Technology

Voices

Glancing Backward, Gazing Forward: AT Trends In an Era of Flux

"I must have worn the wrong glasses," Russ Holland remarks. "When I departed the ATIA convention in January my initial reaction was that there weren't a lot of real technology breakthroughs in evidence." Upon further reflection, though, he adds, "there was much to be seen and heard that points the way to the future of assistive technology."

Mr. Holland, co-founder, with his wife, Sue Brown, of Adirondack AccessAbility (http://www.adkaccess.org/) and a former director of the Alliance for Technology Access (ATA), is a 30-year AT veteran and a respected observer of trends in the AT field.

The absence of hot new AT products at the ATIA conference was not new, he concedes. "In fact, we stopped seeing as many of those breakthrough products several years ago and instead are seeing incremental, but important, changes in software and changes in strategies for utilizing that software."

Early on, he recalls, almost all ATIA sessions were presented by vendors.. "There was nothing wrong that that; vendor sessions are useful because no one knows better than vendors how the technology works and

what it's designed to achieve."

Now, however, he adds, many of the ATIA sessions are increasingly devoted to shareable strategies that users devised independent of vendor input. "These were new strategies on how to use technology in unintended ways." This development, he explains, is consistent with the field's roots "when AT was invented in garages often by individuals with disabilities, families or friends."

From those early days through the present – and, Mr. Holland predicts, well into the future – the improvisational instincts bred by those garage-inventor traditions will hold true. "Much of what has been accomplished in the AT field occurs because individuals in the field are creative with whatever technology they have."

Today's ATIA sessions, he continues, "have prepared the field to build on that tradition by developing uses for consumer technology like the iPad and smartphones that benefit children with disabilities and their families." This improvisational approach, he notes, "represents a major change from the period between the advent of versatile consumer technology and the later period when the field's tinkerer roots became somewhat frayed, defined by expensive, dedicated AT products devised by corporations.

"When the field was limited to AT-dedicated devices, users and practitioners were left to take courses on how to use the latest incredibly powerful augmentative communication device, for example. Improvisation was impractical."

At ATIA and other AT conferences, he points out, "vendors continue to tout their equipment, as they should, yet they are very appreciative when users come back to them and say, "We know what your equipment was intended for, but let us tell you what

else we were able to achieve with it."

The most effective vendors, he emphasizes, "work very closely with their customers and freely admit that the feedback they receive is a vital part of their design process." Vendors, he says, "often involve consumers and practitioners in their development teams and focus groups to make sure their preferences and evaluations are noted."

Vendors, practitioners and users all face challenges presented to the field by the need to adapt to accelerating technological change, which necessitates a higher and more intense level of communication between those communities, Mr. Holland explains.

"This change is often jarring," he declares, "but its result is the emergence of several significant trends that are impacting the AT field and will continue to influence the field's decisions in the years to come.

"Thanks to technology, the field is in a constant state of flux. This makes for a challenging but very exciting era, especially, perhaps, for those of us who have been immersed in AT since the dawn of the information age. Despite all we've seen and all the adaptations that have been necessary during the past decades, the best is yet to come."

Russ Holland Speaks

He began as a special education classroom teacher with, at first, a vague interest in early computer technology. However, thanks to his district's putative response to his role as a union leader, that vague interest became more pointed, more targeted and a lifelong avocation.

"One day, when I was a special education teacher," he remembers, "the first Apple II computer appeared in my school. Nobody wanted anything to do with it. So we stowed it in the special education classroom in

the school's basement. That's where I began playing with it. I had an immediate affinity for it. As soon as we began letting it say letters and letting it talk it was obvious that there was a huge attraction for kids with disabilities."

At the same time that the Apple II appeared, Mr. Holland was a member of his union's negotiating team. "My BOCES (Board of Cooperative Education Services) school district reacted to my union involvement by changing my assignment every year for five years." During those years, he says, "I dealt with special education students who ranged from kindergarten age to secondary school and a wide range of disabilities, many of them severe, including cognitive and physical disabilities."

Because all of his assignments were in the same school district "I was allowed to take the Apple II with me everywhere. Through those years kids constantly showed me what they could do with that device."

His students who used that early word processor, he recalls, "for the first time were able to edit their schoolwork before it was printed instead of seeing their unedited work, scarred by a teacher's red corrections, displayed on the class wall."

The greatest early technology he encountered, he says, was Bank Street Writer, the first word processor to which he was exposed.

Later, he moved from public K-12 schools to a Utica, New York independent living center where he worked with children in many upstate schools and in the state vocational rehab system.

"We then started Techspress, which was the short form of 'technologically successful expression.' We developed a center within the independent living facility that was focused on AT." A decade later he joined ATA.

"My evolution in the AT field has been fortunate in that I happened to be in the right place at the right time to have caught and ridden the AT wave from the beginning."

Mr. Holland attended McGill University in Montreal and then Eastern College near Philadelphia before earning a Masters degree in teaching from William Paterson College in New Jersey."

However, his formal education, he insists, failed to prepare him for the rigors of special education at the dawn of the information age. Even today, he declares, teacher training -- or the lack of it – in AT continues as a source of frustration. "It amazes me that a teaching certificate in special education can be awarded to a student who has never had the benefit of even a single course in assistive technology."

He has been lucky, he says, to have encountered the most effective AT teachers outside a college classroom. "The kids have been my teachers – and it's the self-taught educators and parents who are the true experts in the AT field. My hat is off to all of them!"

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Can't Stop the Beat: the Morphing of AT

An Interview with Russ Holland, co-founder, Adirondack AccessAbility, Inc.; former program director, Alliance for Technology Access

But I just cannot stand still
Cause the world keeps spinnin'
Round and round
And my heart's keeping time
To the speed of sound
"You Can't Stop the Beat," -Hairspray

According to veteran AT activist, observer and consultant Russ Holland, the next wave of AT discovery may be at hand. "Perhaps it'll come via open-source technology. Maybe it'll come about through the creation of apps. Maybe it will occur when individuals are put back in control of the development of their own tools, or at least are more heavily involved in the development process.

Russ Holland

"We once believed we could predict trends. Now, because technology is evolving faster and faster – and we have to adapt to technology rapidly -- we're lucky if we can spot trends and describe them."

The good news, though, he says, "is that the potential exists for the next big bang in accessible technology." The potential, he adds, may be evident in trends now emerging in the AT field.

The Surge of Jarring Change: Playing Catch-Up

Families, AT users, practitioners and educators all face the same challenge: keeping up with the breakneck speed of technological change, Mr. Holland asserts. Younger users and practitioners are already change veterans. For them, rapid technological advances are one of life's staples. Keeping up is automatic and nearly stress-free. This group is composed of digital natives, many of whom are connoisseurs of change. For older members of the AT field, or for its younger members who have somehow managed to remain at the margins of technology evolution – digital immigrants all – the challenge of adapting to new technology, of determining how to employ, or not to employ, the newest gadgets, is ever-present and consuming.

"The field is now confronted with technology evolution on two fronts – AT and consumer technology – both of which are exerting considerable impact on families, children with disabilities, practitioners and educators."

With AT and consumer technology there is an exponential increase in the rate of continuous technology evolution," Mr. Holland notes. This two-track change is so constant and sometimes so jarring that it becomes difficult for the field to catch up with it."

One of problems the AT field now faces, he insists, is that the traditional commitment of Apple and Microsoft to technology accessibility occasionally appears to be outstripped by the need to accelerate the evolution of their consumer technology.

"Their products are changing so fast that it is very easy for the gains that have been made in accessibility to erode under the pressure of the faster and faster evolution of their mainstream technology."

A current example, he says, involves the changeover from menus to ribbons at the top of the page for word processing. "The transition is working OK but as of yet the screen enlargement programs and some of the talking programs are producing user headaches."

No More Band-Aids?

In the not-so-distant past, Mr. Holland recalls, "We said that the purpose of assistive technology was to place band-aids on mainstream technology to make it work. The best example of that is when we moved from DOS to Windows. The result was that the users of screen readers, for example, had to wait an extra year for their technology to become operational again."

The two technology giants, Mr. Holland notes, have not given up in their attempts to resolve the technology-change dilemma and restore their historical emphasis on accessibility.

"I sat on a Microsoft AT advisory committee. The committee – and Microsoft – tried to anticipate some of those issues. For me, serving on that committee was a fascinating exercise because I gained some insight into how Microsoft worked inside."

What he learned, he reveals, is that the company's departments and products are autonomous. "As a result of that autonomy, for example, menus are pulled down differently in Word and Excel because each team that decided the issue was allowed to approach it independently."

Microsoft's way to resolve the decision-making dilemma, he explains, "was to take individuals from the assistive technology group and embed them in each of the development areas. Microsoft then proceeded to devise strategies to help the assistive tech professionals evangelize within the company. The company believes that accessibility is but one of the filters through which all design concepts are tested, the same as with usability and other testing measurements. That has helped to resolve the dilemma. Once in a while there is a significant accessibility glitch, but for the most part accessibility is taken seriously."

Much Turnover – and a Re-entry

Nevertheless, he adds, big-company structural quirks may leave the way open for regression.

For example, Microsoft, he asserts, experiences significant companywide personnel turnover yet maintains a small AT group responsible for monitoring company accessibility nationwide. As a solution, he says, "companies need to make accessibility part of the design parameters for all products." Several companies, especially Microsoft and Apple, are moving in that direction, he notes.

"Apple had been way out front in its accessibility efforts," according to Mr. Holland. In terms of accessibility, he points out, "The Mac was a work of art, with built-in screen enlargement and ways that the system could be tweaked to enhance accessibility. Then Apple apparently lost some of their focus in that effort. Several of Apple's best accessibility professionals departed to join a competitor."

Apple, however, has reentered the accessibility arena while Microsoft has continued its accessibility efforts, he says. Apple's recent wildly successful iPad introduction demonstrated the company's renewed commitment to accessibility concerns. "The iPad came out of the box already equipped with voiceover so that users with a visual disability can

operate it."

The inclusion of accessibility features in new technology has become necessary for companies to compete, Mr. Holland, remarks, "which is the way it should be."

Acquisition – and Adolescence

Despite a renewed commitment to accessibility on the part of some big technology companies, the degree of difficulty inherent in attempting to keep abreast of technology evolution has not yet been appreciably lessened for the AT field, Mr. Holland declares. The culprit: corporate economics.

"The economics underlying AT are more difficult for manufacturers than those associated with mainstream consumer tech," Mr. Holland claims. "Those economics may elongate device development time and drive expenses higher." In short, he says, "for manufacturers, AT means higher R&D costs but lower sales volume."

What is undeniable, he notes, is that the pendulum has long since swung from AT's early garage inventors to corporate giants, at least one of which, Apple, was also born in a garage. In the most recent stage of their development, companies have grown via acquisitions, like the corporate cousins in other economic sectors.

For example, he says, AbleNet acquired TASH and is now the distributor of Madentec Benetech products. A decade ago, he continues, Henter-Joyce, Blazie Engineering, and Benetech morphed into Freedom Scientific, a new company offering AT products for individuals with sensory impairments and learning disabilities. DynaVox purchased Blink Twice, the maker of the Tango AAC device.

The AT industry, he remarks, "is transitioning from

small companies built around a single product to large, more diverse companies offering a range of AT product lines."

Historically, he points out, "AT manufacturers have always been competitive, of course, but the competitors were driven by a mission beyond the bottom line. In many ways, there was a more collaborative relationship, even between competitors. Today, the manufacturer sector of the AT field is going through its adolescence."

Hybrid Platforms Take Shape

"Historically, AT designers established new platforms in order to accomplish certain tasks, which resulted in stand-alone devices, with augmentative communications devices being a good example," Mr. Holland says. He cites a family of communication devices developed by Prentke-Romich Company and DynaVox "that were not built on a Windows platform – they may have been Linux or proprietary – and cost around $7,000 apiece." These devices, he explains, were very powerful and many required a steep user and practitioner learning curve.

The current trend "is to move increasingly toward hybrid platforms. For example, DynaVox assistive technology is based on Windows, making the device a Windows computer with DynaVox software."

The iPad, he says, is mainstream technology with AT-related accessibility features. The iPad II, he notes, is reportedly equipped with even more accessibility features.

At January's ATIA conference, "we saw much evidence that users and practitioners were trying to

decide how best to use the iPad. The device costs $400-$1000 depending on the version, but that cost is about one-seventh the cost of specialized devices."

If there is a downside associated with the trend toward hybrid devices, Mr. Holland says, "it is that there is a tendency on the part of those who pay for these devices to suggest, 'Find something that works on the iPad,' whether or not that approach is the most appropriate for the user."

From Cumbersome to Ubiquitous

"We are moving quickly from large, somewhat cumbersome AT-dedicated devices to smaller, more integrated, more ubiquitous devices," according to Mr. Holland.

More functions are now cellphone/smartphone-based, he points out. "The cellphone, camera, computer and television are merging. I finally bit the bullet and traded in my flip phone for an iPhone. Even with my 30 years of experience I am blown away by the power and versatility at my fingertips. I'm a pilot, and all the information I need to plan and fly an airplane trip is now available instantly on my phone."

Jim Fruchterman is the CEO of Benetech (http://www.benetech.org/about/management_team.shtml), which employs technology to meet human needs. According to Mr. Holland, Mr. Fruchterman suggests "that the ubiquitous technology in the world today is the cellphone" and that therefore cellphones should be the major method of delivering technology aid to those worldwide who most need it. Benetech's Bookshare program (http://www.bookshare.org/) is devoted in part to finding ways for users to read any printed material by cellphone.

"The first devices with such capability were the reading devices consisting of a big copier and a huge computer that scanned books and later talked to the user." Unfortunately, he notes, only major metropolitan libraries were able to afford these large devices. "Now, though, you can remove a pen from your pocket and the pen will read to you by scanning the text. Text is developed digitally first, analog second. It seems absurd that we take a book developed on a computer and make the effort to scan it so we can put the book back onto the computer."

Large projects aimed at providing accessible content to students must resolve the same dilemma, Mr. Holland says. "In the near future readers will have a choice as to how they want to receive their desired book. The more traditional readers, who prefer print books, will probably be able to get their book on paper. Others will get theirs via a reader or on a phone to be read to the reader. Even readers who prefer a book in hard copy will likely find a CD of the book in the sleeve."

He expects to see steadily fewer $7000 stand-alone devices, "because new platforms are increasingly versatile and more powerful. My cellphone has more computing power than the Apollo space module possessed. I went to visit the old mission control area at NASA that we grew up watching on TV. Our guide said, 'Look at the phones; they're all rotary dial.' Today, we take our technology so much for granted."

He predicts that generational technophobia may soon become history. "With the passing of my parents' generation the baby boom generation will hold sway as the oldest generation – and baby boomers, plus the generation behind us will assume that whatever technology they want will be there and that its members have a right to instantaneous technology."

Technology: the Prosthetic for the Brain

There are many professionals in education and in other fields who decry the corrosive effect of technology on students' memorization skills. Russ Holland is not among them.

As individuals' reading habits change, memorization becomes less and less important, Mr. Holland declares. What's more important, he notes, are the strategies for finding needed information fast.

"I'm studying now for a flight instructors' exam. The exam is old-school Federal Aviation Administration (FAA), which is heavy on memorization. I have to rememorize the material I memorized years ago for my private pilot's test. I've long forgotten this material because the information is either on my laptop or on my phone – and I know where to find the information when I need it. Why should I dedicate my intellectual hard drive space to it?"

He is also finding – "and I don't know if my age is the main factor or if it's the changing times we live in" – that it has become difficult to memorize that material.

Technology, he says, has decreased the need to exercise the memory muscle. For individuals without cognitive disabilities, the atrophying of the memory muscle may be disconcerting. For children with cognitive disabilities, however, who struggle with memorization, technology acts as a valuable appendage, serving as an equalizer in education environments where mechanical devices, beginning with the pocket calculator a generation ago, often supplant cognitive skills and quickly become ubiquitous.

Technology, Mr. Holland remarks, "is a prosthetic for the brain." His concern, however, is that for students with and without disabilities, the opportunity to instantaneously locate needed information via technology deprives them – and all of us – of the ability to comprehend the theoretical underpinnings of a calculation. Students may not know what they are doing or why, only that they are performing a task to help them obtain what they need in the moment. "

The faster the information retrieval process, he adds, the less need there is for an information gathering strategy and the greater the need for a filtering one – determining what of that huge volume of information is accurate and how we located just what we need.

Yet, he concedes, "if one part of our brain is atrophying, another – the part that enables us to adapt new technology to current needs – is flourishing." For children with disabilities, he emphasizes, this trend is advantageous.

However, he cautions, "the faster the calculation processes work, the harder it is for us to really understand what takes place during those processes." For example, he points out, "when we won the fight years ago to permit kids to use calculators in class, we were conceding that those kids may now not fully understand the processes, but with a pocket calculator they can be just as functional. In other words, someone who is blind may never learn to read text. However, if kids with vision impairments can have the text spoken to them they will be just as functional as their non-vision impaired classmates. We're admitting, 'There will be some things we will no longer do in the same way, but our productivity can be equivalent.'"

A Movement toward Autism-Related Technology

At earlier ATIA conferences, Mr. Holland remembers, much of the technology on display was devoted to physical disabilities "probably because those disabilities were the most visible." Eventually, however, the spotlight moved to technology associated with learning disabilities. The transition did not occur, he explains, "because physical disabilities had been conquered; it took place because there are many more kids with learning disabilities than with physical disabilities."

Although this year's ATIA conference may have lacked hot breakthrough technologies, the warmest technologies at the January gathering, he says, "were integrated reading and writing tools, like Read & Write GOLD (http://www.texthelp.com/), which has been around for a while, and WordQ (www.wordq.com/). There were several new integrated tools at ATIA, which will benefit the AT field, he says: Jabbla (http://www.jabbla.com/software/content.asp?Pag=2&pnav=;1) offers a suite of augmentative communication software. Medialexie (http://www.medialexie.com/accueil.php?langue=us) provides remedial tools designed for people with dyslexia or dysorthographia.

"The field is saying that there is still room for improvement in this area. The result is that this proliferation of integrated technology is making each product more capable and more economical – because competition drives capabilities and hammers down price."

A nascent trend, he notes, is a movement from integrated reading technology toward technology designed for children with autism. "There's a lot more thought being given to the relationship between AT and autism. It's the kids with autism who have pushed that intensified focus. Leave a child with autism in a room with an iPad and they may well become very engaged with that piece of equipment."

The spotlight on learning disabilities and now autism, Mr. Holland remarks, "is directly related to the increasing rates of identification. Both groups went from almost no child being identified – there was a fiery debate as to whether learning disabilities even existed and how to define them – to millions being diagnosed. Behavioral disabilities are now also subject to categorization under either the learning disabilities or autism umbrellas, he notes. "Traditional education frequently works well for the middle third of students, bores the top third and frustrates the third having the most difficulty. Given those numbers, two-thirds of all students are ripe for behavioral problems, at least one-third of which are probably LD-related."

As the rate of diagnoses increases, he says, "so does the potential market for technologies that can be employed to assist these kids."

Open-Source: the Next Big Bang?

The vendor community, Mr. Holland says, "has become very adept at devising clever, more economical and more competitive ways to adapt and tweak existing ubiquitous technologies to fit new tasks. This trend can only be beneficial for the AT field because the approach provides consumers with more choices among technologies that are financially accessible."

Take the iPad, for example. "With the iPad, one of Apple's signature accomplishments is excellent us-

ability, which fits the adage that if you purchase equipment from Apple there is little need for an operator's manual."   .

The possible downside to the current adapt-and-tweak paradigm is stagnation, he warns, "because new technologies are built on only one or two operating systems.

Perhaps the next major trend, he suggests, will be a movement toward open-source technology. "The most favorable aspect of open source technologies," he notes, "is that they were designed to be accessible from the beginning. For example, Open Office (http://www.openoffice.org/) approximates Microsoft Office in terms of functionality, offering 90% of the functionality at no cost."

Microsoft, he comments, "solves problems and creates new software by assigning hundreds of programmers to these tasks. Open-source progresses because 10,000 programmers work on its development on a volunteer basis."

The Apps Explosion

Although not open-source technology, digital applications (apps) represent a new AT frontier, according to Mr. Holland. "Apps are not open-source – they're not free – but many are very inexpensive – and they are proliferating."

The apps explosion, he says, "has inspired programmers to program again, which returns them to their roots. I began by learning Pascal. I was in on the beginning of the microcomputer. My thought was, 'I'm going to buy one of these and become a developer.' Six months later I'd already been passed by. Before much time that function devolved to the big companies, where it remained until open-source.

"Then HyperCard on the Mac appeared, which let us techies do our own thing. HyperCard was one of the first successful hypermedia systems before the advent of the World Wide Web. Apps may be the next iteration of HyperCard. Apps developers need knowledge to develop an app, but they do not need an Apple or a Microsoft infrastructure in support of their efforts."

The apps industry, Mr. Holland says, "is becoming like the music marketplace, where iTunes are easily available and very inexpensive."

Mr. Holland believes that there may be a strong role for children with disabilities in the apps explosion. "Throughout the past three decades the developers who solicited and received input from end-users with disabilities created the most popular and effective devices. Today's children with disabilities will be creating apps that work for them. Other users, kids without disabilities, may be attracted to those apps in the future."

Humans as Toolmakers – Again

According to Mr. Holland, one definition of "man" is "toolmaker." What has set humans apart from other species, he notes, "is that we created tools as extensions of ourselves – and now we've become totally dependent on them!"

Modern humans, he says, have largely delegated tool creation tasks to other entities, "such as Apple or Microsoft, Ford or General Motors. Maybe one of the reasons that U.S. auto manufacturers experienced so much difficulty in the recent past is that perhaps they began to ignore user input and instead dictated to consumers. Then foreign automakers entered the U.S. car market and asked American

consumers what they needed, and then supplied it." The same fate might befall U.S. technology developers, he asserts.

"I was at a conference not long ago when a participant from Portugal declared, 'What makes Bill Gates believe that everyone wants to think in Office 2003?' Is it culturally relevant just because we translate it?"

These developments, he declares, may enable the end-user to be his/her own toolmaker. "Odds are this will be a workable technology environment for everyone, including children with disabilities and their families. The end product will be less expensive, more accessible and more relevant. If we begin empowering the users of AT to be the creators of it an exciting new era might unfold."

Children with Disabilities May Lead the Way

He would not be surprised if children with disabilities lead the way to the new era he imagines. "They can create apps as well as anyone because like so many kids now they are at least as immersed in their technology as an extension of themselves, an immersion that can transform their 'disabilities' into strengths."

For example, he explains, "the 'tunnel vision' – the intense focus -- that is associated with some children on the autism spectrum may be very productive in some areas. We thus need to answer the question, Is their disability really a disability or is it an aptitude?

Maybe, Mr. Holland concludes, the AT field and others are about to be taught the answer to that

question. "I have found that each time I make an assumption about what an individual can or cannot do I have set myself up to have my assumption obliterated. A child about whom I've made an assumption will then proceed to demonstrate to me that he/she can perform the task in question better than I. The field is never as exciting as when those assumptions are eviscerated before our eyes. That's what this new era is all about."

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Did you go to the CSUN Assistive Technology Conference last month?

We invite you to share your observations about new devices and applications with our national network of more than 8,000 organizations and professionals.

Based on what you've seen
(there and elsewhere)
what AT trends do you predict?

FCTD would like to publish your insights.
Please send them to:
fctd@aed.org
Thanks!

RESOURCES

ARTICLES

Apps Designed with Accessibility in Mind

By Heather Bridgeman and Nick Weiland
Ohio Center for Autism and Low Incidence (OCALI)
January 2011
This PDF file includes sections on early literacy, access to reading/writing, organization/study skills, reinforcement/data, social competence, visual motor and movement, accessibility, and other resources. Each section includes links to apps in a variety of price ranges.
http://www.ocali.org/up_archive_doc/Apps_Designed_with_Disability_in_Mind.pdf

Apps Help Children with Developmental Disabilities

By Tatyana Meshcheryakova
Six Estate Communications
August 27, 2010
The author explores the value of portable devices including the iPad, iPod Touch, and iPhone in teaching social and communication skills to children with developmental disabilities. Ms. Meshcheryakova cites the availability of dozens of specialized apps via iTunes., including those designed for children on the autism spectrum, such as Model Me Going Places (http://www.modelme-kids.com/community-social-skills-autism.html). Others, like Proloquo2Go (http://www.proloquo-2go.com/) are designed to aid children and adults with Down syndrome, cerebral palsy, Lou Gehrig's Disease and stroke patients striving to regain their ability to speak.
http://sixestate.com/apps-help-children-with-developmental-disabilities/

Accessibility Update 2010

Microsoft
This monthly online newsletter is aimed at helping teachers to effectively use accessibility tools. Articles include: Accessibility: A Guide for Educators, a download that explains accessibility and its importance to students. Back to School: Making Sure Students with Disabilities Can See, Hear, and Use their PCs is a blog about accessibility options, and encourages teachers to ask questions and share their own experiences. Accessibility Centers and Consultants around the World is a listing of technology centers that can offer support and expertise to schools. The website also includes tutorials for Microsoft Accessibility products, Tips and Tricks to personalize a PC, a section on how to add text-to-speech for software developers and links to websites related to accessibility and accessibility products. The newsletter is email deliverable via Microsoft's free subscription service.
http://www.microsoft.com/enable/news/newsletter/sep10.aspx

Characteristics of Great Apps for Kids with Autism

By Shannon Des Roches Rosa
Moms with Apps
August 4, 2010
Sharon Des Roches Rosa is a mother, writer, advocate for children with autism and special needs and mother of a nine-year-old son on the autism spectrum. In this article she documents Leo's use of the iPad and the device's impact on Leo and his family. In describing the apps that have proven effective for her son she aims to share with developers specific features that made a positive difference for him. Ms. Des Roches Rosa's additional perspective is that of "a former software producer for Electronic Arts and The Learning Company who has no patience with software that isn't well-planned or doesn't at least have marked potential." When selecting an app for Leo she considers the following factors:

- Her son's status as a "kid" rather than only his categorization as a child with special needs
- An app's potential for delivering error-free learning
- An app's simplicity, which results in a higher degree of engagement
- A fun factor, one feature that amuses her son and on which he can focus
- A visually distinctive interface that presents visual patterns which Leo can accurately recall – an important factor until Leo is able to read
- A tempo change option, to provide for variation
- Flexible content management, enabling Ms. Des Roches Rosa to assemble and retrieve the desired content.

http://momswithapps.com/2010/08/04/characteristics-of-great-apps-for-kids-with-autism/

GUIDES

Complete Guide to Educational and Special Needs Apps

By Dawn Villareal

One Place for Special Needs (2010)

The guide compiled by Ms. Villareal categorizes a wide range of applications by skill set for easier selection by parents of children with autism, ADHD, apraxia, learning disabilities and sensory issues, among other disabilities. The guide includes apps for the iPad, iPhone, iPod and the Android operating system. http://www.oneplaceforspecialneeds.com/main/library_special_needs_apps.html

WEBSITES

iComm

iComm is a communication app available from iTunes in free and fee-based versions. In its free version, the app features nine categories of customizable pictured objects that can be spoken. The fee-based version features 20 picture categories as well as audio files and additional storage. iComm confirms communication or asks yes/no questions for each item that is displayed. Additional features include individualized pictures and recordability. http://www.miasapps.com/icomm.html

Access Firefox

This website describes the pre-installed accessibility tools and features available with the open source Firefox web browser. These tools are accessible by all Mozilla Firefox users. Customizable resources include introductory information and guides for new users. Mozilla (http://www.mozilla.org/about/mission.html) is a non-profit software developer. http://www.accessfirefox.org/

Facebook Accessibility and Assistive Technology Page

This page from Facebook details the site's accessibility features and lists user tips for Facebook's registration, including the social network's audio caption option, chat interface and gift shop. The page also lists navigational keyboard shortcuts, and includes a link to the Facebook accessibility team for users who are experiencing problems with assistive software or hardware. http://www.facebook.com/help/?page=440

BLOGS

Assistive Technology Apps Plus: What You Need to Know

This blog post, by Glenda Anderson, an AT and educational technology consultant at the Butte County (MT) Office of Education, introduces readers to AT applications for the iPhone, iPod Touch and iPad. The list is diverse, covering dozens of potential AT needs. Ms. Anderson describes each application and discusses a range of uses. Though written to address the needs of children and teens, Ms. Anderson's applications list

is appropriate for all AT users and their families. http://atclassroom.blogspot.com/2010/02/ipho neitouchipad-in-special-education.html

Adapting Creatively

The blogger, a special educator and the parent of a child with Rett Syndrome, is experienced in adapting curriculum for children with motor disabilities and language barriers. She focuses on AT and non-verbal communication strategies associated with children with Rett Syndrome. She has included links to general information about Rett Syndrome and AT, annotated with personal insights on the specific AT that has proven effective for her child and family. http://adaptingcreatively.blogspot.com/

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KNOWLEDGE NETWORK MEMBERS

Adirondack AccessAbility Inc. (ADKA)

An affiliate of the Alliance for Technology Access (ATA), ADKA provides individual and organizational consulting, advocacy and AT training to individuals, families and providers in the Adirondack region of upstate New York.

All individual consulting is based on a consumer-directed collaborative consultation model. A consulting team is developed which may include family members, significant others, educators, employers, vocational rehabilitation counselors, medical and other professionals. This team provides information and hands-on experience to consumers to support informed decisions about AT goals, tools and environments. Individual consultation is provided in the recreational, home, educational, or vocational environment in which the technology is intended to be used.

ADKA emphasizes its organizational consulting capabilities provided in concert with various organizations to develop local resources. The preferred ADKA model is community-based and consumer-directed. Activities include initial planning for a community-based resource, assisting with self-evaluation and capacity-building efforts, developing and delivering curriculum materials for staff and ongoing consulting on specific issues.

The organization is operated by Russ Holland and his wife, Sue Brown, both of whom are noted AT teachers and consultants.

For further information, contact:
Adirondack AccessAbility
687 Figert Road

Cold Brook, NY 13324
Phone/Fax: (315) 826-3929
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http://www.adkaccess.org/

The Archimedes Project

Housed at the University of Hawaii since 2003 but initiated at Stanford University in 1992, the project is a multi-disciplinary accessibility research group with contractors and collaborating researchers in California, North Carolina, New York, the Netherlands, Japan and New Zealand. In studying user needs, usability issues and the research and development of special hardware and software, the Archimedes approach is anchored in the Intelligent Total Access System (iTASK) (http://archimedes.hawaii.edu/ITAS.htm), which supplies individuals with a personal information appliance called an accessor. The accessor provides alternative ways to perform the keyboard, mouse and/or monitor functions of any information technology device or appliance. iTASK incorporates an Integration Manager and Natural Interaction Processor (IMNIP), recently invented by Archimedes researchers, that enables people to interact with devices using their own natural language and gestures. Applications currently under development around these core technologies include:

- *Collaborative networking* performed by a group of interconnected iTASK modules that allows intelligence to be distributed throughout a smart environment
- *Speech accessors* pioneered by the Archimedes Project combine speech recognition with alternative pointing devices such as head trackers and eye trackers
- *Head tracking accessors* that enable an individual to control a mouse cursor with small movements of the head
- *Nose tracking accessors* that consist of a video camera and neural network that track the direction in which the nose is pointing
- *Eye tracking accessors* that give individuals complete control of a computer using only eye movements; word prediction techniques are also included in the keyboard software to assist the user in creating text
- *Graphical user interface (GUI) accessors* that make visually presented information accessible to blind and visually impaired computer users; GUI accessors separate textual and graphical components and present them to the user and employ Optical Character Recognition to recover text, which it presents to the user as synthesized speech or Braille
- *American Sign Language (ASL) Accessors* used by deaf and hard-of hearing individuals to circumvent the growing use of speech-only interfaces in computer, web and telephone-based applications; Archimedes is developing a system for automatically generating high quality sign language on computer and television displays which may ultimately result in real-time two-way communication between deaf and hearing people.

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Texthelp Systems, Inc.

The company is a developer of accessibility, dyslexia and text-to-speech software for struggling readers and writers. Their website features an extensive AT research library with articles that include:

- *Portable Document Format Files: Accessibility and Usability*
- *A Dyslexic Perspective on eContent Accessibility*
- *The Effects of Word Completion and Word Prediction on Typing Rates Using On-screen Keyboards*
- *Low-Cost Voice Recognition Systems for the PC*
- *Can Reading and Spelling Scores on Standardized Tests be Improved Through the Use of Supportive Software for Students with Language and Communication Difficulties?*

The company's software products include: *Read&Write GOLD, Fluency Tutor, Lexiflow, Speechstream, and BrowseAloud*

For more information, contact:
Texthelp Systems, Inc.
100 Unicorn Park Drive, MA 1801
Phone: (888) 248-0652
Fax: (866) 248-0652
Contact: Jack Dolan, President
Email: u.s.info@texthelp.com
http://www.texthelp.com
http://www.texthelp.com/page.asp?pg_id=10074

Technology & Innovation in Education (TIE)

Technology & Innovation in Education (TIE) Staffed by professional educators, South Dakota-based TIE administers professional development workshops that incorporate current technologies with traditional strategies for application to workshop participants' current practices. Workshop topics include:

- Blogs and wikis
- Charlotte Danielson Framework for Teaching Book Study
- Creating Digitally Rich Classrooms
- Raising the Bar and Closing the Gap: A Book Study
- SPED: Thinkfinity for 21st Century Learners
- Tech Tuesday: Plurk
- Tech Tuesday: Teaching with iPads
- The Highly Engaged Classroom
- Thinkfinity: Train the Trainer

TIE is involved with a number of technology-related South Dakota teacher professional development projects, including *Classroom Connections* (http://cc.tie.net/), *Dakota ASSETS*

For additional information, contact:
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