



DIRECTIONS

Technology in Special Education

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September 1997

Technology and Children

USING TECHNOLOGY TO IMPLEMENT THE SPECIAL NEEDS MODEL

By Joyce Serido

Source: Mindplay Teaching Tools, Summer 1997

As I read more and more special needs if maybe we are all more about special education, I believe that there are students than regular students! I can't help but wonder special.

Each of us compensates for skills we do not have by overusing the gifts we were given. On balance, most of us manage to stay within the norm with this approach. Yet when students have difficulty mastering the basic skills needed to do well in school, we are forced to look at a different model.

The special needs model requires an individual learning prescription. We assess individual strengths, weaknesses, learning styles, physical and learning disabilities. Based on our findings, we develop a plan for individual success. Watching special needs teachers, their students and parents, I marvel at what a team they make!

Together they set individual goals for the student. Using a variety of techniques, tools, and resources, they set about helping the student overcome difficulties to achieve their goals.

Special needs teachers remind me of coaches. Coaches observe each player to determine what skills they possess, what skills they are having difficulty mastering, and then set up a program to improve their skills. The coach treats each player individually, putting together a program that allows them to focus on where they need help. Only by assisting each player maximize their skills will the team's potential be reached.

We know the special needs model of individual programming works. We know too, that the cost of the model prohibits us from implementing it for all students. A teacher:student ratio of 1:3 or 1:4 is not a feasible model for our public schools.

Given the advances in computer technology and software, I believe there is now a cost-effective way to implement the model. Simply put, computers do

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Time Saving Assistive Technology Resources

Source: **Grant Wood AEA Web Page**
4401 Sixth Street S.W., Cedar Rapids, IA
 <<http://www.aea10.k12.ia.us/aea10.html>>

With the ever increasing need for ready made materials and ideas to be used in the classroom in the area of Assistive Technology, the market is now more than ever attempting to meet this need. The following list, while not inclusive of all materials available, highlights resources we believe to be extremely beneficial to classroom and special education teachers.

Book of Possibilities (1996), AbleNet Inc.: Simple to use technology is the key element in the more than 80 curriculum based ideas designed to make learning more inclusive for students with differing abilities. \$37.00

Communication Displays for Engineered Preschool Environments and Communication Overlays for Engineering Training Environments (1994), Mayer-Johnson Co.: These resources provide the most comprehensive array of created activity based augmentative communication displays currently available for children or adolescents. \$69.00 for each book

Quick Readable, Repeatable Stories and Activities (1994), Mayer-Johnson Co.: An exciting 223 page book written for school-age children with special literacy needs. The stories contain simple repetitive vocabulary and phrases which are easily followed and "read" with the aid of picture symbols on each page. \$24.00

Hands-On Reading and More Hands-On Reading, Mayer-Johnson Co.:

These resources contain over 400 pages of creative and entertaining thematic units based on common children's stories such as "Green Eggs and Ham" and "Harry the Dirty Dog", etc. All units are designed to involve both speaking and nonspeaking students while promoting emergent literacy through the use of picture communication symbols. \$34.00 each book

Stories About Me, Mayer-Johnson, Co.: Here's a chance for students of all ages to "write" and "read" stories about themselves. Each story is 4 or 5 lines long and is made primarily with the Picture Communication Symbols. Over 200 pages of reproducible stories are divided into categories. \$29.00

I Can Cook Too!, Mayer-Johnson, Co.: This resource contains 45 recipes in both words and symbols as well as follow-up activities for fine and gross motor, receptive and expressive language, social skills and literacy experiences. \$39.00

I Can Play Too!, Mayer-Johnson, Co.: Have your nonspeaking students use the Macintosh for communication while playing their favorite games. I Can Play, Too! is set of on-screen communication boards with clear enthusiastic speech to participate in game playing. \$89.00

Grant Wood Area Education Agency provides leadership and services in classroom instruction, early childhood, technology, special education and school management for public school districts and private schools in Benton, Cedar, Iowa, Johnson, Jones, Linn and Washington counties in Iowa. §

DIRECTIONS

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Translating Technology Research Into Practice: An Even Better IDEA

by Thomas Hehir, Louis Danielson, Ellen Schiller

Office of Special Education Programs, U.S. Department of Education

Source: TAM Connector, Volume 10, No. 3

Education for all means helping all children gain access to appropriate technology. Nowhere is this more important than in the lives of children with disabilities. For this reason, those of us committed to education for children with disabilities were pleased to see that the reauthorization of the Individuals with Disabilities Education Act of 1997 (IDEA 1997) continues to support research, development, and effective uses of technology.

We all know to some extent how technological tools - from high-end computer-based hardware and software to low tech instruments - can strengthen teaching and learning at school and home and in the daily

lives of children with disabilities.

IDEA 1997 authorizes a range of activities to ensure that as practitioners, researchers, or policy makers, we are better informed and better poised to harness the potential of innovations in technology for children with disabilities. By bringing research into practice, the law creates new opportunities for all of us to get more involved in learning about, accessing, and using the right kinds of technology to improve education.

Linking Research and Practice

Because research constantly generates new ideas, technological innovations, and data on effective approaches and practices, IDEA 1997 focuses on

linking research to practice. When educators, students, and families tap into the significant body of research in the area of special education and technology, they will learn about and think of new ways to work with children who have disabilities. The resulting promulgation of more effective tools and practices will lead to improved curricula, enhanced teaching strategies, and necessary systemic change.

For these reasons, IDEA 1997 authorizes the U.S. Department of Education to not only conduct research and development activities in technology, but also to demonstrate and promote widespread use of

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ATFSCP Notes

The Assistive Technology Funding and Systems Change Project

<http://www.ucpa.org/html/innovative/atfsc_index.html>

ACQUISITION, PLANNING AND PROCUREMENT OF INFORMATION TECHNOLOGY IN SCHOOLS

PART 2

By Susan Goodman, Esq.

Since Section 508 applies to federal agencies, what relevance does it have to the states or local public schools? The answer to this can be found in the discussion about the Technology-Related Assistance for Individuals with Disabilities Act (Tech Act)

The Technology-Related Assistance for Individuals with Disabilities Act (Tech Act) 29 U. S. C 5 2201 et seq.

This law, originally passed in 1988 and amended in 1994, makes Section 508 applicable to the states Under the Tech Act, states became eligible to receive grants for the provision of comprehensive, consumer-responsive, statewide systems of technology assistance. They are eligible for five-year grants: however, as a condition for participation in the fourth through tenth years, states are required to comply with the guidelines established under Section 508.

Whether this requirement extends to local public schools depends whether they are sub-recipients under the state Tech Act grant. As for advocacy, Section 508 is more of an educational tool than a mandate. Even if Section 508 was applicable to schools, it contains no enforcement procedures in cases where agencies fail to comply. Still, the guidelines developed by the federal government can provide valuable assistance to those school districts trying to make technology accessible.

The Americans with Disabilities Act of 1990 (ADA) 42 U.S.C. 51213

Title II of the Americans with Disabilities Act prohibits discrimination against individuals with disabilities in public entities. Public entities include any state or local governments and any of their departments, agencies, or other instrumentalities. There are sections in the law which address issues of equal access to programs and services which should include the accessibility of electronic information technology. Title II regulations at 28 C.F.R. Part 35 include provisions that require entities to insure that no individual on the basis of his or her disability is excluded from participation in, denied the benefits of the services, programs, or activities of a public entity...§35.130 (a). Public entities must also furnish appropriate auxiliary aids and services where necessary to afford an individual with a disability an equally opportunity to participate in, and enjoy the benefits of, a service, program or activity conducted by a public entity. §35.160 (b) (1).

"...operate their programs so that, when viewed in their entirety, they are readily accessible to and usable by individuals with disabilities... and, furnish auxiliary aids and services when necessary to ensure effective communication, unless an undue burden or fundamental alteration in the program would exist."

Therefore, Title II requires that programs and services be equally available and barriers that deny access to electronic information technology be removed. It states that individuals with disabilities must be afforded the opportunity for *effective communication*. If technology is central to the education process, failure to make that technology accessible is a denial of equal access to education.

State human rights laws

Many states have laws which require governmental activities to be carried out in a non-discriminatory way. State education agencies may have provisions in their regulations that require equality of opportunity for all students. These laws are unlikely to be enforced without complaints from individuals whose rights have been violated.

Legal advocacy

Clearly, students with disabilities are entitled to access to electronic information technology under several federal and state laws. While laws offer legal remedies for denial of access, proactive strategies to ensure accessibility are necessary if the vision of equal access is going to be accomplished in this area. Such strategies will often make good fiscal sense as well. There are several reasons for this which include:

1. Education and electronic information technology are one of the highest priorities of the current Administration. As a result, more funds will likely be directed to these initiatives beyond funding from other federal initiatives in this area (e.g., Goals 2000).

2. State legislatures are appropriating funds for educational technology.

3. Making electronic information technology accessible is much less expensive and more practical while the infrastructure is being developed and funds are being expended. This will avoid costly adaptations and large expenditures of time trying to make the technology accessible after the systems are in place.

4. School districts are legally obligated to make programs and services accessible. Therefore, making the appropriate technology available at the outset when it's cheaper to install and less time consuming is preferable. Costly lawsuits may also be avoided.

Barriers to Accessibility in Procurement

1. Lack of knowledge

Individuals purchasing technology equipment (e.g., computer hardware and software) for schools are usually knowledgeable about what types of systems are needed for the general education population. As stated earlier however, they are usually not knowledgeable about purchasing equipment that is or can be made accessible to students with disabilities. If accessible technology is considered at all by technology purchasers, it is mistakenly thought of as not available, too costly; too time-consuming to find or as the

responsibility of "special education."

2. Resistance to dealing with disability-related issues.

The advocacy movement for individuals with disabilities has its roots in the civil rights movement of the 1960s. Advocacy efforts drove the movement through passage of laws such as Individuals with Disabilities Education Act (IDEA), Section 504, and the ADA. These laws were based on the notion of right to equal services and equal access under the law. However, separate systems for addressing the needs of individuals with disabilities have developed and persisted in many areas of society.

In a sense, the resistance to making technology available to students with disabilities reflects the attitudes of many educators who believe that "special education" (meeting the *individual* needs of students with disabilities) is not an obligation of those who deal with the general education population or expend general education funds. Special education is incorrectly thought of as a *place* by both the general and special education community. It is not thought of as *services*, in spite of a great deal of language in the IDEA to support this conceptual framework. Meeting the needs of students with disabilities becomes the obligation of "someone else." Procurement officials perceive requests for accessibility as inappropriately attempting to meet individual needs in advance.

3. "Unusual requests"

Systems are not developed to meet the needs of individuals. Entrances to the supermarket or other retail stores were designed to meet the needs of average individuals who can walk. Before the ADA, individuals in wheelchairs,

scooters or other mobility devices could not enter many public establishments. Consideration was not given to needs other than those of the majority.

However, in 1990, about 25 years after the beginning of the advocacy movement for individuals with disabilities, the ADA was passed. This law required that most public and private establishments be physically accessible. This was, in part, due to the simplicity of accessibility in architecture and strong and persistent advocacy by individuals with disabilities and their advocates.

Current Efforts

Missouri Experience: *Just as construction of a new building is expected to result in one that is fully accessible, development of an educational technology infrastructure is expected to result in a system that is fully accessible....*' (Quotation from a memo written on November 4, 1996 from the Coordinator of State Programs and Special Education Programs to Superintendents, Technology Coordinators and Special Education Coordinators for the Department of Elementary and Secondary Education (DESE) in the state of Missouri.)

While this quotation may not be particularly visionary to most advocates, it reflects a position by a state department of education that is rarely, if ever, considered or openly stated. It was the result of strong advocacy efforts by the staff of the Missouri Technology Assistance Project (MATP), the state Tech Act project.

These efforts began when the project became aware of a \$21 million dollar

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RJ's Corner

RJ Cooper & Associates

<<http://www.rjcooper.com>>

RJ'S TECHWEEK FINAL REPORT AND RECOMMENDATIONS

RJ Cooper is an internationally-known lecturer, researcher, developer, and author. He specializes in applying technology to persons with special needs. His background in Electrical Engineering, Computer Science, and Developmental Psychology. He owns a small company that produces specific products for persons with special needs.

The following is a report from one of RJ's TechWeeks, a 1 week 'camp' where an entire family spends a week in southern California, and each day RJ spends 2 hours with them in a resort-style mini-lab.

TechWeeker: Jammie T. - March 3-7, 1997

Jammie needs to associate pictures as symbols of real objects/activities. As communication was the #1 goal for both Cyndi and Bob, it is necessary that Jammie establish some type of expandable vocabulary system, concrete enough for others to understand her. Signs, although useful to those around Jammie a lot, are abstract to teach, and understood by few. If Jammie could establish using pictures as indications of needs/desires, this would be general and iconic enough for others to understand Jammie.

I believe that Jammie's lack of communication is her greatest frustration. If she had a method with which to communicate, her 'negative'

behaviors would decrease. Her receptive skills are much higher than her expressive, so she will follow directions, as long as they are not opposed to her wishes. In that case, she simply tunes out and wanders for something stimulating, not knowing what she seeks, herself.

Jammie has a severe attention deficit but does not exhibit hyperactivity. She will stay focused only on those things that are providing great sensory stimulation. This week, those things were the CooperCar, singing and pantomiming songs, her first exposure to the workstation/computer/programs, and interacting, at the computer, with Courtney (an infant) and Jessica (an 11 year old with significant developmental delay) within the Open House with 15 adults.

In order to help Jammie learn about using pictures as communication symbols, it is necessary to 'pair' pictures to objects/activities. Further, as Jammie is unaware of the uniqueness of pictures, the pictures used for this method should be quite different from each other. Real photos do not stand out as different to those that do not know about pictures and that they represent some aspect of reality. Therefore, I suggest using computer generated images that are of high contrast, simply colors, and distinct edges (the item on the picture, not the edge of the paper). These pictures should be available to Jammie whenever the item in the picture is

available. For example, in the living room, you might have the picture of the 'teapot', in the song "I'm a little Teapot." By the door, would be the picture of the door; Jammie enjoys opening the door for people.

Since Jammie's receptive skills are quite adequate, she responds when you tell her to "Point to the picture of ball, if you want the ball." This must be consistent. Eventually, I would hope that Jammie would understand that the picture actually looks like that which it represents.

As soon as Jammie becomes consistent with pointing to pictures spread throughout an environment, pictures should then be grouped so that Jammie learns to discriminate, through experience with consistent paired consequences. Eventually, the pictures should be further 'grouped' by gluing them to an overlay.

At that point, the overlay can be placed within IntelliKeys, to operate Point To Pictures, and 'early' augmentative communication training program, that can be setup with any pictures. I would hope that Jammie can learn to use the computer, with its recorded speech, to request items, thus attaching some importance to the computer as a tool.

Jammie's vision is adequate for computer operation, even Dynavox (an augmentative communication device; a talking 'box', if you will)

operation. At the Open House, a representative of Sentient Systems (the company that produces the Dynavox) gave Cyndi and Bob a demonstration of the device, and even spent some time with Jammie on it. Jammie remained interested and enjoyed Steve very much. She interacted very appropriately, and even used her pointer finger, several times, when prompted. She appeared, though, not to discriminate between the 6 pictures on the Dynavox screen. However, when prompted to "Smell the flowers" after Steve and she activated that picture, she leaned forward to the screen and sniffed mightily, indicating, possibly, that she was aware that there were flowers on the screen, and she could only know this because she could see the picture and thought it was 'smell-able'. Of course, she could have just been following our instructions.

Jammie's performance in the CooperCar shows that she can problem-solve and deduce solutions. When I would turn off one switch in the CooperCar, upon Jammie encountering an obstacle, Jammie would quickly move from that switch to the other one. She was consistent at this task. She could find the switch that worked. Because she enjoyed the CooperCar so much, and she showed us that she could problem-solve, the CooperCar is a tool I would recommend, if the budget allows.

Jammie showed the 'cleanest' performance on our first day together, operating Children's Switch Progressions very purposefully and appropriately, waiting for the music/animation to stop before touching the screen to get things going again. However, the computer reward of

music and graphics only captivates her attention until the computer tells her to "stop" or "wait," if she interacts at the wrong time, at which point she tunes it out and begins to wander. For now, I would suggest that there be no 'wrong' time to activate her input device.

Our final activities focused, again, on attempting to get Jammie to 'key off' the computer and become more interested in it. Using her favorite songs and pantomime, Jammie remained interested and participate, in performing these songs, while I recorded their singing into the computer into cells/buttons, that could then be played back. Then the family performed the songs again, but with the computer doing the 'singing'. Although Jammie's participation decreased during this phase, she remained interested. I would like to see the pictures on the buttons in the software, namely those which represent each phrase of the song (i.e. spider, rain, teapot, etc.), on IntelliKeys, and Jammie would activate each picture/cell to play back the song for the pantomiming. I feel this could be very successful and generalize to other songs, presented in the same manner.

As Jammie's receptive language skills seem so good, relative to her expressive, I can only 'diagnose' her as a child with severe attention deficits and speech delay, rather than "mentally retarded." I feel that, given the appropriate consistent methods and tools with which to work, Jammie could progress farther than many thought possible.

Recommended Items

IntelliKeys alternate keyboard - (RJ

Cooper & Assoc. - 800-RJCooper) - \$395 - to act as Jammie's primary input device.

IntelliKeys Overlay Maker (RJC) - \$69.95 - to create overlays that match software

ClickIt - (RJC) - \$99.95 - to allow IntelliKeys to direct-select mouse-oriented software.

Point To Pictures software - (RJC) - \$99 - early augmentative communication software that can be customized for the different pictures and ways to use them

An appropriate picture/symbol set - Cindy expressed interest in the Dynavox, and, although Jammie is not quite able to utilize one now, I believe she will be able to in the near future. Bearing that in mind, it might be valuable to use those pictures that are on the Dynavox, within her training phase also. Therefore:

Dynasyms Stickers - (Sentient Systems - 800-344-1778) - \$80 - these pictures can be color-copied to appropriate sizes for around the environment use. They also can be scanned into the computer to be used with Point To Pictures, which can generate IntelliKeys overlays.

E-Z Reader (or equivalent) - a dedicated photo/picture scanner for getting pictures into the computer - around \$400. Any color scanner would serve this purpose also. §

Editor's Note: RJ's Corner will be appearing regularly in DIRECTIONS. You can reach him at: RJ Cooper & Associates, 24843 Del Prado #283, Dana Point, CA 92629, Voice: 714-661-6904; Fax: 714-240-9785; rj@rjcooper.com. We extend him a hearty welcome into our family.

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research-based tools and practices. The law calls on the Department to improve and expand the transfer of technology - bridging the world of research with that of educators, students, and their families. By creating additional opportunities for informed and continuous dialogue within and outside of the special education community, IDEA 1997 supports the exchange of information, knowledge, and skills that foster collaborative efforts to ensure that all children with disabilities have access to the best education possible.

Empowering Parents and Teachers to Use Technology

IDEA 1997 addresses the vital need to educate and train teachers, parents, and others working with children who have disabilities because they are all

pivotal forces shaping the lives and learning experiences of young people. IDEA 1997 supports training activities for educators in the innovative uses and applications of technology to enhance learning through early intervention, educational, and transitional services. It addresses the need to provide parents with training and educational opportunities on the use of technology, including assistive technology devices and services.

As a result, IDEA 1997 opens up many new avenues for educators and family members to take part in learning experiences that help improve professional practice and the daily lives of children with disabilities.

Technology and the IEP: A Requirement, Not an Option

Under the reauthorization, the school team responsible for developing a child's Individualized Education Program (IEP) must consider whether the child requires assistive technology devices and services. In the past, this was not clear to educators. Another departure from the past is that the non-special-education teachers of students included in the general education classroom are now expected to participate in the IEP meetings.

These changes reflect a commitment to ensure that each and every child with a disability has an appropriate IEP that helps to increase success in school. They also underscore the

Continued on next page

significance of sensitizing special education teachers, regular teachers, and others involved in the development of the IEP about technologies and their uses. With a better grasp of what technology can and cannot do, everyone involved can jointly develop IEPs that better serve the needs of children with disabilities.

Better Tools, Better Collaboration, Better Results

While technology cannot singularly address all the challenges in special education, IDEA 1997 reflects the understanding that both high- and low-tech tools have the potential to transform teaching and learning for children with disabilities. The law provides opportunities for all of us concerned about special education to better access resources, skills, and an extensive knowledge base in special education and technology, while supporting collaboration among parents, educators, researchers, policy makers, and school leaders.

IDEA 1997 not only raises our expectations for children with disabilities, it legislates that we be given the tools to realize these expectations. It reminds us that by working together, through an ongoing dialogue informed by research and best practices, we can make education for all a reality. §

Editor's Note: TAM Connector is an official publication of the Technology & Media Division of the Council for Exceptional Children (CEC). You can reach them at: 1920 Association Dr., Reston, VA 20191; Voice: 703-620-3660; Fax: 703-264-9446, 703-264-1637; or cathym@cec.sped.org; http://www.cec.sped.org.

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not eliminate the need for teachers; rather, technology when integrated in the classroom makes it possible for teachers to effectively reach students of all abilities.

Working with local school districts, we are beginning to understand how to integrate technology into the classroom. It is a time consuming process; but the results are worth it. It is also an evolutionary process, requiring a long term vision and shorter term, achievable goals.

These are the six steps we are using to implement the model:

Step 1 - Select Resources

Identify the resources you already have. Resources include software, textbooks, videos, whatever teachers are using that works.

Step 2 -Map the Resources to your Curriculum

Match them to the curriculum, identify the holes and solicit new educational software resources to fill the holes To minimize feeling overwhelmed by the task, start small: pick one subject area or one grade. But start.

Step 3 - Evaluate Resources

Identify what resources work, when they work best, how to use them. Write the information down and share the information with your colleagues. Let the information become a living repository of resources that evolves over time.

Step 4- Perform Diagnostic Pre-Testing

A lot of this information is already

available through classroom testing, standardized testing, progress reports. It is important to know where each student is and what impedes their progress.

Step 5- Prepare Individual Learning Plans

The learning plan will become part of the student's profile. Initially this can be at a summary or general level. Over time, you can refine and further detail the information that is available.

Step 6- Post-Program Testing

Measure progress. It is easy to discount individual progress when skill levels and achievements vary so widely by class. What is important is how far each student progressed from where they started.

Educators who have a clear vision of how to use technology as a classroom tool are better able to sift through the burgeoning quantity of educational computer resources. It is the educator's use of the tool, not simply the tool, that makes all the difference to the student.

Joyce Serido is President of MINDPLAY. Since their founding in 1986, MINDPLAY has focused on special needs children. They were the first company to design child-centered curriculum software, and the first to capture student performance, providing users with a tool for independent study with documented results. Contact MINDPLAY for a free catalog at: Department SN71, 160 W. Fort Lowell Road, Tucson, AZ 85705, 800-221-7911, or visit them on the web at: <http://www.mindplay.com>. §

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appropriation being made by the Missouri legislature to the school districts for the purchase of educational technology. The time in which efforts were needed that would help schools in making this technology accessible was short. The application packet for these funds would be disseminated to the 500+ local school districts within three months.

The director of MATP contacted the state director of special education. However, the special education division would not have jurisdiction over these funds; the funds would be distributed through the education technology division. Contact was made to the relevant people and through these contacts agreement was reached that a technical assistance packet for districts to assist them in obtaining accessible technology would be developed. This information would be disseminated to the local districts with a memo from the State Department of Education.

This memo was attached to a valuable technical assistance packet developed by MATP and the Missouri Technology Center for Special Education which included a *Quick List* and accompanying *Reference Notes* that comprehensively define Access Considerations for school districts purchasing educational technology. The *Quick List* included issues related to Basic Systems Access, Input Access and Output Access.

This information was disseminated through the Department's web site, the State's Internet contractor, through the Superintendent of Schools monthly mailing to district superintendents, districts' technology coordinators, and the district's special education director or other contact person. Included in the mailing was the number to which a call

could be made for assistance. Because of the information that was disseminated to the school districts by MATP, 20-25 calls were received related to accessible technology.

All of this was accomplished in a short time period. The MATP director felt that regional meetings to brief the districts on the application packet and accessibility issues would have been very beneficial. In addition, it was felt that much effort should be placed in training, information and technical assistance for educational technology personnel who are generally part of the regular education infrastructure.

The Missouri experience should give guidance and encouragement to advocates facing similar challenges in their states. Below is a list of steps that could be taken to build the road to accessible technology.

Action Steps

Local

1. Identify the key decision maker(s) in your local education system who make general procurement and information technology decisions. Make sure that they are aware of their legal obligations and your desire to help them meet these obligations.
2. Identify the key decision maker(s) in your local educational agency who makes AT decisions for students with disabilities.
3. Get them at the same table with well-informed disability community members to discuss building in access for individuals with disabilities from the start, *before purchasing decisions are made*.
4. Offer to help the schools to

develop accessibility guidelines that will ensure accessibility in newly purchased hardware and software as well.

5. Utilize existing accessibility packages developed by states.

6. Utilize Department of Education's Requirements for Accessible Software Design.

State

7. Be aware that lobbying/marketing by vendors can occur very high in the state education infrastructure or even within the Governor's office and toward the state legislators. Develop a targeted action plan that identifies the individuals and companies involved to educate them.

8. Identify the key decision maker(s) and individuals involved in the educational technology issues. Enlist their assistance in influencing local policy.

9. Advocates can attempt to secure the passage of state legislation embodying accessibility requirements, or seek to have accessibility requirements adopted administratively by procurement agencies.

10. Make sure that disability experts and advocates are involved at all phases.

Conclusion

Public education remains a local matter in this country. As information technology becomes a more integral part of public education, both regular and special education, it is essential that the procurement decisions made reflect concern for purchasing accessible technology for individuals

with disabilities. The challenge for advocates in this area of educational technology is to translate national technology priorities into local decisions and actions that include all children in a time frame that becomes even shorter as more technology is purchased.

Thanks to Diane Golden Ph.D., Project Director for her valuable efforts and assistance in the development of this paper.

Thanks to Jennifer Simpson, Policy Associate, UCPA Governmental Affairs Department for her assistance the development of this section

Thanks to Bill Newroe, Director; Consumer Technology Transfer Network (CA TN) for conducting the research for this paper and Steve Mendelsohn, Senior Policy Specialist, ATFSCP for his invaluable assistance throughout the development of this paper. §

Hi to all.....

I can always tell when it's time to change the format of *DIRECTIONS* and increase the size of the publication..... my space for communication with you gets smaller and smaller... :-)

I have an extremely valuable tip for you this month, very simple, straightforward and to the point..... **BACK UP YOUR SYSTEMS!** Now I suppose you're wondering why I'm giving you this tip.... well, of course you guessed it, we had a very nasty drive crash last week and we are in the middle of pandemonium! I won't go into the details here..... but just remember, it can happen anytime, so beware!

Well, looks as though I'm out of room already... Till next month!

As always.....

Janet

Conferences & Events

Date: October 16-19

6th Annual Florida Assistive Technology Impact Conference. (FATIC) Orlando, FL.
Contact: 813-781-1239;
104325.74@compuserve.com;
<http://ourworld.compuserve.com/homepages/FATIC/>

Date: October 23-25

14th Annual Closing the Gap Conference. Minneapolis, MN.
Contact: 507-248-3294;
<http://www.closingthegap.com>

Date: October 30 - November 2

The NORD/Exceptional Parent Annual Conference: Forum 97. Arlington, VA.
Contact: 800-999-6673;
<http://www.nord-rdb.com/~orphan> or
<http://www.familyeducation.com>

Date: November 9-11

New York State Association for Computers and Technologies in Education: Innovations '97, 32nd Annual Conference. Buffalo, NY.
Contact: 800-479-4830;
nyscate@aol.com

Date: November 12-16

American Academy of Physical Medicine & Rehabilitation (AAPM&R) Assembly. Atlanta, GA
Contact: 312-464-9700

Date: December 10-13

TASH Annual Conference. Boston, MA.
Contact: 410-828-8274; 410-828-1306 (TDD); Fax: 410-828-6706;
dmarsh@tash.org



MathPad by Intellitools

Novato, CA – IntelliTools® is pleased to announce the publication of MathPad™ - the easy-to-use math processor that enables students with special needs to do math computation directly on the computer. Students can use a computer to do addition, subtraction, multiplication, and division problems just as they would using pencil and paper. MathPad makes it easy to navigate through a problem, however, all calculations are done by the student. MathPad meets a broad range of student needs. You can use it with a mouse, the IntelliKeys® keyboard, or a switch. The program moves automatically between input devices so students using different devices can work at the same program. Overlays for IntelliKeys can be used with a keyguard for students who need assistance making more accurate choices. The program also offers a variety of font sizes, background colors, and speech options for students with vision problems.

Intellitools, Inc.
 55 Leveroni Court, Suite 9
 Novato, CA 94949
 Voice: 800-899-6687
 Fax: 415-382-5950
 info@intellitools.com

**Therapy Material BUILDer**

Wooster, OH – The Prentke Romich Company is pleased to announce Therapy BUILDer (TMB), a new software program which will allow you to make your own overlays, flashcards and even stickers using Unity icons. The TMB is simple and easy to use, and creates materials to meet your client's specific needs. Icons can be printed in several sizes. The TMB can be used to make partial overlays to introduce vocabulary a little at a time; to make stickers to teach targeted vocabulary; to make flash cards for a fun way to teach words and their icon sequences. Stories, sentences or teaching ideas can also be included.

Prentke Romich Company
 1022 Heyl Road
 Wooster, OH 44691
 Voice: 800-262-1984
 Fax: 330-263-4829
 info@prentrom.com
<http://www.dialup.oar.net/~Pprco/index.html>

Special Ed Public Domain SW

East Rockaway, NY – Technology for Language and Learning, a non-profit organization that distributes Special Education Public Domain Software, announces the availability of its new collection of quality public domain software/shareware for special education. MacPac I contains seven disks of over 70 programs which will add fun, learning and function to your Macintosh computer. Each disk contains a text file with highlights and instructions. Some of the main categories included are: Education, Early Learning, Games, Utilities, Extensions, Controls Panels, Fonts, Sounds, Graphics, and Bonus: Oscar The Grouch™ sings "I Love Trash" when trash is emptied.

All MacPac I programs require System 7 or higher on LC computers and better. All programs that work with the mouse will work with the Touch Window. Games can easily be adapted to work with single switch for cooperative play.

Technology for Language & Learning
 P.O. Box 327
 East Rockaway, NY 11518-0327
 Voice: (516) 625-4550
 Fax: (516) 621-3321
 ForTLL@aol.com

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