

FAMILY CENTER ON TECHNOLOGY AND DISABILITY



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The Experts Speak 2003

ARTICLES FROM ARCHIVED
2003 FCTD NEWS & NOTES ISSUES

Table of Contents

UNIVERSAL DESIGN: The Seven Principles <i>North Carolina State's Center for Universal Design</i>	1
UNIVERSAL DESIGN AND ACCESSIBLE TECHNOLOGY IN SCHOOLS <i>By Annette Cerreta, PACER Simon Technology Center</i>	1
CONNECTIVENESS AND SOCIALIZATION: Help is Available - if Parents Seek It Out <i>An Interview with Charlotte Thompson, MD</i>	4
TESTING ACCOMMODATIONS: Keep Kids With Learning Disabilities in the Picture <i>An Interview with Stephen N. Elliott, Ph.D</i>	7
THE INDIVIDUALIZED EDUCATION PROGRAM: Wonderful in Premise, Flawed in Practice <i>An Interview with Barbara Bateman, JD, PhD.</i>	11
UNIVERSAL DESIGN FOR LEARNING: A Recipe for Inclusion <i>An Interview with Michelle Doty, Assistive Technology Training Specialist</i>	15
THE CHALLENGE OF AT TRAINING: A Reformed Academic Takes It On <i>An Interview with Libby Cohen, Executive Director of ALLTech</i>	21
AT ASSESSMENTS: A Team Approach is Best <i>An Interview with Dr. Roger O. Smith</i>	25
SMART THINKING: Technology that Empowers People with Memory Loss <i>By Annette Cerreta, PACER Simon Technology Center</i>	31

THE PATH TO LATINO LITERACY: Special Needs Kids in the Linguistic Vortex <i>An Interview with Dr. Robert Jimenez, Literacy Researcher</i>	33
FINDING SUPPORT IN A NEW LAND <i>by Dao Xiong, PACER Center</i>	39
An Education Software Pioneer Stays the Course <i>An interview with Dr. Mary Sweig Wilson, Speech-Language Pathologist and CEO</i>	41

UNIVERSAL DESIGN: The Seven Principles

According to North Carolina State's Center for Universal Design, Universal Design consists of the following seven principles:

- **Principle One: Equitable Use**
The design is useful and marketable to people with diverse abilities.
- **Principle Two: Flexibility in Use**
The design accommodates a wide range of individual preferences and abilities.
- **Principle Three: Simple and Intuitive Use**
Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills or current concentration level.
- **Principle Four: Perceptible Information**
The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
- **Principle Five: Tolerance for Error**
The design minimizes hazards and the adverse consequences of accidental or unintended actions.
- **Principle Six: Low Physical Effort**
The design can be used efficiently and comfortably and with a minimum of fatigue.
- **Principle Seven: Size and space for Approach and Use**
Appropriate size and space is provided for approach, reach, manipulation and use regardless of a user's body size, posture or mobility.

Universal Design and Accessible Technology in Schools

By Annette Cerreta, PACER Simon Technology Center

Stephanie doesn't need a fancy adaptive device to use a computer at school. This 14-year-old with cerebral palsy takes advantage of built-in software features that make her computer accessible and user-friendly. Operating system accessibility features allow Stephanie, who has limited vision, to enlarge the text and select a high contrast color scheme to see the screen more easily. Stephanie

also has difficulty using her hands to type, so she uses Filter Keys, a feature that instructs the computer to ignore accidental keystrokes.

As technology such as computers, the Internet, educational software, and multimedia, are more commonplace in today's classrooms, it is critical that this technology be accessible to students with disabilities. Accessible education technology not only give students with special needs better access to technology used in schools, but it also promotes inclusion of students with disabilities in the general curriculum.

Accessible education technology incorporates principles of universal design. Universally designed products and services are created for use by a wide range of people with different abilities and disabilities. Most of us are familiar with universally designed building features, such as ramps and automatic doors, that provide access to people who use wheelchairs. Universal design concepts can be applied to educational technologies as well. For example, an educational software program that reads text out loud and provides captioning, accommodates the needs of a variety of learners, such as students with dyslexia and those who are deaf.

Universally designed education technology also provides increased access to the curriculum for students with special needs. An example of this is the availability of digitized instructional materials. A digitized textbook (such as a book on CD-ROM) can be loaded on a computer and modified to meet the needs of individual students. Thus, a student with low vision could increase the font size; a student with severe physical disabilities could turn the page with a switch or other alternative input device; a student with blindness could have the computer read the text aloud; and a student with dyslexia could click on a difficult word to see a definition.

In many cases, accessible educational technology may reduce the need for assistive technology. However, it does not eliminate the need to provide individualized accommodations for students with disabilities. If a student requires assistive technology, such as an alternative keyboard or a screen reading program, accessibly designed technology is generally compatible with these products.

The benefits of accessible educational technology are not limited to students with special needs. Just as parents with baby strollers benefit from curb cuts designed for people who use wheelchairs, accessible education technology is advantageous to students without disabilities as well. For instance, a PowerPoint presentation that contains audio description for students who are blind might also benefit students who are auditory learners.

Schools are beginning to explore strategies to implement accessible education technology in the classroom. This trend is spurred by Section 508 of the Rehabilitation Act that requires electronic and information technologies that federal agencies procure, develop, maintain, and use to be accessible to people with disabilities. While many questions have arisen as to whether this legislation applies to public K-12 and post-secondary institutions, many educational entities have chosen to adhere to information technology accessibility guidelines recommended by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board) <http://www.access-board.gov>

How can your organization learn more about accessible technology in schools? Contact the following organizations and websites for more information and resources, and check with schools in your area to find out what they are doing to make technology accessible to all students.

- National Center on Accessible Information Technology in Education (AccessIT)
<http://www.washington.edu/accessit>
- PACER Simon Technology Center
www.pacer.org/stc
- Center for Applied Special Technology (CAST)
<http://www.cast.org>
- EASI (Equal Access to Software and Information)
<http://people.rit.edu/easi/index.htm>
- TRACE Center
<http://trace.wisc.edu/>
- Microsoft Accessibility
<http://www.microsoft.com/enable>
- National Center for Accessible Media
<http://ncam.wgbh.org/>

CONNECTIVENESS AND SOCIALIZATION: Help is Available - if Parents Seek It Out

An Interview with Charlotte Thompson, MD

Dr. Charlotte E. Thompson has 40 years of experience in treating children and young adults and has become a highly respected authority on the socialization of children and teenagers with disabilities.. Dr. Thompson is Director of San Francisco's Center for Handicapped Children & Teenagers.

"Connectiveness is what life is all about," declares Charlotte E. Thompson, M.D., director of The Center for Handicapped Children & Teenagers in San Francisco. Explains Dr. Thompson, the parent of a child with a disability, "Socialization is one of the most important objectives in the life of a child with disabilities."

Helping a child with physical and/or learning disabilities achieve a high level of socialization, however, is a daunting task for any parent. "Speaking from experience," says Dr. Brown, the author of *Raising a Handicapped Child: A Helpful Guide for Parents of the Physically Disabled* (Oxford University Press, 1999), "I can say that raising a child with disabilities is the most challenging experience any parent can have." The weight of responsibility, she adds, is heavy and unrelenting, but support is available.

"There's so much support in the community, but parents must extend themselves to make the necessary contacts," she emphasizes. "Go to your church, synagogue or mosque. Join a support group." She advises, "Don't try to do everything alone."

The worst thing a parent of a child with disabilities can do, Dr. Thompson notes, is to fade into isolation, cut off from all sources of community support.

No Child Should Grow Up Isolated

"No child should grow up isolated, living life in front of a TV," she declares. Although enforced isolation does occasionally occur, Dr. Brown explains, "there is really no excuse for it." Dr. Thompson warns, "If you are a parent and are not finding ways to help your child socialize, you are not doing an adequate job of parenting."

Parents, she says, "should get the kids out and about." Go to playgrounds, swimming pools, parks, wherever other kids gather. "Don't permit kids with disabilities to cluster together in tight little groups in which they will be viewed by others, and themselves, as nothing but disabled."

Her best advice: "Let a child decide how and what he or she wants to do to have fun and how to do things. It's often surprising how inventive and innovative children can be when they are given the opportunity to decide."

Fight Every Step of the Way

To have fun in various recreational activities, "children must be provided with what they need." For example, explains Dr. Brown, children need to have the right clothing. "If they are unable to unzip their trousers to go to the bathroom, they won't have fun -and neither will their parents."

Along with the right clothing and equipment, children also need the right help from vigilant parents and others who have a strong interest in a child's socialization, independence and happiness.

For instance, she notes, "kids with speaking disabilities are afraid to talk, unless they get the right help. Get speech help! Parents may need to fight for that too. If you need to fight - fight! Fight every step of the way!"

Dr. Thompson remembers a recent incident involving a Vietnamese boy of her acquaintance. One of the boy's legs was deficient, from polio, but the young man refused to inform his school's physical education teacher of the disability. The result: the child received a grade of "D" from his P.E. teacher.

"The child's mother spoke very little English, so I elected to fight with the P.E. teacher and with the school." Her advice to parents in heading off similar problems: "Get children's pediatricians and general practitioners involved from the outset and keep them involved throughout a child's school years."

Finding the Right Summer Camp

Summer camp, she says, can and should be a rich and rewarding experience for children with disabilities, "but parents must do the research to make sure the camp they select is properly equipped to maximize their child's opportunities for fun."

Failure to be sufficiently vigilant, she warns, can produce unwanted and unfortunate results. For example, she notes, "I've seen kids go off to school without a wheelchair but return in one." Reversion to a wheelchair, she says, "was not caused by an injury to the child, but by litigation-sensitive camp officials who chose to confine the child to a wheelchair - and restrict the child's movements - rather than chance an injury and the possibility of a consequent lawsuit.

"As a parent," she cautions, "you absolutely do not want to send your child to a camp that restricts the child's movements and constricts his or her hard-earned independence and hard-won self-confidence."

Kids with non-progressive disabilities, she emphasizes, "need to find buddies they can hang with and keep up with."

Loneliness is Avoidable

All children dread loneliness, she declares, but for children with disabilities, loneliness can cause isolation from all that life has to offer. "Loneliness and isolation are avoidable," she says, "if parents make the effort to plug into support systems that are available in nearly every community." Connectiveness, she concludes, is often only a phone call, a meeting or a handshake away.

Dr. Charlotte Thompson is a graduate of Stanford University School of Medicine and a fellow of the American Academy of Pediatrics. She received advanced training in the diagnosis and treatment of neuromuscular disease from the University of London and the University of Southern California. She is an Assistant Clinical Professor at the University of California at San Diego School of Medicine. She is also the author of "Raising a Child with a Neuromuscular Disorder: A Guide for Parents, Grandparents, Friends & Professionals" (Oxford University Press, 1999).

TESTING ACCOMMODATIONS: Keep Kids with Learning Disabilities in the Picture

An Interview with Stephen N. Elliott, Ph.D

Dr. Elliott is Associate Director of the Wisconsin Center for Educational Research and professor of education psychology at the University of Wisconsin-Madison. His work has focused on the assessment of children's social skills and related problem behaviors and the development of alternative assessment methods for evaluating academic performance. He is the co-author of [Testing Accommodations: What We Know and How We Know It](#) and the author of [Testing Accommodations Lead to Better Assessment](#).

In his standard presentation on testing accommodations, Dr. Stephen Elliott, Associate Director of the Wisconsin Center for Education Research (www.wcer.wisc.edu), always opens with the same slide, an elementary school collage photo of fourth or fifth graders. He tells the audience, "To my knowledge, I've never heard a photographer who takes these photos ask kids with disabilities to step out of the picture." Yet, he adds, "that is what we've been doing historically with many large scale assessments. Sometimes, in testing kids, we ask those with disabilities to, literally, step out of the picture."

This happens for a number of reasons, Dr. Elliott says. Some of the reasons, he emphasizes, may be empathetic; "these children have been tested a lot, they struggle academically, we don't want them to carry a burden they're unable to bear so let's not put them through additional stress. Besides, they might lower the test scores of our class."

The Goal: 100% Accountability

When it comes to the issue of testing accommodations, Dr. Elliott notes, "there are many agendas." His agenda, he declares, is clear: find a way to include all students in testing in order to achieve 100% accountability.

According to Dr. Elliott, who is also a professor of educational psychology at the University of Wisconsin-Madison, from a legal and legislative standpoint, the purpose of testing accommodations is two-fold:

1. To facilitate participation and strive to develop an "accountability picture" that is accurate
2. To increase the validity of the interpretation of the resulting test scores

Explains Dr. Elliott: "If our goal is to find out how our kids are doing in school, we somehow must include all the kids in testing and provide those who need them with the most appropriate test accommodations so that the information we glean from these tests is accurate." A test, if presented

appropriately, can yield useful information about student learning areas in crucial areas such as math, reading and language arts.

Math: A Cloudy Area

He cites math testing as an area in which the validity of interpretation can be clouded. He asserts that many math items on tests administered to grades 4-5, and particularly in middle school grades, are "story items." Students, he says, "must read a lot of text; they have to read graphic materials and tables. If students do not read well, "the result on their math test will probably be lower than if a student possessed good reading skills."

The math test's publisher, Dr. Elliott explains, as well as those in states and districts who purchase the test, "want the math test to tell us about kids' mathematical reasoning, mathematical computation and mathematical communication vis a vis a written response. These math tests, he notes, "are not intended to be reading tests. Yet we know from much research that reading and math scores are correlated."

The goal of a testing accommodation, he insists, is to reduce the reading demand so that the resulting test score is a much more accurate indicator of math ability unclouded by reading difficulty.

On a math test, reading support is a typical accommodation for students with reading problems. However, Dr. Elliott cautions, "that doesn't mean that everything has to be read to the student, although it might mean helping children read through some of the difficult words as well as getting them started in terms of direction so that direction-following and material-locating does not become part of the test."

Like Using an Entrance Ramp

Dr. Elliott explains that test publishers want to target reading or math skills, whereas test-takers need a way to gain entrance to the test, "sort of like using an entrance ramp to gain access to a building." The goal, he adds, is "to help the test-taker get into the test and be able to respond to the test without undoing, or complicating," the target skills that the test publisher wants to assess.

Testing accommodations, he declares, "are all about access skills, such as attention span and minimizing distractibility." For test publishers, "the goal is to eliminate many things that a disability might bring to bear on test, things that students without disabilities would not have to think twice about."

Stress is generally believed to be another factor that can impact test scores for those with learning disabilities. However, his revealing research results, he says, can frame advice for parents concerned about the stressful nature of proficiency testing on children with learning disabilities.

"When they emerged from a test, we asked kids with and without disabilities, on index cards, to rate the stress levels they'd experienced, with 1 being stress-free and 5 indicating the highest level of stress. A 3 rating, for example, would indicate moderate stress, 'I felt nervous and anxious.'" Kids

without disabilities gave an average stress rating of 3.1. Those with disabilities averaged a 3.2 stress level rating.

"My point is that kids with and without disabilities find testing about equally stressful. There are measures that can be taken to reduce stress, but not too much, because research tells us that a moderate level of stress is not necessarily counterproductive." In fact, Dr. Elliott adds, "moderate stress might actually be helpful in test-taking."

Time Accommodation: More Psychological Than Real

Many parents believe that increased test-taking time can result in improved test scores. Dr. Elliott's research, he says, largely dispels that belief. "The bottom line on what we've learned about time is this: The benefit of time is more psychological than real."

In fact, he notes, time is the most frequently requested accommodation.

Most research on the time affect has focused on college students, Dr. Elliott notes. His studies, however, concentrate mainly on elementary school children.

"There are differences between the two groups of children," he explains. One difference is that college-bound students have a range of disability narrower than their younger counterparts. Secondly, the two tests serve different purposes. Time is actually a more important factor on college admission tests. It is college admission tests, he says, that parents remember from their own testing experience.

"If you want to make predictions about who will do well in college, you find the students who can get the questions right and answer them quickly. It adds to the predictive validity of the test. However, that's not the purpose of educational accountability in K-12. There, complete answers are needed. The issue of time needs to be unpacked so that parents understand."

"Do Math Quickly" is Not the Goal

Instead, in electing to focus on the typical test administered nationwide for accountability purposes, "we found out some important things about time." Chiefly, test publishers are not building tests that are "speeded tests" for purposes of large-scale accountability. That purpose, declares Dr. Elliott, "would be inappropriate because, if you read state standards - and I've read standards in 35 states - you will not find any that command "do math fast" or "read quickly." Time is not an outcome variable that is being measured. "Yes, we do have time limits," he adds, "but those are management issues for the test provider, the teachers and the administrators who set the test up."

Tests, he says, are currently being designed that can be completed by 90-95% of student test-takers in the allotted time. "It's unfortunate that many parents don't yet realize that tests are not designed so that kids are unable to finish them." That doesn't mean, he adds, "that some kids won't need extra time, but that's usually because someone is assisting them with the test, which slows the test

process. For example, a teacher may be assisting more than one student. In this case, extra time is probably needed. Otherwise, it is not."

Not a Listening Comprehension Test

Having the reading test read to students is another oft requested accommodation, Dr. Elliott says. "Nine states allow the reading test to be read. I'm against that, unless the reading test is actually a listening comprehension test. When you read the reading test to a student, you are no longer testing their basic reading skills, you are, instead, testing their listening comprehension skills."

The objective of most reading tests and most state learning standards, he emphasizes, is to discover if children can read process symbols, turn them into words that have meaning, integrate that information and then respond.

Stay in the Picture

To keep your child in the picture and for overall guidance on testing accommodations, Dr. Elliott recommends the following rules of thumb for parents of children with learning disabilities:

1. Be knowledgeable about testing accommodations
2. Encourage your child to be part of the decision-making process about accommodations, if possible
3. When testing is finished, encourage teachers to reflect on accommodations that were effective and those that were not. Document your findings, so that next year teachers have a record of that information.

THE INDIVIDUALIZED EDUCATION PROGRAM: Wonderful in Premise, Flawed in Practice

An Interview with Barbara Bateman, JD, PhD.

Our lead article is a revealing interview with Barbara Bateman, Professor Emerita at the University of Oregon, attorney, educator and skillful and forceful advocate for special education for more than five decades. Her experience has traversed the lifespan of special education, from its backwater beginnings to its current high profile in the education community and American society.

"The theory of an IEP, in which every child with disabilities has an individualized education program based on his or her unique needs as determined by a thorough evaluation, is a wonderful premise," declares Barbara Bateman, Ph.D., J.D., professor emerita, University of Oregon. The IEP, in theory, is what special education is all about, she says. The IEP, she notes, "could not have been better conceptualized." In practice, however, according to Dr. Bateman, the IEP has not yet lived up to its promise.

The Elephant in the Living Room

The disparity between promise and practice, she explains, is the result of a longstanding philosophical schism in the educational community. About 20 years ago, she notes, education professionals "began pretending that, as a group, kids with disabilities were not cognitively different from kids who did not have disabilities." That concept, she vehemently declares, "is sheer insanity and has been carried to ridiculous extremes." The unwillingness among her many of her peers to recognize the concept as flawed has created an "elephant in the living room -- to which the field [of education] has, so far, paid no attention."

Re-read IDEA

In an effort to deny differences between students with disabilities and those without, "the field has misread the Individuals with Disabilities Education Act (IDEA) and wants to put the general curriculum into an IEP when, in fact, it should be the specialized aspects of a child's education that go into an IEP."

By definition, she adds, the IEP is a special education document. "It's an individualized plan, but there's nothing about the general curriculum that's individualized. That's what makes it a general curriculum!"

Dr. Bateman has a simple solution to this dilemma: "Everyone in the schools who helps make placement and program decisions for students ages 3-21 ought to go back and re-read IDEA." In

rereading the legislation, she cautions, "they should pay particularly close attention to what IDEA actually says about placement - that every child is entitled to an individualized placement decision made as a team and chosen from the full continuum of alternative placements."

The law, she points out, "has not changed in that regard. To put every handicapped child into the same setting without any consideration for that child's unique needs is, to me, a misunderstanding of what IDEA requires and what [the phrase] 'least restrictive environment' is all about."

Denied: Individualized Services

The sole focus of the IEP, Dr. Bateman emphasizes, "should be on the unique parts, the special ed parts," of a child's education. "Unfortunately," she adds, "as a result of this misunderstanding by the inclusionists who are pushing the general curriculum as if it were the be-all and end-all, special ed kids are denied the very individualized services that the IEP is supposed to be about."

According to Dr. Bateman, "There are many, many kids in special ed who do have cognitive disabilities and cognitive differences that must be taken into account. There are times in their young lives, she adds, when such children "really need" specialized, excellent instruction. "I believe that getting those children the quality of education they need is infinitely more important than where they get that instruction from."

She adds, "I also believe that our desire to minimize the differences between children who have differences and those who don't has operated too often to deny the kids with disabilities the services they need."

Needed: A Better IDEA

The eventual salvation of the IEP, she declares, lies in its original conception. "I'm content to live with the IDEA definition of special education, that special ed is "specially designed instruction to meet the unique needs of the child." She notes, "It's not a perfect definition, but legal definitions seldom are; I think it's good enough that we can live with it." The IDEA definition, she adds, "includes methodology and delivery of service that's different from what is provided to regular ed students through their general curriculum."

If Dr. Bateman could make one change in IDEA legislation, that change would require that every IEP meeting "must begin with the group developing quick consensus on what a specific child's unique individual needs are at that point in time" and that the IEP in its totality would address those specific unique needs. That single alteration in the existing legislation, she insists, "would restore IDEA to what its intent was back in 1975 when it was first passed."

Milestones for an Aggressive Advocate

The passage of IDEA represented a major milestone in Dr. Bateman's five decades as an aggressive advocate for individualized, child-centered special education. The IDEA's IEP component, as a premise, was another milestone as was the Americans with Disabilities Act, "even with all its limitations."

Each of these milestones offered encouragement to children with learning disabilities and to their parents. Also encouraging, she says, is another non-legislative trend that Dr. Bateman has seen emerging in recent years. "I think the field has begun to pay attention to research and has begun to use more effective, proven, data-based, scientific methodologies."

If her observation of this emerging trend is accurate, she notes, it means that "the field has begun, finally, to pay attention to what's effective in working with children with disabilities."

Assistive Technology: A Major Milestone

In order of significance, Dr. Bateman gives the development, implementation and universal availability of appropriate assistive technology equal billing with the individualization of education plans.

However, she says, there is a downside to the ascendancy of AT: "There are far too few special ed professionals who are up to speed on assistive technology and who are able to make the kind of judgments our kids are entitled to" regarding the matching of technology to each child's unique needs. It appears to her that "a lot of the professionals in the public education system who are technology buffs" are not actively involved with special needs children.

A Bridgeable Chasm?

The reason for the lack of adequate involvement by technology experts with special education programs, she explains, is symptomatic of a chasm within public education where the philosophies of special ed and "regular" ed professionals are in frequent opposition. The chasm, Dr. Bateman claims, first appeared more than 40 years ago. She explains that her opinions regarding the genesis of a widening of this chasm are based not on hard research but instead on a "personal hunch" and anecdotal evidence.

From 1960 through 1980, she alleges, "the people who went into special ed were mainly hard science-minded, much more data-based and research-based," whereas professionals who chose regular education tended to be "more nurturing, more interested in intuitive discovery and creativity." That gap in education style and philosophy continues to exist, to the detriment, she claims, of special needs education.

"I began writing about this in 1962. It struck me as an odd situation where the two sides just can't get together." Little has changed to bridge that chasm until recently, she says.

"Tremendously Positive"

Now, however, 55 years after she entered the field, a glimmer of hope has appeared in the form of the trend toward a greater emphasis on "hard science" as a determinant of children's futures and education policy.

"In my optimism, I see that trend emerging. I'm excited about it because special ed professionals will never give up their data-based orientation and the only way to bridge that chasm is if schools are compelled to adopt data-based, effective, proven methods."

The No Child left Behind Act, she declares, is a step in the right direction. "While there's much in that legislation that strikes me as absurd, there is also much in it that is good." One potentially positive aspect of the legislation, she notes, is the theoretical requirement that reading instruction must have a scientific basis, as determined by the National Panel on Reading. That, she says, is "tremendously positive."

UNIVERSAL DESIGN FOR LEARNING: A Recipe for Inclusion

An Interview with Michelle Doty, Assistive Technology Training Specialist

Michelle Doty's second child contracted spinal meningitis. Life changed drastically foand Michelle immersed herself in her son's condition, becoming a knowledgeable parent and an aggressive advocate for his cause. She returned to the University of Idaho to earn a Masters degree in Special Education. The title of her thesis: The Belief and Attitudes of Pre-Service General Education Teachers Towards Inclusion. For the past nine years Michelle Doty has been Project Coordinator and training specialist at the Idaho Assistive Technology Project (IATP) and a strong supporter of the universal design for learning concept as a powerfully positive force in classroom inclusion.

Michelle Doty envisions the full implementation of a design for learning that includes no students out. The only current stumbling block to nationwide implementation of universal design for learning: how to include teachers in?

“We know that universal design features, such as curb cuts and automatic doors, not only help those with disabilities. In fact, they help all of us. The concepts of universal design in architecture play the same in the classroom.”

According to Ms. Doty, “We know that all children learn differently. We know that all children, whether or not they have a disability, have their different avenues of gaining information.

“If we think of a universal design for learning in the same way that architects think of universal design for living and working,” she adds, “as parents and educators we then realize that if we set up an environment that is conducive for all children in that classroom, we are providing a broader opportunity for all children, those with disabilities and those without.”

Not Familiar Enough with AT

To Ms. Doty, the prime issue of concern, and the major stumbling block to universal design for learning implementation, is the public's general unfamiliarity with assistive technology, specifically its uses and benefits for children in an inclusive classroom setting.

Achieving universality, she explains, begins within the general education community. Special education teachers, she notes, are trained in the specialized instruction of individuals.

“If we want to go universally,” she says, “if we want to investigate ways to more effectively prepare all teachers to look at their classrooms in a more universal way, we need to begin with general education teachers at the pre-service level.”

Part of that pre-service orientation should include “multiple ways of delivering instruction.” Ideally, she explains, following orientation every teacher, special and general education alike, “should walk into their classroom and announce, ‘However I set up my instruction, I’m setting it up universally.’”

Simplicity of Design

Setting up a universally designed classroom “can be done fairly simply,” Ms. Doty insists. Most classrooms today, she observes, employ Internet access for the bulk of the curriculum. Existing Internet connections “give teachers the capability to provide universal design in the delivery of instruction.”

With an Internet connection, all that is required is the configuring of the classroom so that all kids have that access. Universal design configuration should include different computer stations, acceptable computer access and appropriate software and hardware on computers so that all the students in the classroom can access the same information on the Internet.

SurroundSound in the Classroom: An Unanticipated Benefit

Ms. Doty points out that the FM systems are becoming more commonplace throughout the US. In the FM system, a teacher wears a microphone that feeds her voice into speakers strategically placed around the classroom. “All kids, in any part of the classroom, can clearly hear the teacher.”

The FM system, she says, is effective with children who have been identified as ADHD, as well as those with hearing impairments. “It’s been proven that kids with ADHD have the ability to attend better if they have more of a one-on-one relationship with their teacher.”

The more inclusive classrooms become, she notes, the better teachers, with AT devices like the FM system, can meet the needs of hearing-impaired children. “We found that the more AT accommodations were made for hearing-impaired kids, the more ADHD kids benefited. It’s truly been a very positive result that was totally unanticipated.”

Emerging AT Innovations: Multiple Means of Instruction

When Michelle Doty scans a universal design for learning classroom, “I see that teachers are using multiple means of delivering instruction.” Teachers, she observes, “use the Internet, universal computer access, devices such as the FM system, allowing children experiencing reading and writing difficulties to use software programs that encourage the achievement of a higher literacy level.”

Other programs featuring voice prediction and voice output “help, in a concrete fashion, to show the kids the literacy/writing process.”

For struggling readers, text can be made available electronically “so a student who has difficulty reading hard information can participate on an inclusive level by sitting at the computer while the rest of the class reads from books.” That student, she adds, “might wear headphones, which give the child the voice output that enables her to follow along in a story.”

The ability to pick up words as they are being said reinforces the reading process, Ms. Doty stresses. As the words are said, the student at the computer can view them on the screen.

Universal Design vs. Pure Inclusion: The Difference

Voice output is important, she emphasizes. Word prediction programs are effective tools. “Everyone can benefit from these devices, which are not just for students with disabilities.” When a teacher considers devices that enhance inclusion, she explains, “You want a teacher to utilize programs that help all students, so that these instruments are not seen only as specialized tools that are limited in utility to students with disabilities.”

That emphasis, she declares, represents the primary difference between the universal design for learning concept and pure inclusion, when specialized tools are made available only to children with disabilities.

“Of course there is AT that benefits the individual,” she states. “We know that AT must meet kids’ individual needs and make certain that their specific needs are met.” However, when considering inclusion and universal design “it’s more important to think in terms of ‘How can I teach all the time? How can I provide enough variety of information so that all kids can be effectively reached?’”

Ms. Doty is encouraged that the reauthorization of IDEA and the enactment of No Child Left Behind legislation have made inclusion increasingly predominant in classrooms across America. She hopes that “we will also see universal design for learning achieving equal prominence.”

A Design for Harder Times?

In an era of dire financial difficulty for many states and localities, are universal design concepts, with their heavy AT component, feasible? Michelle Doty believes they are. “The school has to believe in the utility and essentiality of overall the universal design for learning concept. If a school buys into the universal design philosophy it will be easier to place its implementation in the forefront of budgetary considerations.”

Practicality and efficiency is built into the universal design for learning concept in that it benefits all students, not just a few, that its uses are general, not specialized. Forward planning, she emphasizes, should encompass the universal design attributes of classroom equipment under consideration for purchase.

“Teachers need to ask the question, ‘How can I make sure that whatever equipment we are able to purchase is universally designed?’ If you’re considering a new curriculum or at buying new textbooks or adopting new programs, look at the features that the program or the text or the content and make sure that it is universally designed.”

Such an approach is far easier now than just a few years ago, she contends. Curriculum and content designers “are more apt to have developed their programs electronically, in text format and probably have a web companion program that enhances their content. Multiple uses are built in.”

Implement at the Outset

Ideally and practically, she asserts, universal design concepts should be implemented at the outset of a school year and not applied incrementally. For example, she notes, “ when purchasing new programs for the classroom or for the new tech lab, teachers should automatically think about the universal design aspects of the programs they intend to put on those computers, whether it’s voice output, or programs that actually enable the student to talk to the computer and interact with it, or word prediction programs. Make sure the software programs have the flexibility to convert their programs for different types of users.”

Such programs, she explains, “are already built into the hard drive of a computer, but teachers need to know how to manipulate the computer to help students of different abilities use the information” these programs contain.

Awareness of AT’s critical role in a universal design for learning is key to early implementation. Although pre-service orientation is efficient and effective, in-service veteran teachers must also be made aware of AT and its benefits within a universal design for learning concept, Ms Doty asserts. With in-service teachers obligated to undergo prescribed training to maintain their teaching certification, Ms. Doty recommends that orientation in the universal design approach be incorporated into that training. “Usually, and unfortunately, the kind of in-depth universal design training general education teachers need is given only to special education teachers. What’s needed is to combine training for special ed and general ed teachers to include not only training in classroom technology but in assistive technology as well.”

Result for Schools: Money Saved, Quality Enhanced

In the long run, she insists, it is safe to say that adopting a more comprehensive training approach will save money and enhance the overall quality of education that all students receive.

“It’s the same approach as providing long term care to the elderly. If you do preventative maintenance or preventative medicine and you’re staying ahead of the game, in the long run you’ll save money for those who must pay those costs,” she observes.

It is the difference, she adds, “between helping a senior citizen remain in their home, with the use of technology, and having that senior citizen placed in a nursing home, where costs are tremendous.”

Properly trained teachers, she asserts, will be equipped with multiple means of delivering instruction. Using Howard Gardner’s instructional theories, which claim that all children learn differently and that teachers need to meet each child’s kinesthetic, auditory, visual and tactile modes of learning, by utilizing general ed and special ed teachers in tandem and armed with a universal design for learning approach, “I think we could meet the needs of 70% of the children before those kids ever walk into a classroom.” For the remaining 30%, she says, special, individualized instruction is needed.

The Ideal Classroom

To Michelle Doty, the ideal classroom would consist of a teacher equipped with a Smart Board and a computer that would project the Internet. The students, she explains, “would have Internet access that shows on the Smart Board in front of the entire class.” Teachers, she adds, “would develop instruction using programs like PowerPoint, programs that teachers can develop and project off the Smart Board.” For example, she explains, “teachers could use streaming video.”

When she was in elementary school, she remembers, “it used to be a treat to see a video in class, or the teacher would bring in a TV and we’d watch a news clip or a movie.” Now, she says, “teachers and students can interact with all of the above by using the Internet, a Smart Board and computer access programs.”

In that way, she notes, “the teacher is delivering information auditorially and visually; he or she is not simply standing in front of the class delivering instruction in a way that students may or may not be tuned into.”

It represents a way for “teachers to get information to all their students, so if you a student is unable to participate with the rest of the kids perhaps that child can be seated at a computer workstation using a program that highlights words as the teacher delivers instruction.”

Advice to Parents: The Laws are Behind You

“I’ve been a parent far longer than I’ve been a special education professional,” Ms. Doty declares. As an educator and as a parent, her advice to parents is this: “Gain as much information as possible; realize that the laws are behind you.” IDEA, she asserts, “states that all students receiving special education and who have an Individual Education Plan (IEP) must consider AT.”

What parents often misunderstand, “through no fault of their own, because they have not been provided with sufficient information,” is that team members are not allowed to say, “This student is not physically disabled so AT will not benefit him or her.”

Parents and team members need to realize, Ms. Doty declares, “that there is a whole world of technology out there that can help, not only kids with physical disabilities, but kids with learning disabilities, cognitive disabilities, cognitive, vision and hearing impairments.”

Parents, she emphasizes, should obtain as much information as possible “about the technology that already exists in our society.

“Know your resources,” she warns. “Know your rights.”

THE CHALLENGE OF AT TRAINING: A Reformed Academic Takes It On

An Interview with Libby Cohen, Executive Director of ALLTech

Libby Cohen spent her years as a special education professor at the University of Southern Maine donating her energies to assistive technology training. Eventually she evolved from interested and dedicated academic to Executive Director of ALLTech, a nationally recognized center for the provision of training, consultations and technical assistance in AT, Internet accessibility and universal design in education. ALLTech is part of the Spurwink Institute, a not-for-profit organization based in Portland, ME. ALLTech is based on the campus of the University of Southern Maine in Gorham. Dr. Cohen's current domain also includes the Virtual Assistive Technology University (VATU). Libby Cohen earned her undergraduate and Masters degrees from the University of Connecticut and her Ph.D. from Boston University.

For Libby Cohen, the challenge of helping to make educators more familiar with AT and Web-based technology superceded her desire to remain an academic. "I'd been theorizing about technology and AT as a professor, but my work with ALLTech encouraged me to leave the academic life behind and take on the challenge full time" as ALLTech's Executive Director

"As a professor working with pre-service teachers, I saw how reluctant some were to get their feet wet" in the AT and technology pool. Some schools, she explains, seem "slow to get on the Internet," much less adopt assistive technology.

"Some teachers seem to have a lot of difficulty figuring out how to integrate computers," she adds. "AT is almost another planet for a significant number of them."

A partial solution, she has learned, is working directly with families to introduce them to the value of AT and Internet technology. Working with families, "seems to be a great impetus for teachers to become actively involved" in acquiring knowledge about AT, universal design and Web-based technology and to acquire the requisite training in each area.

In-service teachers, she notes, are probably more prone to get involved in AT training than their pre-service counterparts. The reason for the disparity, she explains, "is that in-service teachers are the ones who are in the field, who have experienced first-hand the value of AT and other integrated technology in the classroom "whereas teachers in training aren't there yet."

Getting Families Involved

Getting families involved in acquiring AT and Internet technology for special ed and general education classes requires considerable outreach. “We work very closely with parent organizations throughout Maine,” Dr. Cohen states. “We do a lot of pro bono work for these organizations. We make presentations to them. We write letters for their newsletters. That seems to make parents much more aware of what we are advocating and how it will benefit their kids.”

The next step, she adds, “is that parents then go to their children’s schools and ask those schools to get AT for the kids who need it and are entitled to it.”

Laptops for All

Maine is the first state in the Union to provide laptops to all seventh graders. In school year 2002-03, every Maine seventh grader – and every Maine seventh grade teacher – received an iBook laptop. In the coming school year, eighth graders and their teachers will also receive laptops. This advance, she says, “has provided a great stimulus” for teachers in the field – and for administrators – to commit themselves to AT training and universal design orientation as well as to Internet-accessible computer training. ALLTech now provides training to Maine school administrators statewide.

Along with the distribution of iBook laptops to seventh and eighth graders and teachers, she adds, Maine has been fortunate enough to receive several grants from the Bill and Melinda Gates Foundation that have training components.

One of the Gates grants, she notes, directly spurred administrator participation in training programs. The grant assigned a certain number of points to administrator AT/technology training participants. Those who amass sufficient points can select items of personal technology.

A Training ‘Carrot’ for Administrators

These awards, Dr. Cohen declares, “have been an effective carrot for administrators” who might have been more reluctant to participate in training workshops. “Through this program administrators have experienced first hand how technology is its own reward.” By making technology “personal at the outset, administrators can experience for themselves how the same technology might benefit schools, students and teachers.”

Purchasing and efficiently deploying AT and Internet technology can be major challenges for any school district and its administrators. Dr. Cohen and ALLTech have been developing concepts that enable administrators to gauge new technology’s impact on various systems within a given entire school district and on the district as a whole.

The effort, she says, “has been very intense but very rewarding.” ALLTech’s “systems change” evaluation approaches have been in effect for just a year, she says, “but we’re seeing them employed by school districts all over Maine.”

AT: “We Have a lot of Work to Do”

Teachers in Maine schools, she notes, find the Internet technology “very exciting.” However, in the acceptance of assistive technology, “we still have a lot of work to do.” Dr. Cohen says she has learned that “we have to pave the way [with some school districts] by using publicity, email, personal contacts, newsletters and co-presenting at conferences in order to develop a presence.”

ALLTech, she explains, offers a variety of workshops in schools and in conjunction with other organizations “so that we become known as a center that actively promotes and administers effective and innovative AT training programs.”

Humble Origins

Libby Cohen and ALLTech started together in 1989 when she was a professor. Their origins were humble. After initial funding from small state technology center grants, ALLTech grew slowly, but steadily, from year to year. Fortunately, she adds “we’ve also benefited from a couple of good national grants.” ALLTech, she insists, “has begun to parlay those grants into a national presence, which is our long-term goal.”

ALLTech, she says, “has pushed beyond our original Maine franchise to encompass nearly all of the New England states plus others. International interest in her organization, she adds, “has been very exciting for us.”

Strategies for All Teachers, All Students

ALLTech workshops and online training emphasize both AT and universal design. Explains Dr. Cohen, “When we consult on kids with disabilities our focus is on assistive technology, but then we always, always talk about universal design and its benefits. She adds, “We provide strategies for all teachers so they can help all students.”

Universal design’s inclusive approach, she notes, “is very welcome in some districts. Other districts, she continues, “don’t even know where to begin.”

When asked how a district ought to be begin, she replies, “We think we’ve developed a conceptual foundation on which we base our approach as we work with teachers. The ALLTech approach “presents the overview and then we show specifically how the AT and UD fit into that. It gives administrators an anchor, a starting point, a frame of reference they may not have had before.”

On the Road, and VATU

Teachers and administrators can participate in ALLTech workshops at the organization’s facility, but its presence is further enhanced by workshops held on the road elsewhere in Maine as well as in neighboring New Hampshire, Vermont and Massachusetts. Appearing at national conferences has helped ALLTech reach a wider audience, as have third-party endorsement articles that have appeared in national publications.

ALLTech’s Virtual Assistive Technology University (VATU) has enhanced the cause of educator AT training by attracting many teachers and administrators, some from outside the U.S. The virtual

university was created through a grant from the U.S. Department of Education three years ago. The grant's purpose was to develop a six-course certificate in assistive technology.

VATU, she explains, "has been wonderful because we've been able to experiment in the ways in which we wanted to experiment in order to develop an online presence, to determine the online component of it, how we could best stimulate online learning and what the most effective course content ought to be."

Although the grant is nearing its conclusion, she says, "VATU courses will simply become ALLtech courses that we will continue to offer."

Raising the Comfort Level

For many VATU participants, Dr. Cohen explains, "taking a course that is totally online is a big switch, yet I think our evaluations have been good." Good evaluations are always heartening, but VATU's good evaluations by its course participants are especially heartening to Dr. Cohen. "The interesting thing about those who participate in VATU courses is that these individuals are mainly not those who are accustomed to being online!"

According to Dr. Cohen, online training is appealing to VATU participants "because they don't have to commute and because we actually built in a component to help participants become acclimated to online technology before course content is addressed."

Every VATU course, she adds, includes an instructor and a tech expert. "It's obviously a labor intensive approach," she admits, "but the grant has allowed us to do it and it has proven very effective with first-time online participants by raising their comfort level significantly. It paved the way for teachers and administrators who might have otherwise have experienced some anxiety when they signed up for their courses."

Dr. Cohen has acknowledged the reluctance of some pre-service teachers to receive online AT training. To ease their reluctance and to increase online participation, a VATU "spin-off" was created in close conjunction with the University of Southern Maine's pre-service teacher certification program. "We're enjoying success in our effort to accommodate pre-service teachers," she declares. "They're learning what we all learn about AT training, online or off, and about technology in general: that it's illuminating, necessary and definitely the wave of the future."

AT ASSESSMENTS: A Team Approach is Best

An Interview with Dr. Roger O. Smith

Dr. Roger Smith is Director of the Center for Rehabilitation Sciences and Technology at the University of Wisconsin-Milwaukee in the College of Health Sciences where he serves on the faculty in the college's occupational therapy program. Dr. Smith brings a background from the social sciences, health sciences and engineering to his practice in mental health, pediatric and adult rehabilitation and to the assistive technology evaluation program affiliated with the Trace Center. Dr. Smith has spent 20 years researching measurement related to disabilities and has recently focused on issues specifically surrounding the measurement of AT outcomes. He administers Project ATOMS (Assistive Technology Outcomes Measurement System), which is examining the need for better AT outcomes measures, exploring new methods of assessment and investigating the issues of device "abandonment."

In assistive technology, an army of one is often not enough.

Throughout the decades, numerous coaches of all sports at all levels have told their charges, "There is no "I" in team." Though not an athletics coach, Dr. Roger O. Smith, Director of the Center for Rehabilitation Sciences and Technology at the University of Wisconsin-Milwaukee, is also a strong proponent of the team approach to assistive technology assessments and evaluations.

Dr. Smith believes that four functional perspectives are essential in an assessment and evaluation:

1. The prospective AT user
2. The family and/or professionals who work with the child on a day to day basis
3. The diagnostic professional
4. The AT expert, i.e. speech pathologist, occupational therapist (OT) or physical therapist

An Augmentative Communications Team

Using augmentative communication as an example, Dr. Smith explains, "If one person does an evaluation, he or she may not have the depth and breadth of background to be able to hit all the critical areas." In order for augmentative communication to work, he declares, "the user has to have good seating, positioning and mobility." In addition, he cautions, "Somebody who needs augmentative communications may have other physical problems as well."

A prospective user of augmentative communications "usually needs a wheelchair system, which requires an expert in that specialty to be an assessment team member." Then, he explains, "there's the whole interface piece involving how a user is going to control the technology – will it be by a multiple switch, a keyboard or an expanded keyboard? There's a wide array of inputs and outputs

when you add the human interface to these devices.” The human interface, he notes, “usually requires someone with a little more background in aspects of physical disability.” A communication interaction and language skills professional, preferably with a speech/language pathology background, is often needed to complete the augmentative communications assessment and evaluation team.

In order to perform a comprehensive evaluation for a child with a severe need, impairment or set of impairments that require augmentative communications, a single assessor/evaluator is insufficient, Dr. Smith asserts. “You often need a speech/language pathologist, an occupational therapist (OT) or a rehabilitation engineering professional.” In the application phases of the assessment, a special education or general education teacher ought to be included. If the augmentative communication device is also to be utilized at the prospective user’s home as well as at school, the child’s parents and entire family become part of the team.

Getting the Whole Picture – Despite Funding Constraints

“You have to have all these different perspectives and experts at the table during the evaluation or you fail to get the whole picture,” Dr. Smith observes. Unfortunately, he adds, “that concept too often runs in opposition to funding, because the more people you have at the table the more an assessment or evaluation costs.” Funding imperatives, he insists, should not deter educators and AT professionals from pressing school districts to employ adequate resources in performing assessments.

Declares Dr. Smith, “It’s our responsibility to persist in explaining to administrators that if the objective is to perform a sufficient assessment in a complex situation, the appropriate participants must be included.”

Obviously, he explains, not every assessment is complex, “but there is a point at which many assessments become too complex for one or two individuals and others need to be invited.” Therefore, he concludes, “it makes sense for those additional services to be funded.”

The Team Concept: Its Use is Piecemeal

The willingness and ability to employ assessment teams varies by school district. “Many districts who choose not to employ assessment teams actually have no choice,” Dr. Smith claims. “Often, in remote or poor districts, the expertise is just not available.” For example, he adds, “a research-laden district usually has an assessment team available, but a rural district simply doesn’t have the capability.” In fact, he notes, “many rural districts consider themselves fortunate if they have even one person who even knows what AT is.” Other poor or rural districts, he explains, “may have a team that visits just once a month.”

Is More Funding the First and Last Solution?

Funding is not the sole reason why school districts do not utilize the team concept for assessments. For administrative purposes, Dr. Smith notes, some districts choose not to utilize assessments. “If an

administrator does not understand how essential a team is for AT assessments, he or she may try to achieve the same results with consultants by bringing in one or two people who can do parts of an evaluation. The administrator announces, 'They're expert consultants; they can do it! The local team can follow up.'

Sometimes, Dr. Smith claims, "the consultant approach can work." Ironically, however, the occasional success of that approach is "unfortunate." According to Dr. Smith, administrators experience a little success, see an easy, less expensive solution to a problem and then announce, "it worked once or twice so let's do it that way all the time!"

Achieving a Nimble Approach

Part of the solution to employing an effective team approach, he asserts, lies in "creating a system that can be very quick-footed in terms of how many people need to be involved in an assessment and then be able to pull in those people very fast as soon as their expertise is required. "But don't begin the process with them," he cautions. Instead of a full team complement, he advises, "start with just one or two people." For a "complex" situation, "you can't start with just one or two." Automatically, "you begin with two or three team members, each with different perspectives, but be prepared to ramp up fast and add more to the team" when and if needed. Using this approach, "means that you can't wait two weeks or another month or longer to get someone involved. You have to have these individuals at your fingertips, and that's difficult in many environments."

The "M" Team: IDEA Set the Stage

Across the nation, there appears to be no systemized, mandated approach to team AT assessments, nor is one likely, short of additional federal legislation. The absence of that legislation does not deter Roger Smith's enthusiasm for the team concept and its practicability, however.

"What's great is that IDEA and its predecessors really set the stage for the multidisciplinary ("M") team." Since IDEA, he explains, the team philosophy has become ingrained in children's AT assessments, particularly in special education, even more so than in medical or vocational areas. "I think people generally understand that [the team approach] is a good thing."

The credit, he insists, goes to the framers of IDEA who stated their intent to emphasize the team approach.

The Assessment Information: What to Do with It?

AT professional training programs "should spend more time on the information we get from these assessments and evaluations," Dr. Smith declares. "We're moving now from the status quo, where we stress intuition, experience and personal judgment, to determining how we collect the data and figuring out what the data means and how it can best be used."

According to Dr. Smith, many professionals in the field "come out of disciplines where we mainly use the data collected for documentation purposes in order to defend our decisions." That data "may not affect our decisions" because those decisions are based on the evaluator's best judgment and

intuition. “That’s a valid purpose for data use, but you’re really not putting the data to its optimum use.”

As evaluators move toward evidence-based practice, the data collected “ought to be compared with evidence gleaned from previous research and from other individuals in the same circumstances.” Evaluators need to answer the question, “Do we want to simply do what was done before in similar situations, or does our team want to do something different based on the new data we have?”

As a field, “we are just beginning to become acquainted with evidence-based practice.” A positive sign of things to come, he notes, is that this summer, for the first time, “a conference focusing on evidenced-based practice took place, in Pittsburgh.”

Advice to Parents: Get Information from Anyone Who Knows Something

Parents considering an AT assessment should begin by obtaining information from “anyone who knows something about assistive technology.” Parents, he advises, “can go to a rehab center or a special ed team, both of which are good places to start.” From that initial point of contact, “the referral process should be kicked off.”

Next, parents must understand that during the early process of exploration that they may encounter an individual or a team “that may not know very much.” In fact, he adds, “the team may not know who to refer a family to.” Should that occur, “families then have to investigate alternatives and learn who are the true AT experts in their community.” The setting in which parents find the best service delivery referral may be either educational or medical or perhaps an independent living facility. Dr. Smith warns that it is important for a family not to become locked into any one specific setting for referrals “because in any given district, one setting may be in tune with AT but the other two service delivery systems may not be.”

At first glance, it might appear that families are on their own, that there is no shortcut to seat-of-the-pants exploration. “Wrong!” exclaims Dr. Smith. “There is a shortcut. If the first person contacted by the family either is knowledgeable or provides good referral sources, the family may have stepped into a really good situation.”

One-stop referrals are not unusual nationwide, he insists. “There are cities, districts and states that are much better apprised and prepared to help families just beginning the assessment process. Family members need to ask themselves, “Are we in one of those venues or not?”

Advice to Organizations: Know Your Local AT Experts

Organizations assisting families embarking on the assessment process should feel obliged to research and seek out strong potential referral sources. Says Dr. Smith, “It’s really important for these organizations to know where the AT experts are in their communities, or outside their communities, because some communities don’t have many – or any.”

The expert, he explains, “may be a supplier down at the local medical equipment facility who has a certain level of expertise.” He adds, “It might be a special ed teacher in a specific school or a team at a nearby rehab center.”

The occasionally haphazard family referral process could be made smoother, he asserts, “if local AT people could get together once a year or every six months” to meet each other, to build a network.

“I’m a strong advocate for the network building approach to help families,” Dr. Smith declares. “Some leadership may be required in this area to begin maintaining contact list or a resource list” that can be easily accessed.

Ideally, he says, “you’d like a way to rate the AT professionals in the area, maybe giving them one to five stars.” For a variety of reasons, such a ratings plan is not feasible. Still, however, “if a parent calls a facility, the professional to whom a parent is speaking can strongly recommend someone. That’s probably the best rating system around, but you can’t incorporate it into a formal list.”

More AT Specialists: A Blessing and a Curse

There will be more AT generalists in the years ahead who will be able to direct families toward the best referrals, Dr. Smith predicts. Yet the trend toward specialization that has fragmented and changed many professions, such as medicine and engineering, will also impact the AT field, he warns. In the future, he says, the team assessment maybe be blessed by, and sometimes cursed by, the accelerating trend among AT professionals toward specialization. “The augmentative communications profession, for example, has already begun to tighten up; there will be mobility specialists, computer access specialists, job accommodation specialists” and others.

AT “is becoming so big that in order to become an expert, you can’t be an expert in AT anymore – you have to be an expert in some subset of AT.” The evolution of specialization, he predicts, “is going to cause a problem – because AT is already seen as a specialty by the outside world. Can you have specialties within a specialty?”

Will specialization negatively impact the configuration of assessment teams? Perhaps, he predicts, it will create the need for still more team members to acquire seats around the assessment table, thereby causing some cost-conscious districts to constrict team membership.

Dr. Smith is not fearful that specialization will make assistive technology a field in itself. “It’s really a second field for most people who already have a profession.”

Through the Looking Glass

Using IDEA to guide their assessment efforts, families, educators, AT professionals, diagnosticians and administrators are usually on their own as to how to assess the need for assistive technology for specific children. Will that change? Will the process be made more systematic? Gazing into his crystal ball, Dr. Smith sees a solution forged in the national political realm along partisan lines.

From a partisan standpoint, he explains, the Republican side will likely stick to its laissez-faire guns. “Republicans may say, ‘Let’s not get involved, let’s let the consumer decide, let’s not mandate an M team or the inclusion of anyone on a team with any specific credentials.’” They may say, “Here’s the money; you go find whomever you need.”

He predicts that Democrats are more apt to say, “We don’t think an individual is able to find the right [AT] person. We need to provide some guidance. Let’s just say that these [assessment and evaluation] teams must be made available and, yes, administrators must provide the requisite assessment services.”

That said, he adds, “AT and rehab services have been very bipartisan” in the support they have garnered, whereas special education, special services and special professions have been very partisan. “AT has been enamored by both sides of the aisle, which love nifty technology.”

If AT becomes closely associated with special ed services, however, “we may see a partisan effect.” On the other hand, he concludes, if AT becomes associated more closely with rehab engineering, “which is outside the educational model and more closely aligned with the medical and vocational models,” the case for AT and the team assessment concept “will continue to strengthen regardless of which party is in power.”

Smart Thinking: Technology that Empowers People with Memory Loss

By Annette Cerreta, PACER Simon Technology Center

While we may joke about not remembering our own phone number or where we last placed the car keys, memory loss is no laughing matter for a child with a cognitive disability. Memory loss can have a devastating effect on a child and his or her family, dramatically altering the landscape of everyday life.

Memory strategies that most of us rely on to carry out our daily routine, such as checklists, calendars, and post-it notes, may not provide adequate support for the child with a cognitive disability and memory loss.

When typical memory compensation tools and strategies aren't enough, families might consider more sophisticated cognitive aids. Recent advances in computer and telecommunications technologies have given rise to a number of powerful, portable devices that offer an alternative to the pen and paper strategies and other low-tech approaches.

These devices are often off-the-shelf technologies that many people use everyday, such as personal digital assistants, pagers, wristwatches, and cell phones. Children with cognitive deficits can learn to utilize these everyday technologies to compensate for memory and other cognitive deficiencies.

Karen's Story

Karen, a 15-year-old girl, sustained a head injury in a motor vehicle accident when she was ten years old that resulted in severe cognitive deficits, including significant memory loss. Although her cognitive skills improved dramatically over the five years after her accident, she continued to struggle with keeping track of time and activities. Karen kept a written daily planner, but often forgot to use it or misplaced it.

Karen's mother consulted an occupational therapist who suggested that Karen try using a wristwatch called the Timex DataLink. This watch merges electronic daily planner technologies with a wristwatch alarm system. Multiple alarms were set to alert Karen when she was suppose to attend to a task, such as taking her medication, making a phone call, or turning in a homework assignment to her teacher. When the alarm sounded, Karen could read a message on the watch, such as "Call home now" or "Take your medication" that would prompt Karen to carry out these activities. Karen was also less likely to misplace the watch since she wore it on her wrist.

Karen was anxious about using the watch at first, so her therapist taught her how to use the most

essential features only. She also taught Karen's mother how to program the watch for Karen, so that Karen only needed to respond to the alarms and messages throughout her day in the beginning. This approach minimized Karen's stress, and she began to appreciate how the watch helped her to stay on track by reminding her to do important daily tasks. After a few months of training, Karen was ready to start using other helpful features of the watch, such as the to-do list, schedule planner, and phone book.

Karen's story is a good example of how off-the-shelf technologies, such as an electronic watch or personal electronic organizer, offer the added layer of support a child with memory loss needs to function more independently.

Families should also be aware of technology aids designed specifically for persons with cognitive deficits. The TimePAD by Attainment Company, for example, is a small, pager-sized device created for people who need reminders throughout their day. The device is programmed by a caregiver to play pre-recorded voice messages at pre-set times, such as "It's 7:30am – go outside to wait for the school bus." The main difference between this device and a regular pager is that it speaks the messages outloud instead of displaying them in a text format. This could be beneficial for children with reading difficulties, visual impairment, or those who respond best to auditory cuing. The device holds up to 72 seconds of speech divided among five messages. It cost about \$30 and comes with a belt clip. For more information contact Attainment Company, www.attainmentcompany.com

Strategies for Selecting the Right Cognitive Aids

Before acquiring a cognitive aid for your child, families should give consideration to several factors during the selection process to assure a good match between their child's needs and a cognitive aid device.

- Always take into account the personal characteristics of your child, including their physical, social, cognitive, and sensory level. For instance, a person who is not able to understand the usefulness of a beeper alarm system would not be a good candidate for it's use.
- If your child has a functional limitation, such as limited fine motor skills or low vision, look for devices that have larger buttons, larger print displays, or other accessible features.
- Choose devices that are user-friendly and simple. Complicated devices lead to user frustration and device abandonment.
- Set realistic expectations about what the device can do for your child.

THE PATH TO LATINO LITERACY: Special Needs Kids in the Linguistic Vortex

An Interview with Dr. Robert Jimenez, Literacy Researcher

An associate professor at the University of Illinois at Champaign-Urbana, Dr. Robert Jimenez has concentrated his research on the strategic processes of successful and struggling Latino students from linguistically diverse backgrounds. He has implemented two formative experiments documenting the responses of low literacy Latino students to “cognitive language instruction that is language-sensitive and that makes use of culturally relevant text.”

*“Literacy is the path to freedom.
There are many kinds of slavery and many kinds of freedom.
But reading is still the path.”*

Frederick Douglass
1818-1895

They hail from Mexico and from nations large and small in Central and South America. They are willing to risk much to come to the United States and carve out a new life. They are Latinos. Upon arrival they discover that a major key to prosperity, and to acceptance, in their adopted land lies in their ability – and their children’s – to read, write and speak English. Achieving literacy in a language as complex as English is a struggle for many Spanish-speaking families. Families of children with disabilities are faced with the even greater challenge of how to understand and effectively interact with school systems and special education professionals with whom they cannot easily converse. Enter Dr. Robert Jimenez, who has devoted his professional life to finding ways to accelerate Latino literacy in English. Two studies form the foundation for his efforts. Both studies examined literacy progress among Latino children and early teens in two communities near Chicago.

The Idea: Discovering which Students are struggling with Literacy

Recalls Dr. Jimenez: “The reason I selected the venue I chose was that I was somewhat familiar with the community from my days as a teacher back in the early 1980s. I had an idea that I wanted to explore there.”

The essence of the idea, he explains, “was to teach some literacy strategies that I had developed during my dissertation research.” Those strategies, he adds, “seemed to be identified with higher performing bilingual Latino students and distinguished them from students that were performing at a more average level or lower.”

His initial desire “was to see if I could teach strategies to students who were struggling with literacy and then attempt to document the results that would occur. When I went to the school I had it in my

mind that the administrators and teachers would have a sense of which students were struggling and which were performing at higher levels.”

Two Groups of Latino Students: U.S.-Raised and Recent Arrivals

“The first study encompassed Latino students in grades 6-7. It turned out, however, that there were two different populations that were really interesting to me.” The first group, Dr. Jimenez explains, consisted of students that had been identified as having learning disabilities, primarily associated with literacy, and were 3-4 years behind grade level in literacy performance. All the students in this group, he notes, were U.S.-raised Latinos who continued to struggle with literacy. The second group consisted of students who had arrived in the U.S. within six months to one year. The members of this second group were also 3-4 grade levels behind in literacy. Because they knew no English, all literacy training was conducted in Spanish.

This arrangement, he explains, was different than he had anticipated. “I thought initially that I would be working with kids at intermediate grade levels. I wanted to try something that would allow me to experiment a little bit and adjust what it was that I was doing as I implemented intervention. That intervention was focused, obviously, on students’ literacy and on their understanding of what literacy was. My objective was to get a feel for strategies they employed that might be useful when looking for ways to enhance their overall repertoire of strategic processing when they dealt with text.”

Alternative Literacies: Language Brokering

Dr. Jimenez also investigated alternative literacies because “I was very much interested in the strategic processing of kids as they interact with text.” More recently, he notes, “I’ve become interested in the uses for literacy that kids possess but of which schools are typically unaware.”

Among Latino students, language brokering is a major form of literacy to which researchers are paying more attention. Language brokering, he explains, consists of students translating textual and oral language from English to Spanish for their parents. “A researcher at Northwestern University has actually demonstrated that the more often students engaged in language brokering, the higher their scores on tests of academic achievement.”

According to Dr. Jimenez, language brokering works this way: “Typically, it’s a situation where the parent does not speak English and the child acts as an intermediary between a textual source or someone in authority from the society at large, like a medical professional, an attorney or a school administrator. It’s a very common activity that has been pretty much overlooked.”

What intrigues Dr. Jimenez is the likelihood “that language brokering may be at least as beneficial to children’s language and literacy development as more traditional activities like storybook reading and writing are in the homes of mainstream middle class families.”

Dealing with Language in Sophisticated, High Stakes Ways

Children who broker language, he asserts, “are dealing with language in very sophisticated ways.” For example, he explains, children are often asked to translate income tax forms, rental agreements or bills. “The stakes in this kind of language brokering are very high. For a Latino child and his family, getting language brokering wrong can have devastating consequences.”

It is inevitable, he observes, that children acting as language brokers are asked by their parents to do more than translate. There are instances when children are asked by parents “about the meaning of the actual content of what they are translating, which can put those children in an adult position. They are asked to become authorities on the document they’re translating.”

Dr. Jimenez wonders, “if that kind of responsibility, that kind of pressure, facilitates or supports the child’s academic progress. Just the idea that they learn to interact with adults possibly gives them a social strategy for dealing with adults at the school level that other kids might not have.”

Cultural Brokers, Too

In many communities, he notes, “Latino kids who are rapidly becoming American kids must deal with immigrant parents who continue to have one foot – or both feet – in their countries of origin. “These kids then become cultural brokers as well,” Dr. Jimenez asserts. “You’ve got these adults who want information right away. The adults are accustomed to getting the information they want, through their children, as fast as they did in their native countries.”

The parents, he declares, “are pressuring these kids to perform. There’s no question that this causes stress on the part of the child.” The children who become effective brokers, however, “can learn an awful lot about two languages, and about literacy. Kids from mainstream backgrounds never have to deal with this.”

In his writing, Dr. Jimenez says he attempts “to make parents aware that those kinds of activities might be occurring in their students’ homes.” Teachers, he cautions, “can’t just assume that these brokering activities are, in fact occurring in all Latino homes. Teachers must investigate a little bit. Should an investigation reveal that brokering is occurring, there are some very specific strategies teachers can employ to make connections between the classroom and the home in ways that let the child see that what he knows has real value in the literacy process.”

Once the teacher knows for certain that a child is acting as a language broker, strategies can then be devised to help the child gain more proficiency at brokering “because I don’t think the kinds of documents the kids are brokering at home show up too often in school settings.”

Special Needs Children: Facing an even Greater Challenge

In an environment fraught with stress and frustration, Latino special needs children striving to achieve literacy face challenges above and beyond those faced by their general education peers. According to Dr. Jimenez, “Probably one of the more frustrating aspects of looking at the area of Latino kids with special needs is that so often the schools make the children that way.”

Citing his Chicago project, Dr. Jimenez remembers that “the kids who had been born and raised in the U.S. had been to 4-5 placements, different kinds of program settings,” by the time he encountered them in grades 6 and 7. “They’d been in the all-English language general ed class, bilingual classrooms, English as a Second language (ESL) and special ed classrooms.” Sometimes, he recalls, children had been shuttled back and forth between the various classrooms. “The children had been in one classroom and then returned to his or her previous classroom because the teacher didn’t really know what they could do.”

An accurate assessment is “absolutely critical” to a special needs child’s literacy progress, he declares. Frequently, he says, “it wasn’t always clear to me that a child actually had a learning disability, but he or she was behaving like they had one in the settings in which they found themselves.”

They Disappear from the Classroom

There sometimes appears to be a disconnect regarding special education in some Latino communities where the concept remains nearly unrecognized, as opposed to middle class suburban communities where special education has been entrenched for decades.

Dr. Jimenez acknowledges the appearance of such a disconnect and believes it is a result of the way special education may be regarded in countries of origin.

“I just returned from Mexico and my guess is that special ed is not a central category that people there tend to use in the same way it is used here in the U.S. The families come here with very little experience in special ed.”

Dr. Jimenez says that, according to his colleagues in Mexico, “when a child struggles with literacy the school finds a way to move the child out of the classroom.” In Mexico, he notes, special education teachers and programs tend to be clustered around Mexico City, the nation’s capital.

While in Pueblo, Mexico, Dr. Jimenez examined special education at a semi-private public school. “The school provided special ed services to their kids but the school’s primary mission was to meet the needs of students who were not well-served by public schools.”

In Mexico, he emphasized, “There are not nearly enough schools and teachers to serve all the kids who are there, both general and special ed.” Many Mexican schools, he observes, “work double shifts, a morning shift and an evening shift, and there’s still not enough space.” It is little wonder, he declares, that special needs children get short shrift.

Language, he claims, may be another reason why special education has generally failed, so far, to take hold in U.S. Latino communities. “You have to look carefully at how a school is communicating [about special needs literacy] to the families of its students.” For communication to be effective, he asserts, “schools need to speak the same language as the families.” Some schools make a strong effort to communicate in Spanish. Others do not. The changing patterns of immigration, however, may begin to result in the improved communication that is needed.

New Neighbors

The migration of Latino families to rural and semi-urban settings across the U.S. is increasing, Dr. Jimenez claims. His own university community in Champaign-Urbana is experiencing a marked upswing in Latino arrivals. Other communities in downstate Illinois are experiencing similar increases. He estimates that the rate of Latino migration to these communities nationwide, particularly in Georgia, North Carolina, Tennessee, and even Nebraska and South Dakota is five times that of larger cities. "These communities don't yet have much in the way of resources, trained personnel or anyone who has any experience in working with these populations at any level."

In these communities, assessment is the best place for special education to gain a needed foothold. However, he warns, "doing an assessment of a child from a linguistically diverse background requires a professional who knows something about language."

The best situation, he notes, would involve "someone who can assess the child not only in their native language but would also be able to determine the child's competence across two languages" and simultaneously assess competence in both. Ideal though it may be, "that approach can become complicated and difficult."

Some research, he declares, claims that "kids sometimes have a vocabulary in both their languages that looks very unusual – or unusually low – compared to a monolingual speaker of either of the languages." Yet, "if you look at both of them together, what you see begins to approximate what one would expect for a child of that age." However, he cautions, "If you don't have people who are able to conduct the assessment with the knowledge of both of the child's languages, you can come up with some very skewed results."

The result, he explains, is that children are misplaced. "It amounts to a double denial of services. We don't want to over refer, but we don't want to under refer either. This is one of those issues that hasn't quite gotten across yet because people tend to fear making judgments or evaluations when they are not trained in the area of bilingual assessment."

Language is the Solution

Language, Dr. Jimenez declares, is at the center of any long-term assessment solution. Unfortunately, he notes, there are only a few programs that produce assessment professionals who are proficient in both Spanish and English. He recalls, "When I was a teacher in Chicago, bilingual assessment professionals were in constant demand." Now, he asserts, with so many Latino families far from traditional population centers and ever more remote from assessment resources for their children, the demand is stronger than ever.

In non-urban locales, he observes, "the default is that kids with literacy deficiencies are put into special ed." Depending on the competence of professionals in school special education programs, he explains, "some of these kids might be provided with appropriate forms of instruction." Unfortunately, however, the child may not understand anything that is going on in the class."

Typically, he adds, “what we see in bilingual education is that in about two years the child will understand enough English to understand what is happening in the classroom.” However, he cautions, “While the child is learning the language he or she often misses most of the content.” That dilemma, he says, is the foundation of the need for bilingual education. “You want to teach the child English while, at the same time, he or she does not fall behind in math, science, social science and literacy skills.”

With special needs kids, he declares, “one way to deal with the situation is to have someone who can communicate with the child in the child’s native language to check the child’s understanding of concepts and information.”

“Sheltered” English

Another way to help resolve the literacy dilemma, Dr. Jimenez insists, is via “sheltered English” instructional techniques. According to Dr. Jimenez, for a teacher, sheltered English techniques can include speech slowdown, employment of gestures, referring often to visuals and utilizing objects in instruction, writing down words so that the child can visualize the language as well as hear it. Later, the student is allowed to ask question in his or her native language.

In Champaign-Urbana, he notes, schools hire parents who often possess teaching credentials from their country of origin. These former teachers are hired, not as teachers, but as teacher aids, which reduces funding pressure. A literacy student can spend 30-60 minutes daily with the teacher’s aide so that the aide can evaluate the child’s grasp of the material and respond to questions in the child’s native language.

The Role of Assistive Technology

Assistive technology (AT), according to Dr. Jimenez, has had little impact so far in efforts to improve the state of Latino literacy. “As far as I can see,” says Dr. Jimenez, “the only AT contribution consists of some translation software.” For most children, he adds, the immediacy of the need to achieve a sufficient level of literacy as fast as possible shoves AT into the background in favor of a workable bilingual approach that is unthreatening to a society at large for which bilingual education has fallen out of political favor.

Yet, he says, there is a way to inject a bilingual approach into the learning of a second language. “For some reason, it’s hard to convince curriculum companies” and others to grant those who are learning English as a second language the same bilingual support traditionally provided to English-speaking students who are learning a second language. “When a native speaker takes a foreign language class here in the U.S. in middle school and above, they always get companion materials that have English language support.” Latino students, he asserts, “could be working in English but would be provided with resources that will support their learning of English through their native language.”

Bilingualism, he explains, “is just another tool that enables a teacher to connect with a child. Sometimes it doesn’t work, but often it does work and ought to be used and accepted as a viable tool.”

It Won't Go Away

“The population of non-English speakers --- specifically those who claim Spanish as their first language, won't go away,” Dr. Jimenez predicts. “Some of the political opposition to bilingualism has in its collective mind the notion that this population will just melt away, that no one will acknowledge that it's there or that bilingualism can simply be abolished by legislative decree. But the kids will still be there, the kids who need to achieve literacy, the special needs kids, they'll be there – and their parents may be voters – a fact to which political parties may be paying more attention than they have in the past.”

A bipartisan bill in Congress aimed at legalizing current immigrants “may be a de facto recognition of a new reality, a new recognition of this truth: that life is better here in the U.S. and as long as it continues to be better here immigration will increase.”

Finding Support in a New Land

by Dao Xiong, PACER Center

As the number of refugee families coming to the United States from Southeast Asia has increased in recent years, there has been a growing need for outreach services that better equip them to work with agencies and obtain appropriate services for their children with disabilities. PACER Center (Parent Advocacy Coalition for Educational Rights) in Minneapolis is helping to meet that need through its Southeast Asian Project.

I joined PACER as a parent advocate in 1992 to provide information and resources to Southeast Asian families. Before becoming a parent advocate, I had many painful years raising my daughter who has mild mental retardation. I failed to access information and resources offered by PACER and others because I had high hopes that one day she would become an intelligent child, ready to face a challenging life and succeed in school. As a result of that experience, I wanted to help other Southeast Asian parents become more informed and better prepared as advocates than I had been.

In my role as parent advocate, my first step toward reaching Southeast Asian families of children with disabilities has been to connect with community organizations as well as with families that I know. One way I reach out to parents is through brochures and fliers translated into their language, and through a Twin Cities television talk show broadcast for the Hmong community in the community's own language. The language barrier is a major obstacle that prevents families from accessing resources, so providing translated information to organizations and individuals has been very important.

I have found that the single most successful outreach strategy is the home visit. During the visit I have a personal chat with parents and other family members about their concerns, which often include refugee life, clan relationships, their child's disability, educational laws related to their child's schooling, and effective decision making that will result in a successful service plan that enables the child to reach his or her maximum potential.

PACER also offers parent training workshops and individual consultation that use a culturally appropriate approach to provide concise, accessible, step-by-step information for families. I offer parents helpful information about raising a child who has developed differently from others. I do not mention their child's disability directly, but instead speak to them about federal legislation such as the Individuals with Disabilities Education Act and the state special education rules so that parents know exactly what their rights and responsibilities are under the law. In addition, advocacy skills are developed and encouraged so that parents are in the position to oversee and monitor all services that meet the needs of their child. The more knowledge about their rights and the better the communication, the higher their spirits as they deal with their particular situation.

In-service and consultation for professionals about cultural difference are also offered. Tension between parents and service providers is often unresolved. There is frequently no understanding of the parents' concerns on the part of the provider, and the parents often are unclear about what their child is to receive and what the provider can give. Sometimes parents talk about services available, and professionals talk about service funding, which results in a negative interaction. Other times, parents feel that they don't want to be viewed as draining services, so they fail to express their concerns. One of the most important keys to success for providers serving Southeast Asian families and others from varied backgrounds is training in cultural sensitivity.

The success of Southeast Asian families in receiving the services and supports to which their children with disabilities are entitled and which they desire and need depends much on their own ability to overcome educational and cultural conflicts, their acquisition of new beliefs and effective communication patterns, and, most of all, their ability to handle stress and cultural change. I have found that the parents' own level of education and their length of time in the United States have the greatest effect on their involvement in their child's education. Those who have little education expect to have little involvement.

Their culturally-based belief about respect is an important factor when it comes to accessing services; many families believe that parents are parents, and professionals are the experts in education. This makes it harder for them to access and advocate for services. As time passes and they become more adapted to American culture and more informed about their rights and responsibilities in relation to their child's education, I believe they will come to see that they are the experts about their children. Professionals need to be sympathetic and sensitive to the fact that parents need time to recover their positive self-image, build their own strategies to make better decisions, and be a positive influence on their child's education.

An Education Software Pioneer Stays the Course

An interview with Dr. Mary Sweig Wilson, Speech-Language Pathologist and CEO

First came a Masters in speech pathology and audiology at Boston's Emerson College and then a Ph.D. in communicative disorders at Northwestern and a lengthy career in academia as a speech/language pathologist. In 1982, while a professor at the University of Vermont, she and a graduate student named Bernard Fox, in an effort to get their education software published, founded Laureate Learning Systems, Inc., a company that produces software for children and adults with special needs. Dr. Wilson and Mr. Fox continue to run Laureate while she remains a practicing speech-language pathologist with more than 30 years clinical experience in language intervention. Mary Sweig Wilson received the 1996 TAM (Technology and Media Division, Council for Exceptional Children) Leadership Award given for "exemplary vision and leadership in the application of technology and media for children, youth and adults with disabilities."

"Bernard [Fox] and I and Laureate have never been in the entertainment business," asserts Dr. Mary Sweig Wilson, CEO and founder of Laureate Learning Systems, Inc. "We have remained true to our mission. Our material has always been theory and research-based. We feel that is the only way that [education] software can be truly effective in changing children's language, cognition and reading for the better."

According to Dr. Wilson, the creation of educational software has always been a serious endeavor grown even more serious with the advent of state standards. Although curricula are generated by states, most software programs are not generally designed with a specific curriculum in mind. The responsibility to integrate the software into the curriculum-driven day is the teacher's. When a teacher has one or two special needs students in his or her class, the responsibility is even heavier. Given the responsibility and the curriculum constraints imposed on teachers, Dr. Wilson was asked, what does a software company like Laureate do to make it easier for a teacher to embrace, not reject, education software?

Content Based on Theory and Research

From the beginning, she declares, "we've had this vision that the way to improve outcomes is by using theory- and research-based content in our software and by using research-based procedures to collect data and document our progress." In fact, she adds, "with the changes in having to relate

special ed kids to state standards, we now have website correlations to state standards for each Laureate product” which make the software more easily “embraceable” for teachers.

At first, she explains, “it was regular educators who had to follow the curriculum as mandated by state standards. Over time,” she continues, “it’s been required in states that teachers had to indicate how their special ed students were working toward the standards.” In other words, she adds, “even if teachers had to make adaptations for their special ed kids, the state wanted to know how those kids fit in.”

She asserts that special education students “have not had to meet the standards in the same way that regular education students had to meet them.” Even before Bernie and I founded the company, long before we had state standards or thought about how special ed kids would fit in curriculums, back when people were only talking about Individualized Education Plans (IEPs), we believed that there was a three-step way of ensuring that the kids were making progress.” Those steps, she explained were: 1.) To have content based on theory and research; 2.) To have procedures based on instructional technology and research that demonstrates which procedures are most effective; 3.) To have data collection that clearly shows the children’s performance. “We’ve been using that three-step approach since 1982,” she declares.

Teacher Training is Available

Laureate conducts teacher training for its products, she notes. “We’ve been involved in two RIAT@NASDE training sessions this past year and have developed an assistive technology language assessment software package that we are incorporating into our training.” The purpose, she says, is to make it possible for professionals who are not AT specialists to make assessments. “We believe that a lot more people, if they understand how to use some AT, can, in fact, do assessments and not have to rely totally on individuals trained in AT, because there are just not enough AT specialists to go around.”

Dr. Wilson adds: “We are constantly asking ourselves, ‘How can we get more people, maybe not trained [in AT] at the highest level, to become able to determine how a child is functioning even if the child is non-verbal?’” If there is no way of utilizing standardized tests to assess non-verbal children, “then our software should be able to place those children.” The Laureate software, she adds, is especially helpful in assessing children between birth and age three who are non-verbal, an often difficult task for professionals in the field “who haven’t been trained to assess these kids.”

“I Don’t Come from Business”

So far, she asserts, she has received no negative reaction from the field to her contention that non-AT specialists can be trained in assessment, or to Laureate’s integrity. “There’s always the apprehension that the field may think, ‘All [Laureate] cares about is selling its products, not evaluating kids.’” In fact, she adds, “that’s been my fear all along, but, in my favor, I don’t come from business and I am not a business person.” What she cares most about, she emphasizes, “is delivery of service to children and adults. That’s my goal. That’s my only mission, and I fulfill that mission better than I fulfill my responsibility as a business person.”

A full staff of professionals is available at Laureate to answer customer queries and to provide advice. “My partner and I are speech-language pathologists. Another associate, Adam Wing, who has been performing assessments, is not a speech-language pathologist but is very well versed in our software. He’s a graduate of St. John’s College in Maryland and he has the kind of high-powered liberal arts background that that institution emphasizes.” Dr. Wilson regards herself and her staff as “a resource, not only for our own software but for other software as well.” She reveals, “We frequently refer customers to non-Laureate software and are happy to do so.”

No “Home Versions” of Software

The majority of the names in the Laureate database that can be identified by profession are speech-language pathologists and special educators, Dr. Wilson notes. Parents also comprise a large percentage of Laureate software users. “We have a large number of parents as customers because we offer a 50% discount to parents and family members,” she says. “Unlike some companies that make home versions of their software – not a full-fledged version -- that they sell for full price, we offer parents a 50% discount. A company should not sell a ‘junior’ version of what works best.”

Dr. Wilson also does not approve of arranging to have specific software named in a child’s IEP. Although Laureate has included goals and objectives with its software, Dr. Wilson does not approve of writing specific products into IEPs. “I think professionals should be free to fulfill the goals using the best available materials. A professional should never be locked into specific software. A child may not like what is written in.” It is a difficult issue, she admits, “because professionals want to be sure that a child is using software.” For example, she adds, “we’ve said through the years that most of our products are designed to be used in the home and the classroom without the special educator or the speech pathologist present.” That approach, she continues, “is a way to deliver individualized services 5-7 days a week, thereby expanding the length and breadth of individualized services available to a child.”

Parents, she says, “almost always want a proviso written into the IEP that says, ‘Student will use tutorial software designed for language intervention.’ There are ways to get specific language written into an IEP, without specifying brand names, that will guarantee that the child will receive software but without mentioning the name of a specific product.”

Necessity is the Mother of a Business

The spark that resulted in the founding of Laureate Learning Systems was struck in 1979, Dr. Wilson recalls. She was serving as director of the University of Vermont’s Eleanor M. Luse Center for Communication Disorders and acting chairman of the university’s Department of Communication Sciences and Disorders, where Bernard Fox joined her that year as a graduate student. “Both of us had always believed that the price of computer-administered instruction would drop steadily as technology evolved and that it was logical to utilize that technology in order to extend the services of pathologists and special educators.” Until the introduction of microcomputers, however, the use of mainframes had proved too expensive, “but we had research that [indicated] computer-administered instruction was effective. We knew from the 1950s and 1960s that computer-assisted

instruction would work.” She and Bernard Fox quickly planned intervention applications to be delivered via computer. Unfortunately, she recalls with a chuckle, there were senior colleagues “who doubted that kids would ever use computer-assisted instruction.”

Software publishers, she recalls, shared the academics’ skepticism. She and Fox could not convince publishers to produce their software. “Our only recourse was to go into business, but we knew absolutely nothing about business!” All the duo knew, she remembers, “was that we had to get our material published because that software was not going to help anyone unless it could be published and disseminated.”

Government funding, through small business grants, eventually gave the fledgling software publisher the breath of lasting life. NIH grants enabled the company to develop next generation software while small business grants from the federal government “enabled us to bring in bright, capable, dedicated researchers from distinguished academic settings,” including Tom Roper, a linguist at the University of Massachusetts and Jill DeVilleurs, a psychologist-linguist at Smith College, Dr. Wilson’s alma mater. The ability to attract top-level research professionals, she notes, “shows that just because you are a business doesn’t mean you don’t have strong connections to the academic research community.”

“We Haven’t Taken Full Advantage”

As a profession, she declares, “we haven’t yet taken full advantage of research-based software with our special education children to the extent that we can.” The deterrent to taking full advantage, she believes, is this: “As easy as our software is to use, it still requires that the user should be able to choose a program, choose the activity in the program, determine how many students to advance, how many to drop back – all of the elements that have to do with content and instructional technology.”

When software is prescribed for use in the home or classroom, she emphasizes, “it means that an aide or a parent has to be instructed.” This procedure, she believes, acts as a deterrent “because professionals are busy; they don’t have that kind of time.” New generation software, she claims, “has what we call ‘optimized intervention,’” requiring only that an aide input a child’s name, the appropriate program “and press go.” The program, she says, automatically adjusts the training based on the child’s responses. “Now the speech pathologist can say, for example, ‘Do first verbs’ and the aide can put the child on first verbs and that’s that.”

The new generation, she continues, “is more of a factor in schools than at home because parents are motivated differently with their own children.” The changes in technology, she predicts, “should help people to use individualized research-based software outside the therapy room.” She continues to believe, she concludes, “that with all the advances in technology that more children can benefit from research-based intervention on a regular basis, not just when a speech pathologist or a special educator is available to work with the child.”