learn with increasing independence. The evolution of the textbook is the smart tablet, so teachers must begin to expose students to learning through this new technology. Interacting with technology will be unavoidable in the future, so preparing students in the classroom to build an understanding of the progress of technology will allow them greater access to future success.

The introduction of the smart tablet into the classroom provides teachers and researchers with increasing abilities to reach, engage, and motivate students. Smart tablets also aid in keeping classroom records and data. Another aspect of the evolution of the teacher within special education is the instruction to acclimate students to the use of Information and Communication Technology (ICT) supports. I examined how smart tablet apps allowed students on the Autism Spectrum to practice basic math functions in a visual realm. The study helped to determine if repeated use of the apps had any effect on students' fluency and automaticity in solving addition, subtraction, multiplication, and division problems. This experiment evaluated the effectiveness of current technology, namely the smart tablet. The intervention designed for this study was structured as a supplemental intervention incorporated into the Algebra content material. Students were allowed ten minutes per day, three days a week, for the duration of eight weeks to engage with the math application on the smart tablet.

The focus material utilized for this study was specifically the application *Math Racer*. However, for future replications any simple interface math application may be just as effective. Assessment tools provided

see Classroom on page 35

Guide from page 1

augmentative communication device? Is the purpose to provide the child with an escape that involves educational games in lieu of first-person shooter games? These are straightforward applications that have many viable options. However, many products are advertised as having the ability to *treat* ASD, and this is a much harder claim to prove.

We must understand that technology, in and of itself, does not treat ASD, regardless of how interesting the child might find it. In fact, if used incorrectly, it could be detrimental to the social development of individuals with ASD. Individuals with ASD, by definition, have difficulties with social interaction, although these difficulties can vary greatly from individual to individual. Giving a child a tablet computer does not teach a child to be social, even if the applications/games are purported to do so. In many cases, a tablet computer or a game can become a way to escape from social interactions, or a barrier from entering into social interactions. Therefore, we must be strategic in how we use technology if the goal is to improve social interaction.

There are common sense strategies for using technology to increase social skills. First, if the goal is to increase social skills with technology, then it should be used in a social manner. For example, if an individual with ASD is learning skills while interacting with a type of technology, they should then get the opportunity to practice

Joshua John Diehl, PhD

these skills with a human partner. Alternately, technology could be used in conjunction with another person (e.g., a game in two player mode) to elicit person-to-person interactions. Either way, the important component is to use the technology in a social way.

Another approach is to use an interest in a specific type of technology as a way to find "shared interests" with others and use the shared interest as a way to engage in reciprocal communication. If a child has an intrinsic interest in a game, an app, or another type of technology (even if it wasn't made for individuals with ASD), use it as a springboard for conversation with others who might also have an interest in the technology. The first step toward "reciprocal" social interaction is finding a shared interest, and technology might be a good window of opportunity. Recently, our research team at Notre Dame has been developing a summer science camp for high schoolers (both with and without ASD) who have an interest in robotics. They get to learn how to program advanced robots, but the challenge is that they must work in teams. We believe that a shared intrinsic interest in a topic is essential when it comes to social communication, and if we provide opportunities for individuals with ASD to engage in conversation over a shared interest, social performance will improve.

Evaluating Technology

Once you have found an intrinsic interest, and you have a therapeutic or educational approach in mind, the next step is to evaluate the available technology. Many products make claims, and there are a few tricks to help you separate marketing ploys from science. First, search for information on a product on sites that are not trying to sell you something. For example, a search on "Google Scholar" (scholar.google.com) will give you recent studies on a particular type of technology, and possibly even a specific brand in which you might be interested. Be wary of sites that are giving you "research" information about a product, and also trying to sell you the very same product. It is important to go to a neutral source to if you want to get neutral information about a product. When you look at research on a particular type of technology, make sure to check who paid for the research. For example, a study of an iPad application could be funded by the company who made the application. Neutral sources of funding, such as the National Institutes of Health, the National Science Foundation, or the Autism Science Foundation are good examples of reputable funding sources.

In sum, with numerous products on the market for use with individuals with ASD, it is important to take a planful approach when considering the appropriateness of these products for a particular individual. If a child shows an interest in a type of technology, it is important to examine whether it will create or inhibit social opportunities. Moreover, it is essential to become adept at distinguishing between good science and marketing ploys.

Joshua John Diehl, PhD, is the William J. Shaw Assistant Professor of Psychology at the University of Notre Dame.

If you have any questions, feel free to contact Dr. Diehl at fun.lab@nd.edu, 574-631-5729, or visit our website at www.funlab.nd.edu. You can also follow us on Twitter at @ND_FUN_Lab or #funlab.

Letter to the Editor

Dear Ira, David and Members of the Boards of Mental Health News Education, Inc. and Autism Spectrum News,

It was truly a great honor to be the first recipient of your first "Beacon of Hope in Advocacy and Philanthropy" award at the *Autism Spectrum News* First Annual Leadership Awards Reception on November 6, 2013. To be surrounded by a roster of the most distinguished colleagues and friends working today in the field of Autism as professionals, leaders and devoted supporters was humbling, and to receive a Leadership Award with my dear friend Dr. Charles Cartwright was an awesome enhancement of this tribute.

Since its inception, *Autism Spectrum News* has lived up to its mission of providing its readership with a trusted source of science-based Autism education, information, advocacy and community resources. The donations received from the Leadership Awards Reception will enable this exemplary publication to expand its reach so that more people within the Autism community and those who would like to learn more about Autism can now benefit from the wealth of top-notch information this needed publication provides.

I encourage all of you to continue to support *Autism Spectrum News* by writing articles, sharing the publication with family, friends and colleagues and if you are able to, sponsoring the publication with an ad or donation. There are so few publi-

Linda Walder Fiddle, Esq.

cations that serve the needs of the Autism community, and that provide up-to-the minute stories and resources to the public and it is vital that we support the dissemination of science-based information so that progress and awareness can flourish.

My best wishes and again heartfelt thanks to all of you for this wonderful recognition.

Sincerely,

Linda Walder Fiddle
Founder and Executive Director
The Daniel Jordan Fiddle Foundation

Eyes from page 6

This decline in attention to others' eyes was somewhat surprising to the researchers. In opposition to a long-standing theory in the field—that social behaviors are entirely absent in children with autism—these results suggest that social engagement skills are intact shortly after birth in children with autism. If clinicians can identify this sort of marker for autism in a young infant, interventions may be better able to keep the child's social development on track.

"This insight, the preservation of some early eye-looking, is important," explained Jones. "In the future, if we were able to use similar technologies to identify early signs of social disability, we could then consider interventions to build on that early eye-looking and help reduce some of the associated disabilities that often accompany autism."

The next step for Jones and Klin is to translate this finding into a viable tool for use in the clinic. With support from the NIH Autism Centers of Excellence program, the research team has already started to extend this research by enrolling many more babies and their families into related long-term studies. They also plan to examine additional markers for autism in infancy in order to give clinicians more tools for the early identification and treatment of autism.

References

Jones W, Klin A. Attention to eyes is present but in decline in 2-6-month-old infants later diagnosed with autism. *Nature*, Nov. 6, 2013.

Grant: R01MH083727

About the National Institute of Mental Health (NIMH)

The mission of the NIMH is to transform the understanding and treatment of mental illnesses through basic and clinical research, paving the way for prevention, recovery and cure. For more information, visit the NIMH website www.nimh.nih.gov.

About the National Institutes of Health (NIH)

NIH, the nation's medical research agency, includes 27 Institutes and Centers and is a component of the U.S. Department of Health and Human Services. NIH is the primary federal agency conducting and supporting basic, clinical, and translational medical research, and is investigating the causes, treatments, and cures for both common and rare diseases. For more information about NIH and its programs, visit the NIH website www.nih.gov.

Schedule from page 24

It helps me and my family every day - I want it to help yours too!

Since Jan uses his app, he does not get angry when little problems arise, because he can concentrate on his tasks. Now he knows exactly what is expected of him. Because he knows exactly how much time is remaining for each activity, he does not get as many panic attacks as before. He gets on his bike and goes to school relaxed.

For more information, please visit www.autiplan.com.

Inclusive from page 1

Measuring Progress vs. Process

One of the problems districts face in implementing and evaluating inclusion is the ambiguity of terms like "Least Restrictive Environment" and "maximum extent appropriate," both of which are intentionally ambiguous in order to accommodate the varied and individual needs of the students to which they refer. The individualized nature of special education and the necessary ambiguity of the terms that describe it, however, have made it difficult for districts to evaluate their own success in educating students with special needs and in implementing a wide-reaching model of inclusion. It is not a one-size-fits-all solution.

The manner in which districts evaluate their inclusive practices (eric.ed.gov/?id=ED185767) is driven by federal IDEA requirements, and is significantly lacking. Metrics focus on the percentage of students served in each "environment," and the amount of time students with IEP's are spending in general education classrooms. Specific attention is also paid to how IEP goals are written (e.g., whether they are measurable and standards-driven), without addressing whether or not these goals are actually being met. So while these metrics focus on the "process" of including students, they do not tell us anything about whether students are making meaningful progress in these settings.

The Role of Technology

Technology offers several promising avenues for addressing some of the common

Jamie C. Pagliaro

challenges associated with developing an inclusive education system. It is important that leaders carefully consider technology options, and develop thoughtful plans for introducing them to staff.

There are a number of cost-effective and multi-modal formats for providing on-the-job training and follow-up coaching after a traditional professional development session. Use of live and recorded webinars, eLearning systems, video-modeling and remote observation via web-cam or recorded video present a variety of ways to "scale" the dissemination of effective practices, and strengthen fidelity of implementation in the classroom.

Incorporating online meetings into district practices, much like other industries have been doing for years now, presents another opportunity for more frequent collaboration. In large districts, this format allows expert staff to meet more frequently with teachers dispersed across large geographic areas, and be more responsive to requests for support. In smaller and rural districts, this format can be used to encourage isolated special educators to interact with their colleagues in neighboring schools or districts, as well as access remote consultants. Districts should also consider online lesson planning and data management tools that allow for student information sharing amongst staff members, thus allowing asynchronous review of goals, intervention strategies, progress notes and data.

Finally, in addition to the required IDEA reports on LRE, districts must begin adopting standardized practices for tracking progress with respect to IEP goals. Ideally, every teacher, principal and district leader should be just as familiar with how the district is tracking against IEP goals as they are with standardized test scores. This metric has the potential to present a clearer picture of progress across students, and to facilitate more critical evaluation of inclusion models. With the proliferation of online and mobile-friendly electronic data management tools, districts should have no problem selecting a tool or set of tools that help them capture and analyze these data at each level of the school system.

Conclusion

Making a true commitment to inclusion will require districts to re-envision how they train staff members, ensure ongoing collaboration, and measure student success. In an educational culture that increasingly relies upon data as the evaluative measure for making decisions about everything from policy to pedagogy, it has never been more crucial that meaningful methods for teaching and quality measures for evaluating the progress of special education students are in place. Technology can play a key role in facilitating reform initiatives, but districts must pay careful attention to how these technologies are rolled out, and should plan for ongoing training and support of staff members and other stakeholders - including parents - to see them successfully adopted and their benefits fully realized.

This article originally appeared in Issue 7 of Education Magazine - https://itunes.apple.com/us/app/education-magazine-educational/id593725339?mt=8.

Jamie Pagliaro is Chief Learning Officer and part of the founding management team of Rethink, a NYC-based educational technology company with a focus on inclusion. Previously, Mr. Pagliaro was Executive Director of the NY Center for Autism Charter School, a program that has received national recognition from both the media and professional publications as a model for children with autism in the public school system.

To learn more about Rethink, please visit www.rethinkfirst.com or email info@rethinkfirst.com.

Brain from page 4

ANK2, CHD8, CUL3, DYRK1A, GRIN2B, KATNAL2, POGZ, SCN2A and TBR1.

State and his colleagues created a series of networks with each of the seed genes at the center, connected to other genes that are the most similar with respect to the timing and location of their expression in the brain.

Of these networks, the researchers focused on the ones that happen to be enriched with an independent set of 122 'probable' autism genes, defined as those in which one person from the exome studies carries a loss-of-function mutation.

Despite the diverse biological roles of the seed genes, the researchers found them to be surprisingly convergent, meaning that many of the genes are expressed at the same time and place.

The networks that include a disproportionately high number of autism genes tend to be expressed during mid-fetal development (10 to 24 weeks after conception) in the prefrontal cortex. What's more, they are brimming with genes related to glutamate neurons in layers 5 and 6, the deepest layers of cortex.

"We were really amazed at how strong the evidence was for this initial set of genes," State says. "We thought maybe we'd need to start with 50 or 100 genes before we would see an identifiable pattern."

State is careful not to overstate the results, however. As more autism genes are added into the analyses, many other convergence points are bound to pop up, he says. "This is not a unifying theory of autism."

Overall, his results are similar to what Zoltán Molnár and his colleagues reported from mouse brains earlier this year[3].

"Looking at how co-changing genes form a network is a very powerful approach," says Molnár, professor of developmental neurobiology at the University of Oxford in the U.K., who was not involved in the new studies.

Mixed Modules

In the second study, Geschwind and his colleagues first used BrainSpan to track the expression of 15,585 genes — essentially every protein-coding gene expressed in the cortex — across early development, from 8 weeks after conception to 1 year of age.

From these data, the researchers identified clusters, or 'modules,' of genes whose expression tends to be synchronized, turning on and off together across early development. Genes within each module have similar functions. Genes in modules 2 and 3, for example, are primarily involved in the transcription of DNA into RNA, whereas those in modules 13, 16 and 17 are involved in synapse function.

Several of these modules turn out to be enriched in autism genes. For example, the researchers showed that a set of 113 genes implicated by whole-exome sequencing studies of autism are significantly overrepresented in just two modules: 52 of the genes are enriched in module 2 and 61 genes in module 3.

In contrast, a set of 155 genes that the researchers identified from SFARI Gene are overrepresented in modules 13, 16 and 17, the study found. (SFARI Gene is a curated database of autism candidate genes sponsored by the Simons Foundation, SFARI.org's parent organization.) Another set of more than 400 genes identified in a previous study of postmortem autism brains also turns up in these three modules.

The researchers also found that FMRP, the protein disrupted in the autism-related disorder fragile X syndrome, regulates autism genes in modules 2, 16 and 17. This fits with an earlier study showing that many of FMRP's targets are hit by spontaneous mutations in children with autism, Geschwind notes.

To confirm that these network associations are autism-specific, the researchers compared autism genes with those involved in intellectual disability, which occurs in about one-third of individuals with autism. They found that a set of 401 intellectual disability genes is not enriched in any of the modules.

This comparison shows the importance and specificity of the autism gene convergence, Allman says. "It's a real strength of the study."

The researchers all agree that these network analyses are bound to be important resources for the field at large.

If a scientist is interested in making a mouse model of a particular autism gene, for example, he or she could refer to the networks to choose the period of brain development and the brain regions to focus on. Geschwind's team has created an interactive network browser that is freely available on his laboratory website at http://geschwindlab.neurology.ucla.edu/sites/all/files/networkplot/ParikshakDevelopmentalCortexNetwork.html.

Gene networks are ultimately limited, however, by the postmortem data used to create them, which were heavily concentrated on the cortex. The same types of analyses could be done on other brain areas, such as the cerebellum, and other organ systems, such as the gut, placenta and immune system.

"Autism is an extremely complex disease where the environment is playing on an unfolding genetic program," Molnár says. "We shouldn't ignore some of the systems which might feed into this."

News and Opinion articles on SFARI.org are editorially independent of the Simons Foundation. This article was originally published on SFARI.org and is reprinted with permission. You may view the original article, published 21 November 2013, at sfari.org/news-and-opinion/news/2013/studies-map-autism-gene-expression-across-brain-development.

References

1: Willsey A.J. et al. Cell Epub ahead of print (2013) Abstract - dx.doi.org/10.1016/j.cell.2013.10.020

2: Parikshak N.N. et al. Cell Epub ahead of print (2013) Abstract - dx.doi.org/10.1016/j.cell.2013.10.031

3: Hoerder-Suabedissen A. et al. Proc. Natl. Acad. Sci. U.SA 110, 3555-3560 (2013) PubMed - www.ncbi.nlm.nih.gov/pubmed/23401504

The Talk from page 19

And then, all at once, the balloon deflated.

It was a Sunday morning in late September—the day after my birthday. I was fuzzily turning pancakes on the griddle while Jack perched at the counter flicking the top to the syrup open and closed and open and closed. I was just about to tell him to stop doing that, *it's gross to put your hands all over the lid*, when he asked, "Why was I born with autism?"

Quickly, my husband Joe and I *shushed* the other four and motioned for quiet, because both Joe and I knew our time with his open mind was short, that we had just a precious few moments before the steel trap in his brain snapped shut and moved on to how old Rosa Parks was when she died.

"Well, Jack, it's a part of you, just like your eyes are blue and you have big feet."

"Do all people with blue eyes have it?"

"No, it's not really about your eyes. It's like how you learn things."

And then, in rapid fire, these questions:

- Do grown-ups have it?
- Who else has it?
- Will I always have autism?
- Where did I get it?

Standing before Jack in our kitchen I briefly wished we were having the Sex Talk instead—I longed for the concreteness of fallopian tubes and ovaries and *this is how babies are made*.

I mean, how I tell my nine-year old that I love his autism but I also hate it and it's beautiful but sometimes it's so very, very ugly.

How do I tell him there are days I literally want to pull my hair out by the handfuls and run into the street screaming *just measure the effing polygon so we can be done with homework*; that time and time again I am brought to my knees with frustration, with heartache, with fear.

Or how anxiety—a sneaky sidekick to his Autism Spectrum Disorder—came in one February like a thief in the night, threatening to steal his joy, his happiness, the very smile on his face. And how the teeny-tiny white pill he swallows before bed keeps the thief at bay, keeps the occasional giggle in his voice.

How his father and I are constantly sifting through the flood of information and advice about hyperbaric chambers and gluten-free pretzels and advanced behavior therapy; sifting and sorting to concentrate on the brown-haired the boy beneath the diagnosis.

But that I can't imagine him without it, without the beauty and wonder and color it adds to our world and our family.

That Sunday night I knelt next to his bed, where he was sleeping with beloved Bunny on the pillow. His weighted blanket was pulled to his ears, his blue rimmed glasses placed carefully on the shelf above him. In the quiet room, I started to whisper. I said something like this:

Jack, your autism is great. It is not something to be embarrassed about or want to change about yourself. I love it. I mean, we all love it. It's so interesting the way you see the world. I can't wait to know more about it from you. I love you no matter what, I hope you know that.

But we weren't done yet.

Two weeks later we were having dinner at Shorty's, our local Mexican restaurant. Our meals had just arrived, and in the midst of napkins and salsa and tipping cups, a robotic voice.

"I don't want this autism anymore. I don't want it in me."

I just didn't even know what to say. Sitting in a booth at a Mexican restaurant and hearing my son say he wants to rid himself of something that is so fundamentally his, well, it broke my heart open wide.

As it turns out, we didn't have to say anything. His ten-year old brother did it for us.

Joey turned to his younger brother, and with a mouthful of buffalo chicken burrito he'd ordered off the adult menu, he told him, "Jack. I think you're better with it."

"Yeah," Jack said thoughtfully, his own mouth full of corn dog. "Maybe." He glanced over at Joey, and behind the thick lenses of his glasses I glimpsed the smallest spark in his blue eyes.

That night, I knelt next to his bed once again and whispered to my sleeping boy:

You are better with it.

I thought for a second more, and whispered:

We are better with it.

I rose up from the side of the bed and turned to leave, and on my way out of the room I saw Joey's book about the human anatomy. And it occurred to me that someday, we're going to have to tell Jack about sex, and trying to have the Sex Talk with someone who has autism, well, that could be a whole new level.

I think I'll leave that one up to Joe.

"What Color Is Monday?" is available on Amazon.com and BarnesandNoble.com. You can also follow Carrie on her weekly blog: www.WhatColorIsMonday.com and Facebook.com/WhatColorIsMonday.

YAI Mourns the Loss of Thomas Dern

The YAI Network

Thomas A. Dern, the Chief Operating Officer of YAI, a New York City-based nonprofit organization, passed away on Monday, December 9, at his home in Baldwin, NY.

Mr. Dern, who oversaw one the largest systems of group residences for people with developmental disabilities in New York State, dedicated his more than 35-year-career to promoting the rights and abilities of individuals with disabilities, such as autism, Down syndrome and other intellectual disabilities.

"Tom was a cherished colleague and formative leader whose contributions to the agency and the field are hard to overstate," said Stephen E. Freeman, YAI's CEO. "There will be a time for tributes and remembrances for a man who made a remarkable difference in the lives of many, many families and was a passionate advocate for people with disabilities. But right now we are deeply shaken and saddened by the loss of our friend. Our hearts are with Tom's wife Patty, his son Marc, and the entire Dern family."

Mr. Dern joined YAI as a counselor in the agency's Astoria Residence, which was the second community-based residence for people with developmental disabilities to open in New York State.

Mr. Dern's served as Associate Executive Director of the YAI before being promoted to Chief Operating Officer in 2009. He oversaw more than 100 YAI residential programs, as well as the Rockland County Association for Learning Disabilities (RCALD), and the National Institute for People with Disabilities of New Jersey (NIPD/NJ). RCALD and NIPD/NJ are YAI network members.

Thomas A. Dern

A graduate of St. John's University, Mr. Dern earned his Master's of Social Work from Hunter College.

Recognized as an expert in the field, Mr. Dern held a variety of leadership positions in the field and is a member of numerous professional associations. He was a Fellow of the American Association on Intellectual and Developmental Disabilities. He served as chairman of the InterAgency Council's of Mental Retardation and Developmental Disabilities Residential Committee. He also helped prepare a future generation of social workers by mentoring staff, and by teaching at several colleges, including Hunter and Adelphi colleges, St. John's University and Long Island University.

Twitter from page 16

his/her social skills. Just as direct instruction is useful in the classroom, we have to be teachers for our children and use the most direct, meaningful speech possible when conveying concerns.

This article was originally published in the fall 2013 issue of the Asperger and High Functioning Autism Association's (AHA) print publication, On The Spectrum.

Beth Yurman, PsyD, a Licensed Psychologist, and a certified school psychologist in Connecticut, specializes in cognitive-behavioral therapies (CBT) and related interventions, to treat anxiety and mood disorders in adolescents and adults with extensive background and expertise within the field of ASDs. Her private practice is in Manhattan and Brooklyn, NY. For more information, please contact Beth at beth.yurman@gmail.com.

Self-Expression from page 26

of the semester, their iMovie, captured the sights and sounds of Chinatown and was enjoyed by all. Another young man with a passion for music and coffee, wrote a song about coffee, used the Garage Band app to create and record the music instrument by instrument and further incorporated the song into a slide presentation using the Keynote app. Technology not only facilitated his ability to express his passions, but also empowered him to share those passions with others. In the past, a young man initiated an animation project by drawing cartoons on paper. He was then provided a Wacom Bamboo tablet, a sophisticated, touch-sensitive device that works with imaging software such as Photoshop. When mobile technologies arrived on the scene, the story was transferred onto an iPad where an animation app totally revolutionized the project. In fact, the characters in the story had then morphed from superheroes into a self-portrait. Talk about self-expression! The Keynote app was also used by young woman to design a brochure describing her ideal workplace-a day care center. Another young woman, who attends an AHRC New York City Career and Community Studies Program located in a local community college, also participates in the Pace program. She has a passion for self-advocacy and her current iMovie is a face-to-face, sit-down talk with her audience. She encourages her audience not to be defined by their disability and also recites a poem she wrote expressing her thoughts on what being "normal" is all about. Additional digital stories include short biographies that showcase talents such as expressing a love for show tunes (and singing a few), or drawing and displaying sketches.

We all have "stories" to tell. Through the AHRC New York City and Pace University Service-Learning partnership, we anticipate more individuals on the autism spectrum will have the opportunity to tell their stories in the coming years.

AHRC's overall commitment to technology is evident by the computer labs, laptops, Smart boards, large flat-screen TVs, and both low-tech and high-tech communication devices used daily in various environments for diverse purposes by individuals on the autism spectrum as well as individuals with other intellectual and developmental disabilities. Snoezelen rooms allow individuals to experience a relaxing, multi-sensory environment. Nintendo Wii, Wii fit, Exer-gaming equipment and fitness bikes permit users to have fun while keeping fit. GPS technology has been used by many individuals to assist them in becoming "travel trained," a very empowering achievement and a skill that increases community success and social independence. Mobile technologies, particularly iPads, are extremely popular and the ever-expanding universe of apps allows individuals a means by which to express their unique interests as well as meet their particular needs.

Real Person from page 8

in the spring of 2012, in Queens and the Bronx. YAI is expanding the program to Long Island, with evaluations available in Mineola and Brentwood.

Evaluating and then training an individual with autism or another developmental disability to utilize a communication system is life-changing; not only for the person, but just as much for his or her family, peers, and staff.

Before Jerry or any individual receives his or her device, I send home an eight-page questionnaire for the family to fill out. This entails providing names of all family members, including close cousins, aunts and uncles, pictures of family members, names of pets, likes and dislikes, recent vacations and outings. I program this specific information into the device – so that the device is tailored to the individual.

In addition to conducting comprehensive evaluations for individuals of all ages at the AAC Center, we also provide therapy and train new users, their family members, caregivers, staff and educators on how to utilize devices or communications systems. We program devices which some individuals may already own, including iPads, PC tablets, speech applications, etc.

We focus on a person's needs, wants and beyond. In Jerry's case, he no longer has to wait to be asked, "What would you like for a snack?" and await choices or respond just to yes-no questions. Having received his own device in the fall, he now proudly initiates conversation and comments on a variety of topics throughout the day.

Within a day of receiving training on his Nova Chat device, Jerry was in his day program editing his communication system. I observed him photographing different staff members so that he could create a button for each person, enabling him to say good morning to a person by name, or to ask to speak or see a staff member.

He displays total ease with typing and accessing different keys and pages, something you might expect after a person has the device for a year. In fact, he often tells me about certain upcoming events of which I am not aware. For instance, during a previous session, he was able to tell me that a new movie was coming out in theaters, and proceeded to provide me with the exact date of its debut. He can now tell me which volunteer site he attended that day, what his job responsibilities were, and how the day went. Before the acquisition of his device, I would have to ask numerous yes/no questions about his day, and Jerry would only be able to respond to my questions in one word answers.

I'm working with Jerry to use more complex sentence structures. As I show him a new page or key, he will grab hold of my finger. It helps him with motor memory and perhaps allows him to focus on new information. Since obtaining the device, we can now focus more on social skills, like meeting a new person or participating in and maintaining a conversation, as he previously did not have a consistent, functional means of communication.

"He's very enthused about his device and wants to let you know what's inside of him," said Petal Morris, Supervisor of YAI's Kew Gardens Day Services. "He's a new person."

"He's so much more independent with the device," said Denise Rutherford-Gill, another Supervisor at the program. "Before he started using the device, he would charge into my office and I would have to stop what I was doing. Now he comes in, and if I'm on the phone, he waits. He's saying a lot more than 'Hello.' Just by pausing, and recognizing that I'm busy, he's saying, 'I want to have a conversation with you.'"

Denise admits she never imagined that a communication device could help an individual develop social skills. "My focus has always been to help them to try and understand. But look at [Jerry]. It's the real person – who has been trapped inside – coming out."

I am constantly inspired by the individuals I work with at the AAC Center. Whether it's an individual using his communication system to tell his mother that for the first time that he or she loves her, or an individual finally having the opportunity to express his dream to open his own business, the individuals here at the YAI AAC Center are using their newly acquired voices to express themselves in their own unique ways. With a voice, the individuals we support are now able to develop relationships and friendships, build their social skills, and in some cases, obtain employment. Their lives are changed forever. And through working with them, so is mine.

Maegan Meneses, MA, CCC-SLP, is a Speech Language Pathologist at the YAI Center for Specialty Therapy's Augmentative and Alternative Communication Center. For more information about the Augmentative & Alternative Communication Center or other services, call YAI LINK at 212-273-6182.

Psychotherapy from page 9

therapy, computer-assisted therapy, or internet-mediated therapy. The most widely used format entails conducting sessions through live video messaging (e.g., Skype), but email exchanges, online chatting, telephone sessions, and text messages are also sometimes encompassed in teletherapy.

The practice of teletherapy within the scope of its potential reach is still in its infancy, yet psychology researchers are scrambling to gather clear information about its feasibility and effectiveness. Most studies have pointed to similar client success rates between in-person and teletherapy in terms of goal attainment, satisfaction (with the exception of occasional technical frustrations), and client-therapist relationship (Backhaus et al., 2012). Exceptions have primarily centered around less success in teletherapy with a group of clients (Kallay & Michlea, 2010) and quicker success in teletherapy with individuals diagnosed with anxiety disorders (DeAngelis, 2012). When it comes to children and adolescents, their universal engagement with technological tools may actually enhance the appeal of participation in therapy. Furthermore, proponents have highlighted opportunities for accessing therapists, particularly within specialty areas such as ASD, whom individuals would normally be deterred from contacting due to geographical constraints. Indeed, research has consistently demonstrated that such connections can be facilitated by teletherapy arrangements, as can greater choice in mental health providers overall (Herbert et al., 2012).

Teletherapy and ASD in Action

Within the context of our practice at *ASPIRE Center*, we have found substantial benefit in the opportunity to provide services to clients who may be reluctant to engage in face-to-face sessions or are unable to find similar specialty services in their area. For example, Dr. Nichols has a specialty practice working with females with ASD. As such, she is currently seeing four women for individual therapy via the computer who live in different states. For two of these women, there are no local providers who have experience treating adults with ASD, let alone who understand the nature of ASD in females. Overall, the experience of participating in teletherapy has been highly positive for Dr. Nichols, and by feedback, for her clients. The anxiety one woman feels while outside of her apartment can create a heightened state of arousal and discomfort that lasts for hours. Being able to participate in therapy from home enables her to be more focused and engaged in the therapeutic process, even when discussing the goal of leaving her apartment. Most therapeutic activities can be modified for presentation via computer (e.g., materials emailed ahead of time), and for some purposes, the teletherapy format is most beneficial (e.g., being able to see a room when a therapy goal is directly related to that room – organization, sleep hygiene).

At the same time, our firsthand experience, in combination with concerns that have been raised among colleagues and regulatory agencies, underscores the inherent dilemmas associated with reliance upon technology during therapeutic interventions. Challenges Dr. Nichols has experienced include losing a connection during a particularly salient moment in therapy, and encouraging her clients to be able to see the virtual "therapy room" as the same safe place for sharing intense emotions and experiences as during an in-person session. Unexpected interruptions can occur (e.g., a client's cat knocking over their laptop), as can the potential for therapy to be perceived as less serious (e.g., a client is highly anxious and avoidant when particular topics are raised).

In the interest of providing ethical and appropriate services, Dr. Nichols has had to seek licensure in each state in which her clients reside, including having had to fly to one state in order to complete an in-person jurisprudence examination. She has been fortunate in that three of the four women visited New York for consultation or an assessment prior to starting teletherapy services. However the current status of state licensure regulations poses a significant barrier to families and individuals who desire to receive services from a practitioner whose home state is different than theirs. Again, this directly affects individuals for whom services from a specialist are most appropriate, or who live in rural areas. Take for example in the medical field, a patient who has a highly rare form of cancer and needs to see a specialist oncologist in Oregon despite their living in Florida. Dr. Nichols is currently licensed in NY, CO, MO, and IA, each of which have their own fees, requirements for licensure, continuing professional education, etc. It is unfortunately not feasible for a single clinician to become licensed in every state within which potential clients seek therapy.

As a culmination of the aforementioned research findings, practical experiences, and general considerations, we hope to equip interested parents and teletherapy-seekers with tools to ensure a comfortable and constructive experience. When beginning a relationship with a therapist who provides teletherapy services, it is sometimes helpful to hold an initial in-person meeting when plausible (Maheu, 2013). More importantly, however, a well-matched therapist should be identified through careful assessment of proficiency in techniques specific to both psychotherapy with individuals on the autism spectrum and exclusive to teletherapy. Policies related to payment, cancellations, interruptions in internet connection, and contact between sessions should be clearly outlined.

Concerns regarding privacy should be carefully considered, foremost in terms of security breach risks associated with general internet use. Programs have been developed explicitly for facilitating teletherapy, and that are HIPAA compliant, but confidentiality must be directly assessed. In the context of broader options for therapy setting, it is essential to identify a computer-accessible location that is free from distraction. Parents should negotiate an arrangement that includes a balance of privacy and monitoring based on therapist recommendations. Furthermore, the sensitive and stimulating process of psychotherapy may occasionally trigger emotional or behavioral incidents that, under traditional circumstances, would be managed by the therapist. In the case of teletherapy, proactive planning is necessary and may reduce emergency occurrences and severity.

Psychotherapy, whether conducted in a traditional clinical setting or utilizing the expanding range of technological tools, often provides monumental benefits in the growth, adjustment, and well being of individuals on the autism spectrum (Gaus, 2011; Scarpa & Reyes, 2011; Scarpa, White, & Attwood, 2013; Sze & Wood, 2007; Wood et al., 2008). The impending establishment of clear practice guidelines, privacy safeguards, and evidence-based interventions in teletherapy promises to allow wider psychotherapy access in combination with individualization of treatment. Awareness of this therapeutic approach, especially in its potentially unique appeal to children and adults with social learning concerns, may be influential in paving the way for future development and success.

Alyson H. Sheehan, PhD, is a Post-Doctoral Fellow and Shana Nichols, PhD, is the Director and Licensed Psychologist at ASPIRE Center for Learning and Development.

ASPIRE Center for Learning and Development is a multidisciplinary practice in Melville, NY that specializes in assessment, consultation, and treatment for Autism Spectrum Disorder, disruptive behavior disorders, and other social learning difficulties. Detailed information can be found on our website at www.aspirecenterforlearning.com, by calling (631) 923-0923, or by sending an email to aspirecenterforlearning@gmail.com.

iPads from page 6

Many of the iPads were donated to adults on the spectrum. iPads have been found to improve the vocational skills of individuals with autism providing them with more job opportunities that can be so difficult to find. "The iPad has given my daughter a voice for the first time in 27 years," said the father of an adult with autism. "My daughter never had a way to communicate until she was blessed with the donation of the iPad. I remember her face the first time she learned to use the iPad to communicate. She pushed a picture of Lion King the Movie on her iPad. I then replied, 'Okay you want to watch Lion King.' Nataysha stopped in her tracks and had a look on her face, as if to say 'finally, someone understands me.' Normally we would have a meltdown for hours while I played a guessing game of what she wanted. This is one example of how the iPad has changed not only my daughter's life, but my whole family's life."

As was the case last year, approximately a quarter of the recipients were teachers working in classrooms with individuals on the spectrum. One teacher last year reported the strides her class had made as a result of the addition of the iPad to her classroom. "My class and I use the iPad every day," she said. "I have seen improvement in communication skills for my low functioning students. My students have also learned math skills, sight words, and how to read using this tool. My student with severe autism has started communicating more because of apps that I have downloaded. It has been a true blessing."

Scientific Background

A study earlier this year supported by a grant from Autism Speaks, conducted by a research team that included investigators at University of California, Los Angeles, Vanderbilt University and the Kennedy Krieger Institute, tested a developmentally-based, behavioral intervention for teaching spoken language using speech generating devices (SGD), including iPads, in addition to spoken language. The study found that minimally verbal schoolchildren with autism gained spoken language faster when play-based therapy included speech-generating devices such as iPads.

This study of 62 children seen over a nine-month period found that using the speech-generating device together with spoken language yielded significantly greater improvement in spoken language in comparison to the same intervention without access to the SGD.

"Many children with autism use augmentative communication devices," said Lauren Elder, Ph.D., Autism Speaks assistant director of dissemination science. "This study showed that these devices can help children with autism develop spoken language, which is often the most pressing concern for parents." The study also added to recent research suggesting that many nonverbal children with autism can and do develop spoken language, Dr. Elder adds. "It also gives therapists an evidence-based treatment technique they can use to help these children."

Building on the success of that pilot study, this November the researchers won a major grant from the National Institutes of Health to conduct a five-year, multisite clinical trial. The NIH grant comes through its Autism Centers of Excellence program, and the researchers include Ann Kaiser of Vanderbilt University, Connie Kasari of UCLA, Cathy Lord of Cornell Weill Medical School and Tris Smith of the University of Rochester.

"Innovative technologies, including iPads and other devices, continue to show promise for non-verbal individuals with ASD," said Alycia Halladay, Autism Speaks senior director for environmental and clinical sciences. "This research study will help document in a scientific study the extent to which this happens."

Autism Speaks has collected a database of hundreds apps that have been recommended to us by families and professionals in the autism community. Visit www.autismspeaks.org/autism-apps to search by age, category, device and ratings.

To stay tuned for future iPad grant announcements, visit the Autism Speaks website www.autismspeaks.org and sign up for the Community Connections newsletter.

Developing from page 12

participant rated themselves as "part of the group." Staff rated the teen in this way as he often paced during discussions. Another teen challenged the thinking of staff by stating, "you call yourself a psychologist don't you know he's autistic and he paces!" Staff indicated that they understood that pacing is something that individuals with ASD engage in; however we wanted him to understand that others would think differently about the behavior. A rich dialogue ensued about perspective taking and how others (i.e. high school classmates and general education teachers) less familiar with the characteristics of ASD would interpret his behavior. These dialogues are intended to provide knowledge, share alternative perspectives and encourage decision making/problem solving in relationship to self and others - not specifically to try to change behavior. Using Symtrend™ facilitated the teens' participation and interest in discussing their and others perspectives. Another example is when teens rated their own individual participation in a group and then had to rate the overall group functioning, by viewing the comparison chart teens were able to "see" that when they as an individual were positively engaged the overall group functioned better.

Stress management, relaxation and resiliency were addressed through HeartMath's emWave Desktop system as well as *The Inside Story* and The Science of Me curriculum. In the Science of Me curriculum participants learn about the parasympathetic and sympathetic branches of the autonomic nervous system and how these systems play a role in overall health and well-being. The regulation of these two branches has been demonstrated to play a direct role in emotional regulation, shifting attention, resiliency, behavioral flexibility and the ability to adapt to effectively to stress and environmental demands (Appelhans, B.M & Luecken, L.J. 2006). Participants learn that, in simple terms, these branches represent the brake and gas pedals of their body and that they can help regulate how much gas or how much braking is needed, which ultimately will assist them in being able to adapt effectively and deal with stress. We also highlight that stress is a part of life and that learning to cope is essential to happiness, ease and well-being.

HeartMath's *Inside Story* curriculum was developed for "typical" teens and adults. They also have other curriculums for preschoolers to adults. Since it was developed for typical learners we modified and supplemented their curriculum. We used these curriculums in conjunction with HeartMath's Desktop system emWave to help individuals with AS and HFA understand how their inner and outer worlds are connected.

HeartMath's Desktop system, emWave, is a stress management tool that utilizes a finger or ear sensor that monitors heart rate (HR) and heart-rate variability (HRV). The sensor collects real time, beat-to-beat HR and HRV. It portrays the HR and HRV in graph form and, as one becomes more proficient, a gaming platform can be utilized. It allows the abstract to become visual. HR and HRV act as an indicator of physiological resilience that allowed our participants to "see" the connection between their thoughts and feelings on their heart. When wearing the sensor and being connected to the emWave, they could see on the desktop monitor how if they were frustrated or stressed they had a jagged heart rhythm and when they were feeling calm or peaceful their heart rhythm was smoother and more like a coherent wave. HRV was displayed in a bar graph indicating "heart coherence" (a term coined by HeartMath). Participants learned a variety of stress management techniques some specific to HeartMath (i.e. Heart Focusing, Neutral and Quick) others not (i.e. mindfulness, progressive muscle relaxation, visualization, etc.) to help them manage their stress and develop resiliency. The emWave allowed them to observe the neurological impact of their thinking, their feelings, their breathing, and their utilization of specific relaxation techniques on their heart. The ultimate goal being to be able to recognize one's triggers of stress, how one's body feels when stressed (i.e. heart racing, tense muscles, etc) and to be able to practice stress management techniques in real time without being "on the emWave."

HeartMath as a stress management tool and Symtrend™ as a data collection and instructional tool were integral to learning. Many of them were able to improve their social competency, self-awareness, stress management and self-reflection and develop increase resiliency. They developed an awareness of themselves and others while improving perspective taking skills. They learned that heart focus is kind, gentle and calm and when in this feeling state they are better regulated and happier. Both of these technology tools proved invaluable in getting participants to "buy in" to their personal growth work and being a part of a group process. As professionals, we have a responsibility to do all that we can to improve the lives of the individuals with autism that we work with. Carefully selected technology can be a promising tool in guiding individuals with HFA and AS to lead lives of resilience and optimism.

For information about Aspire/MGH, please contact dlucci@mgh.harvard.edu, call 617-365-7293 or visit www.mghaspire.org. Apsire was previouly named YouthCare.

For information about Symtrend, Inc., please contact Minna Levine, President at mlevine@symtrend.com and visit www.symtrend.com. For information about HeartMath visit www.heartmath.com and www.heartmath.org.

References

Lucci, D., Levine, M., McLeod D.S., and Challen-Wittmer, K. (2013) Technologies to Support Interventions for Social-Emotional Intelligence, Self-Awareness, Personal Style and Self-Reflection. In K. Boser, M. Goodwin and S. Wayland (Eds.) *Technology Tools for Students with Autism* (pp.201-226). Baltimore, M: Brookes.

Levine, M. (2013) No More Clipboards! Mobile Electronic Solutions for Data Collection, Behavior Analysis, and Self-Management Interventions. In K. Boser, M. Goodwin and S. Wayland (Eds.) *Technology Tools for Students with Autism* (pp.229 - 246). Baltimore, M: Brookes.

Appelhans, B.M., & Luecken, L.J. (2006) Heart rate as an index of regulated emotional responding. *Review of General Psychology, 10(3), 229 – 240.*

Robin's Voice from page 27

to communicate effectively employing the use of signing. Nevertheless, parents must trust their instincts at some juncture, and this was our most significant determination thus far.

We found a speech therapist that created a model that worked for our son. Her name is Dr. Nancy Schwartz, and I say, without exaggeration, she changed our lives. Utilizing a type of Gestalt, she would choose a habit that our son was drawn to, in his case he was mesmerized by Disney videos. She would allow him to watch a segment, and midstream, turn it off. She followed with a simple phrase…"turn it o_?" making the 'ah' sound. Remarkably, within a week our nonverbal child was filling in the blanks, with simple words like "on" and "more."

I am not a Pollyanna, who believes in miracles, or that a few words made our son normal. Yet, we all must have a vision for growth, and are compelled to start somewhere. Nearly twenty years have passed, and I continue to believe that a behavioral approach plays a significant piece in conquering autism. Dr. Schwartz's no nonsense approach is hardly a candidate for a popularity contest. She makes no apologies for her assault on autism, yet often induces results. Dr. Schwartz has treated hundreds of children over the years, and clearly emphasizes that no cases are exactly alike.

She has developed a certain methodology that has gleaned positive results in recent years, specifically stressing that procuring language by creating motivation through relatedness is the essential conduit for successful interaction. Ideally, you don't want one without the other. Dr. Schwartz has enhanced her process to 'humanize' (my word) children on the spectrum. The downside of simply regurgitating words creates a robot or automaton like behavior.

I must admit, that when our boy could not speak, we did not care how we got language. Given our desperation, we were determined that we would 'hone' his social delivery in the future. The years flew by, and our son continued to escalate his level of speech, but the delay remained in social understanding. Ultimately, creating motivation through relatedness was the key.

I reiterate that every case is truly unique. Dr. Schwartz applauds our son's internal motivation. One of his brothers aptly coined the expression "snowflake," describing people affected by autism. No two snowflakes are alike. Nearly twenty years ago, we were advised that our main aspiration should be that he never plateau, an auspicious goal.

However, and this is a huge caveat, when technology becomes a crutch, make it worthwhile. There have been such advancements in assistive technology with regards to hearing impaired individuals. Cochlear implants have altered lives. Facilitated communication, utilizing hand over hand prompts on a keyboard device has faced scrutiny. I cannot comment on the efficacy of this process. Nevertheless, if a behavioral response is elicited from a child who craves playing with his iPad, it can work productively.

I digress from the issue at hand to make a point. When my typical children tell me that they "talked" to someone, I mistakenly interpret that they moved their mouths and held a phone. No, it might actually mean that they talked on Facebook chat, or texted. The art of communication is sorely challenged in this arena. Perhaps it does not truly impact their lives in a negative way, but if an individual with autism clings to the computer or iPad, it just might restrict communication.

The point is that while technology is a powerful force, it is up to individuals who work with the autism community, to be pro-active. As parents, we need to trust our instincts, yet glean from professionals who show data about successes and failures.

My suggestions are practical. Make your own list. It is empowering.

For younger children:

- Research a speech therapist who uses technology as a tool, not a crutch - Repetition and echolalia are part and parcel to many behaviors in autistic children. It further invites children into their own world of inanimate objects, rather than human interaction. Aiding and abetting that powerful isolation is counterproductive to progress.
- Use technology to elicit speech
- Use a behavioral model; make those devices work for your child!
- Collect data
- Visual learning is common for children with autism; designer programs may prove effective by adjusting to your child's needs

For adult children:

- Utilize technology to practice social communication; facial recognition
- Research job opportunities in the technology arena
- Practice interviews
- Utilize the telephone for practicing speaking and listening; oftentimes most difficult without a visual

Finally, be flexible. The world is an ever-changing entity. What worked for your child a year ago, may have changed into a new reality, new motivations required, and hopefully, goals reached, and new vistas ahead.

Robin Hausman Morris is a freelance writer and can be reached at RobinHausmanMorris@gmail.com. Robin is a parent examiner for Examiner.com - www.examiner.com/autism-and-parenting-in-national/robin-hausman-morris.

Classroom from page 29

by AIMS web (www.aimsweb.com) were used before intervention for a baseline; students received an assessment test at the end of each week during intervention. The dependent variable was the total of correct responses to basic math problems answered in one minute. The form of the dependent variable changed only in that the operation of the problems progressed based on student skill mastery level.

Multiple baseline data were collected from AIMS web assessments where students are not permitted to use tools to answer problems. Tools are defined as entering problems into a calculator, manipulative counting items, or a scratch sheet. The application allowed students to focus all of their cognitive skills on building basic computation skills. Each student was timed and each participant's score was recorded as a feature of the app. Another advantage to applications in the classroom is that physical data collection tasks are reduced. The score keeping can be used to motivate students in a competition or just allow them to see their own quantitative progress. The application's interface was minimal, the selections for practice are: addition, subtraction, multiplication, division, addition/subtraction together, multiplication/division together, and all combined.

This study was designed to decrease students' dependency on calculators, hash marks or various other crutches to solve basic single digit math problems. The most current application software in a smart tablet was utilized to determine the effectiveness of visual technology to increase internalization of basic sums, differences, products, and quotients. The four participating students selected were encountering great difficulties accessing the Algebra I subject content due to the accommodations they had developed reliance on throughout elementary and middle school education. Their dependency on counting hash marks and using calculators allowed these students to avoid internalizing the knowledge of addition and multiplication facts. Without the automaticity of recalling these basic facts, these students were lost as they entered secondary education where possession of this knowledge is taken for granted as students engage in more complex math functions.

The treatment probes determined if the intervention had an effect on students' fluency gains. The following chart displays the progress of the participants by comparing the intervention average to the baseline average. The middle column contains the highest score attained by each participant to show the achievement possible perhaps with extended use.

Student 1 began treatment with an average of 25 percent accuracy of multiplication problems answered correctly in one minute and reaching a high score of 65 percent. His overall average was around 60 percent accuracy. Student 2 showed improvement immediately after intervention implementation but maintained an average of 50 percent during intervention. Student 3 nearly doubled his score when treatment was introduced earning a score of 38 percent. His average was 50 percent accuracy overall. Student 4 began baseline with an average of 5 percent. He did triple his average though only reaching 15 percent accuracy during the intervention. He did not demonstrate increased fluency with subtraction through implementation of the intervention and continued to rely on hash marks during probes, significantly impeding internalization of sums and differences. It is thought that the severity of Autism in Student 3 contributed to greater cognitive delays which were not addressed with the specific application at the time of intervention. In conclusion of the evidence presented, incorporating technology-based interventions in the classroom does support students in building skills. The necessity of engagement with technology in real world situation only reinforces the evidence that taking learning out of the textbook will benefit our students long term. Exposing students to various methods of learning aids in the generalization process and creates learners who seek to be engaged in evolutionary progress that informs academic learning.

Elizabeth Perez, MS, is a special education high school teacher for The Association for Metroarea Autistic Children, Inc. For information about the school, visit www.amac.org or call (212) 645-5005.

References

Adiguzal, T., Capraro, R.M., & Willson, V.L. (2011). An Examination of Teacher Acceptance of Handheld Computers. International Journal of Special Education, 26(3), pages not numbered.

Grandin, T. (2006). Perspectives on Education from a Person on the Autism Spectrum. Educational Horizons, 84(4), 229-234.

Ke, Fengfeng (2007). A case study of computer gaming for math: Engaged learning from gameplay? Computers & Education, 51(2008), 1609-1620.

Kauffman, J. M., McGee, K. & Brigham M. (2004). Enabling or Disabling? Observations on Changes in Special Education. Phi Delta Kappan, 85(8), 613-620.

Little, Mary E. (2009). Teaching Mathematics: Issues and solutions. Teaching Exceptional Children Plus, 6(1), 1-14.

Price, A. (2011). Making a Difference with Smart Tablets. Teacher Librarian, 39(1), 31-34.

	Baseline Average	Highest Score	Intervention Average
Student 1	**25%**	**65%**	**60%**
Student 2	**20%**	**50%**	**43%**
Student 3	**20%**	**70%**	**50%**
Student 4	**5%**	**25%**	**15%**

Social from page 22

visual learners. Because of this visual inclination, *video modeling of social skills meets these students where they learn best* (Corbett & Abdullah, 2005).

Levels of Skill Progression

The following levels of skill progression provide an outline for dissection and discussion of the video scenarios that lead to social awareness and integration:

Level 1, build vocabulary - Treat the video footage like a picture book, describing what the children are doing, such as, "The children are standing in a line." Introduce vocabulary words like facial expression, body language, and expected and unexpected behaviors. These words will help cue a child on what to be aware of as they are watching the scene.

Level 2, use vocabulary to introduce choices - As the videos become stories, begin to offer choices that encourage your student to engage in the scenario. Choices build options for those struggling with the knowledge or language to elicit their own response. "When we stand in line, what should we do? (Pause for response.) Should we stand still or push each other? Should we wait our turn or run to the front of the line?"

Level 3, use vocabulary to expose feelings - This level assumes a solid use of basic vocabulary and provides a building block toward the critical social skill of predicting outcomes. At this level, focus on feelings through the video subject's words or body language. Focus on telling the story through emotions. "What would you do if you saw your teacher crossing her arms and clearing her throat? (Pause for response.) "Pay attention" is correct. Do you think your teacher is frustrated or angry? You're right. When someone crosses their arms it means they are upset. Now that you have noticed how your teacher is feeling, how do you think your expected behavior of 'paying attention' will make your teacher feel?"

Level 4, feelings and body language lead to inferences - It is important to discuss contextual cues in the video subjects' body language, behavior and emotions. While this seems similar to Level 3, it is critical to teach and reinforce because so many ASD learners struggle with nonverbal communication cues and making inference. Take the discussion further; "What is the girl in the video doing with her body to show that she is sad?"

Level 5, expand upon choices - Introduce the social nuances that allow one to compare and contrast similar scenarios to determine the most acceptable pragmatic language and behavior in any given situation. Because social awareness is so subjective, this allows the student with whom you're working to make a detailed analysis of the better versus the best outcome. "That boy was yelling in the store because they did not have his favorite ice cream. What is your favorite ice cream? Do you like other kinds of ice cream? What are some other things you could do if the store did not have your favorite flavor?"

Beyond the Basics:
Using a Pre-Made Product

Using a pre-made product like the curriculum from Social Skill Builder provides you with a guide for building your library of videos. I sometimes liken video modeling software available for purchase and other pre-made video sources to the solid basics of a good wardrobe: it has the jeans, the shoes, the socks, the sweaters. Everyday scenarios are already covered, such as standing in line without cutting, talking or pushing, eating quietly and politely in the cafeteria, taking turns on the playground, bully awareness and hundreds of daily, basic scenarios. Buying video modeling software programs or using other pre-made videos for basic social behaviors will save so much effort and time that any initial investment will quickly be surpassed by their intrinsic value. You don't need to reinvent the wheel, but you can build upon what is readily available to get the best possible outcome for your student. You will add to the "wardrobe" by creating custom videos that address your student's specific needs, otherwise known as "do it yourself" (DIY) video modeling.

DIY Video Modeling is
Economical and Feasible

The technology available now is perfect for DIY video modeling, because it is economical, readily available, and easy to use (Alcantara, 1994). It is no longer necessary to rent or purchase complicated AV equipment, because most of us already have mobile phones with cameras or digital cameras, and tablets. Compared to past devices, modern technologies that serve multiple uses can be very economical, plus the technology is convenient and easy to manage. Many great editing programs are also available, to help shorten and customize your videos. One example, iMovie, can also be mastered in no time.

Video Modeling Guidelines

The primary rule of video modeling is to present real people in real scenarios, rather than cartoons or drawn images. It is critical to focus on facial and body expressions to convey both verbal and nonverbal cues and to use same-age peers whenever possible.

When you begin planning your DIY video modeling project, first evaluate your student; what are their challenges and needs? Communication between parents, therapists and teachers is essential to key in to specific behaviors to target together. Each video should focus on one concrete skill. Keep the video very short, no more than 30 seconds. Don't overload the student with too much action or too many choices that will cause them to lose focus. It is important to eliminate even small distractions, such as a t-shirt with words or pictures, and background noises or activity that can cause the student to fixate on something other than the task at hand.

Having the video on a portable device allows you to refer to it during daily situations that arise, and ask the student about what they just watched when they are in the situation themselves. Get the student into the habit of pulling the videos from their memory as a guide to make better social guesses and to make the video learning experience an integrated part of their daily life.

Keep things positive! Show the expected way to do something first, and then encourage the student to predict the positive outcome of a expected behavior with the goal of gradually introducing the consequences of unexpected behavior. Always keep in mind the objective of meeting the students' pragmatic needs and goals.

Maximize Time, Money and Effort

Think about how to maximize every part of your videos to extract the full learning value, as well as the time and money that have been invested. For example, pull a still photo from a video and discuss it with the student. Point out posture, facial expression, eye contact, personal space, etc. You can use a still photo or a small clip from a video to stop the action and break down a skill into smaller steps in order to ensure learning. Break down the lessons into more basic chunks and ultimately build the skills up to the full level.

For portable cuing of social situations, import the video into a mobile phone or tablet and take this cue into the student's own environment. For example, if a student is having trouble waiting in line, play the video with him dissecting the key points and then take the mobile device with you to practice when he is standing in line at school for non-verbal cueing. Further, use the mobile device to eventually video the student himself completing the target behavior.

Taking advantage of the technology that surrounds us will not only engage your student, but make social interaction come alive. Students on the autism spectrum need skill examples to be concrete, and we now have unprecedented capability to make the abstractness of social skills become tangible. When you follow the outlined steps to dissect social videos with your student, they will grow in understanding and confidence to master these elusive skills and continue to progress toward the goal of incorporating social understanding into their natural environment.

Laurie Jacobs, M.A. CCC-SLP, is co-founder of Social Skill Builder, a company launched in 1999 to provide computer-based tools for teaching social skills to children affected by Autism Spectrum Disorder (ASD). Laurie, along with her sister and co-founder Jennifer Jacobs, M.S. CCC-SLP, develops software and social apps for preschool through high school cognitive ages based on the unique needs of the ASD community. Visit www.socialskillbuilder.com for software demos, find the Social Skill Builder App on iTunes, and look for our free instructive online videos at www.youtube.com/socialskillbuilder. Find us on Facebook at www.facebook.com/socialskillbuilders, or email info@socialskillbuilder.com for more information.

References

Chen, S.H. and Bernard-Opitz, V. (1993). Comparison of Personal and Computer-Assisted Instruction for Children with Autism. Mental Retardation, 31(6), 368-376.

Corbett, Blythe A., and Maryam Abdullah. "Video Modeling: Why Does it Work for Children with Autism." Journal of Early and Intensive Behavior Intervention2.1 (2005): 2-8.

D'Ateno, Patricia, Kathleen Mangiapanello, and Bridget Taylor. "Using Video Modeling to Teach Complex Play Sequences to a Preschooler with Autism." Journal of Positive Behavior Interventions. Vol 5.1 (2003): n. page. Web. 28 Jun. 2013.

Nikopoulos, C and Keenan, M. (2006). Video Modeling and Behavior Analysis. 1st. London, Philadelphia: print.

Improvement from page 18

bed-checking hardware and software.

The data from all of these sources are available for real-time analysis and are prepared for formal analysis every two weeks. Some of the databases include business processes as well: if a client has no bowel movement after three days, the program detects and reports that; or if an overnight staff member misses their 15 minute bed-check, a supervisor is automatically and immediately notified by text message alarms.

Organizational Solutions

Whether it's policies or procedures, environment variables or staff support and training, every organization has room for improvement. Strategically selected data sets – when regularly analyzed by a qualified team of clinicians and administrators – provide the information the organization needs to guide continuous improvement in outcomes for clients. The key to organizational data analysis is discovering just the right type of data to take and the best way to report on that data for analysis: too much data and important findings get lost in the static, too little and the data bears no fruit.

Melmark has several organization-wide database applications that track detailed data regarding unusual incidents, Workers' Compensation claims, protective holds and much more. Each database has a front-end program to make data-entry a quicker and easier process than paper and pen, a workflow to ensure the electronic forms are routed to the appropriate employees for review and electronic signatures, output capability for sending the completed reports to governmental agencies, parents and other parties, and reporting capabilities for regular review by the senior clinical team.

When many people think of graphing organizational data, they think numbers like frequency of events or amount of time involved in incidents. While important, the real gold in the data is in mining *actionable information* that guides improvement, and that is found in the details. For example, rather than looking at how many incidents occurred in a particular residence, a well-designed database will show you that behaviors or incidents are more likely to occur in the lower bathroom than the any other room. This is actionable information; a clinician can access that particular location and make physical changes to the environment to reduce the issues and then continually assess the data for trends to ensure the changes are effective. Another example of actionable information is reporting on staff injuries across the organization; trends can be established comparing staff injuries to who they were working with, where they were working and in what activity they were engaged. These trends can be evaluated by the clinical team to identify areas for all-staff training, individual staff that could use retraining or client protocols that could be improved, just to name a few. The possibilities for powerful, actionable data are only inhibited by the amount of data and the quality of the data recorded.

Where to Start

Developing a custom database is often a long and cumbersome task, but as you can see, the benefits are well worth it. While there are innumerable considerations involved in designing a database application from scratch, a few basic guidelines can help you get started.

The first step to designing a database is writing a complete "functional specification" – a report that explains in great detail every field and feature, including automation and business processes (workflows) that you want the program to do. This is the guiding document for the development of the program, so make sure to be as complete as possible.

Once your functional specification is written, you can present it to software development vendors for quote. The ideal candidate for a programming team is one that has not only an exceptional programming resume but one that has at least some members in the education field or who are willing to learn the teaching methodologies your school utilizes. You cannot underestimate the importance of having a team that understands your organization and its procedures in detail.

Finally, an on-site project manager must be selected that has both the technical skills and the academic and clinical skills to guide the team through the project development and implementation phases.

Custom databases and applications provide an organization the tools it needs to make competent, evidence-based decisions for their clients and for the organization, and can save thousands of hours of time filling out forms and reporting on data manually. While no database or computer application will ever replace competent staff, teachers and clinicians, technology, when designed and implemented thoughtfully and pragmatically, should be embraced.

Andrew Shlesinger, MSW, is the Director of Clinical Technology at Melmark. He has been with the organization for over ten years and has extensive experience in database /application programming and academic and clinical treatment of children on the Autism spectrum. He can be reached at ashlesinger@melmarkne.org.

Frank Bird, MEd, BCBA is the Chief Clinical Officer at Melmark. Frank has over 30 years of experience in the field of community-based human service delivery systems. Over his career, he has developed over 50 programs in support of individuals with disabilities. Frank can be reached at FBird@melmarkne.org.

College from page 25

his or her own backpack, binder, school assignments, and after-school schedule? How does the student organize homework and long-term assignments? Does he or she use an electronic planner, iPad, homework pad, or iPhone? It is critical that students take the driver's seat on these tasks that require advance planning, organizational skills, and time management. Practicing these skills during high school can lead to greater success in college.

The commonalities among the above questions are motivation and initiation. Both can increase the chances of success academically, socially, and emotionally, whether going straight to college is the appropriate path after high school, or if it is finding a job and entering the world of work. Many students feel ambivalent about the prospect of college, which is natural and to be expected. Touring campuses, participating in college summer programs, and having a thorough understanding of the accommodations offered and those necessary for academic success can aid students in gaining an understanding of whether or not they are ready for college. Working closely with a student's guidance counselor can be very helpful in determining what options exist and which ones are the best "fit" for the student. Understanding the concept of initiation and self-advocating with professors, disability offices, and various learning specialists will aid a student in reaching his or her fullest potential after high school. Assessing college readiness is not a simple task, but one to consider based on a wide array of factors. Speaking with a child's guidance counselor, teachers, camp counselors, as well as watching him or her interact with their peers may provide valuable information and insight that can assist in this decision-making process.

For more information, please visit www.aaronschool.org or contact Adrienne at anagy@aaronschool.org.

Engaging from page 13

to be the ones that foster expressive communication. The iPad provides an affordable alternative to existing communication devices. Speech generating devices, which are systems used to supplement or replace verbal language for individuals that are nonverbal or minimally verbal, have long been successful in fostering communication in people without verbal language skills. Data from studies with adolescents with intellectual disabilities have also suggested that the use of speech generating device contributes to gains in receptive and expressive communication (Romski & Sevcik, 1997). Now, with the availability of applications or "apps" that imitate those expensive devices, the iPad offers a more accessible, less stigmatizing, cheaper and more user-friendly way to help children with autism to communicate. Although no empirical studies to date have been conducted regarding tablets with speech generating application and the enhancement of expressive language for children with autism, anecdotal data has been promising. With the availability of the iPad, therapists can assess every student on their caseload as a potential candidate for a speech generating device. This accessibility, along with the ease of evaluation has been significant for both therapists and students.

A combination of individual and group instruction is employed in most ACA classrooms. Group instruction has its challenges as maintaining student attention and keeping students actively engaged for the duration of lessons can be a tall order. Using an informal observation tool, school administrators compiled student engagement data in three classrooms. Students were considered "engaged in instruction" if at the end of a 5 second interval, they were looking at the instructionally appropriate place such as the teacher, correct materials or wall marker board. Overall, the data showed a low percentage of students consistently "engaged in instruction." Increased engagement was noted when the teacher was speaking specifically to a student or prompting their attention in some way. The same observation tool was utilized after interactive "white boards" were installed in the same three classrooms. The data showed an overall increase in individual student engagement as well an increase in student sustained engagement (absence of prompting from teacher). Over time, all (23) classrooms had interactive white boards installed. Feedback from teachers has been overwhelmingly positive. They report the ability to create richer lesson plans that incorporate highly motivating visual and auditory components. Often, students who had difficulty with computer or mouse manipulation on a PC, demonstrate adeptness with the interactive "pen" used with the whiteboard. Some teachers noted that students who had difficulty tracking images or words presented on a PC monitor are able to easily do so via the whiteboard. It's important to ensure that the white board is not the only instructional tool used in a lesson, especially for students with significant learning challenges. Overall, white board technology has provided teachers with countless options for creating highly engaging lessons.

The National Autism Center's National Standards Report has cited exercise as an emerging treatment with promising potential for individuals with Autism Spectrum Disorder (ASD). It is well-established that exercise has benefits beyond just an increase in physical activity. Exercise targets various aspects of brain functioning and has broad effects on overall mental health; it has been shown to reduce stress, depressive symptoms, and anxiety. Exercise also provides a boost in learning and memory, as well as increases in immunity and metabolism. Despite the plethora of benefits that physical activity offers it is sometimes difficult to encourage interest in exercise among individuals with ASD, as conventional physical activities are often unappealing.

"Exergaming," a term used for video games that serve as a form of exercise, may help increase physical activity levels in users. These types of gaming devices rely on technology in conjunction with the user's body movements in order to operate. Some popular devices that use this type of interaction have been shown as more physically demanding than conventional sedentary game consoles. While there are inconsistencies in current research regarding how much energy is expended during use of these devices, any amount of physical activity is a step toward a more healthful lifestyle and may act as an appropriate starting point for otherwise sedentary individuals.

The EyePlay is an interactive gaming device offered by EyeClick Ltd. that engages users in a fun, exciting, and innovative way. This highly-advanced video game platform with motion-activated games can be played with users' entire bodies, allowing multiple users to run, jump, twist, and dance using hands and feet to set in motion sounds and colorful graphics. During a two month period, ACA trialed the EyePlay to determine whether students could effectively use the device, and if it could function as an additional tool to increase physical activity. In surveys, staff who worked with students involved in the trial reported that the device was easy to use and accessible to a wide range of students. Initial observations showed that a majority of the students who used the device enjoyed the games and effects, and had fun interacting with the device and with their peers. The EyePlay appeared to be a preferred activity to several students who were able to remain engaged with the device for several minutes. Overall, staff felt the device showed potential for staff-assisted engagement for children with ASD. We look forward to incorporating the potential this device offers into other realms of our students' daily routine.

Amanda Coons, MS, BCBA, is a Behavior Analyst, Rebecca Stanmyer, BS, CCC-SLP, is a Speech Language Pathologist, and Kathleen Marshall, BA, MA, SAS, is Director of Children's Services at the Anderson Center for Autism. For more information, please contact (845) 889-9534 or www.andersoncenterforautism.org.

References

Romski MA, Sevcik RA. (1997) Augmentative and Alternative Communication for Children with Disabilities. Mental Retardation and Developmental Disabilities Research reviews3:363-368

Clinicians from page 23

relationship with the clinician that supported his home-based program. Therefore, based on Ammon's personal strengths and interests, a web-based intervention was designed that:

- Emphasized self-monitoring and self-reporting
- Provided a practical structure for adherence to a daily reporting requirement
- Emphasized daily connectedness with his clinician via web-based email correspondence
- Supported a multi-source feedback system (e.g., Ammon, his mother and father, and the primary clinician), and
- Allowed for a web-based social and technological interface conducive to the promotion of socially significant behavior change

Specifically, the web-based intervention designed for Ammon required him to email his personal scorecard (i.e., the total percentage of household obligations he fulfilled during the course of the day) to his clinician at the close of each day. In turn, he would receive a reply from her with validation and instructive feedback. The personal scorecard appealed to Ammon's established interest in data and connected to his propensity to talk about scores, facts, and figures. The outcome of the intervention was impressive. More to the point, the web-based intervention resulted in the percentage of fulfilled obligations shifting from a low of 31% prior to the introduction of the web-based plan (based on 14 days) to 97% over the most recent seven days of the intervention. In addition to the web-based clinical system motivating and supporting Ammon, it also appreciatively impacted his relationship with his family and resulted in the generation of healthy interactions. Essentially, the program resulted in a pivotal change in Ammon's home circumstances. Moreover, the individualized program was, at once, strength-based and technology enabled.

Mobile Phone Intervention:
A Case Study

In another case study, we used an innovative mobile intervention program model to support a young boy (we will use the pseudonym Piers to refer to him) to address his enervating anxiety around other children. Although Piers valued personal friendships, he was unable to remain in the presence of another child long enough to forge any kind of relationship. Moreover, he resisted joining any of the social skills group meetings facilitated by his clinician. In an effort to address Piers' social anxiety, a mobile phone with a short message service (SMS) component was purchased. It should be noted that Piers had a monsterful interest in both mobile phones and text messaging and had been asking his parents to buy a phone for his personal use. Subsequent to the purchase, Piers' clinician began communicating with him, via text messages, under non-emotional circumstances (i.e., text message rapport building) and Piers quickly became a text-messaging virtuoso. During this phase of the mobile phone intervention, Piers and his clinician developed their own SMS shortcuts. For example, Piers decided that if he sent an instant message consisting of the single word "Orange," then his clinician would allow him to exit an uneasy situation. Once Piers was outfitted with a mobile phone, text messaging capability, a reliable (and honored) system for communicating his needs, and a proven arrangement for exiting uncomfortable situations, he volunteered to join a social skills group for the first time. The intervention resulted in a multitude of desirable outcomes, including:

- Piers' active participation in a social skills group
- Spontaneous communication and contributions within the context of social skills group meetings (e.g., a discussion about pets)
- Contextualized use of text messages to communicate with his clinician
- The ability to exit a social context upon texting the code word "Orange" to his clinician, and
- The ability to return to the group meeting, on his terms, after regulating his heightened emotional state

Essentially, the mobile phone intervention resulted in personal empowerment, self-control, self-efficacy, and self-determination. As clinicians, we put a premium on such outcomes when working with children with an Autism Spectrum Disorder.

Conclusion

We believe that the two case studies presented would have sent B.F. Skinner wandering around the 22.4 acres of Harvard Yard. And during the process, he certainly would have sent us a Snapchat Story about the smart use of technology to support both useful and enjoyable behavior change. In our opinion, the esteemed researchers from Northwestern University's Center for Behavioral Intervention Technologies are in the forefront of creative technology-enabled intervention, and the procedures they have introduced are heraldic of a new way of working with individuals that require behavioral support to facilitate changes in their quality of life. As clinicians, we support the use of technology as a medium for coordinating the delivery of evidence-based practices and are proud to be living and working during this new era of technology-enabled clinicians.

Michael J. Cameron, PhD, BCBA-D is the Chief Clinical Officer for Pacific Child and Family Associates (PCFA). Melissa Cline, MSEd, BCBA is a Clinical Supervisor for Autism Services North (ASN), an affiliate program of PCFA. Rebecca Hise, MS, BCBA is a Clinical Supervisor for Autism Intervention Specialists (AIS), an affiliate program of PCFA. For more information, please visit www.pacificchild.com.

Subscribe to Autism Spectrum News

Yes! **I want to receive each Quarterly Issue by Mail**

- ☐ Student ($20/year) School/Program _____
- ☐ Individual/Family ($40/year)
- ☐ Professionals ($50/year)
- ☐ Small Group - 25 Copies Each Issue ($150/year)
- ☐ Large Group - 50 Copies Each Issue ($300/year)

Name & Title: _____

Address: _____

_____ Zip: _____

Phone: _____ Email: _____

Mail this form with a check made out to:

Mental Health News Education, Inc.
460 Cascade Drive
Effort, PA 18330

To pay by credit card visit:

www.mhnews-autism.org/subscribe.htm

Phone: (508) 877-0970 Email: dminot@mhnews.org

Advertise in Autism Spectrum News

	1 Issue	4 Issues (25% discount!)
☐ Business Card:	N/A	$500
☐ Eighth Page:	$300	$900
☐ Quarter Page:	$500	$1,500
☐ Half Page:	$750	$2,250
☐ Full Page:	$1,000	$3,000

- ☐ Inside Covers & Back Page (please call)
- ☐ Honorary Sponsorship (please call)

Name & Title: _____

Address: _____

_____ Zip: _____

Phone: _____ Email: _____

Mail this form with a check made out to:

Mental Health News Education, Inc.
460 Cascade Drive
Effort, PA 18330

To pay by credit card visit:

www.mhnews-autism.org/advertise.htm

Phone: (508) 877-0970 Email: dminot@mhnews.org

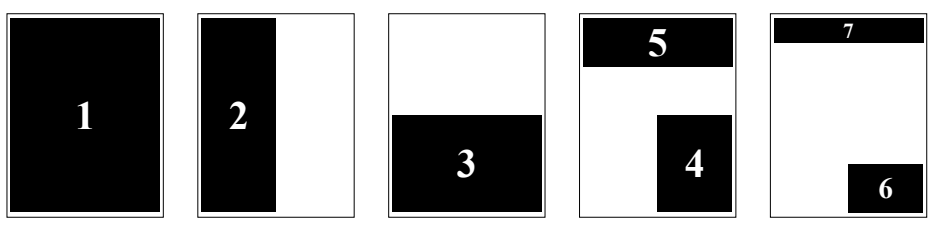
Promote Your Vital Programs, Services, and Events and Reach Over 90,000 Readers in the Autism Community Across the Nation!

Your Advertisement Will Also Run in Color in Our Digital Edition Online!

Deadline Calendar & Ad Size Specifications

Deadline Dates

Spring 2014 Issue - March 5, 2014
Summer 2014 Issue - June 5, 2014
Fall 2014 Issue - September 5, 2014
Winter 2015 Issue - December 5, 2014



Full Page | Half Vertical | Half Horizontal | Quarter V & H | Eighth V & H

Ad Sizes - In Inches

	Width	Height
Full Page (1)	10.4	12.8
Half Vertical (2)	5.1	12.8
Half Horizontal (3)	10.4	6.4
Quarter Vertical (4)	5.1	6.4
Quarter Horizontal (5)	10.4	3.1
Eighth Vertical (6)	5.1	3.1
Eighth Horizontal (7)	10.4	1.5
Business Card (not shown)	5.1	1.5

AUTISM SPECTRUM NEWS™

Your Trusted Source of Science-Based Autism Education, Information, Advocacy, and Community Resources

www.mhnews-autism.org

For Over 5 Years, Families Have Trusted Autism Spectrum News for Answers

What Resources are Available in My Community? • Is This Treatment Safe for My Child?

Where Can I Get Financial Planning Advice? • Where Can I Find Help With IEPs?

What Happens When My Child Grows Up? • What's New in Autism Science?

I Just Want My Child to Have the Best Future Possible....

Subscribe to Autism Spectrum News Today!!

Yes! I Want to Receive Each Quarterly issue by Mail

- ☐ Student ($20/year) School: _____
- ☐ Individual/Family ($40/year)
- ☐ Professionals ($50/year)
- ☐ Small Group - 25 Copies Each Issue ($150/year)
- ☐ Large Group - 50 Copies Each Issue ($300/year)

Name & Title: _____

Address: _____

_____ Zip: _____

Phone: _____ Email: _____

Mail this form with a check made out to:

Mental Health News Education, Inc.
460 Cascade Drive
Effort, PA 18330

To pay by credit card visit:

www.mhnews-autism.org /subscribe.htm

www.mhnews-autism.org
facebook/AutismSpectrumNews
twitter/AutismSpecNews

Autism Spectrum News is a Quarterly Print and Online Publication
Published by Mental Health News Education, Inc., a 501(c)(3) Nonprofit Organization

For information about advertising, subscriptions, or how to submit an article, contact David Minot, Publisher at (508) 877-0970 or dminot@mhnews.org