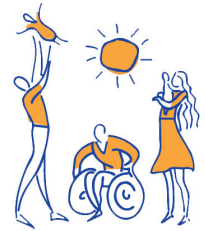


Swimming Upstream: Meeting Classroom Technology Needs in an Era of Scarcity and Change



In this Issue...

Even as history stands still for a snapshot of an incoming president whose ascendancy to 1600 Pennsylvania Avenue would have been unimaginable a generation ago, somebody moved our cheese. Just yesterday, it seems, times and budgets were relatively flush. Today, with the U.S. economy wrestling with a wrenching paradigm shift, the flow of tax dollars has been shut off. Coffers at all levels of government are empty. An economy in perpetual forward motion has been halted and flung back. But needs remain. School children with disabilities will continue to need assistive technology. And all children will need access to instructional technology as inclusion integrates more special education students into general education classrooms. Preservice teachers are asked to do much more with much less – less money and less time – while needing more of both to merely keep pace with the explosion of technology that is unfettered by the worst economic downturn since the Great Depression.

Despite a souring in the land of milk and honey immigrants continue to bring their dreams of a better life to America, along with some cultural resistance to AT when school assessments say their children need it. While history freezes the frame for a magnificent moment, we are thrown forward into an uncertain future in which classroom technology evolution accelerates and the need for technology benefits grows even more pronounced. This issue examines the relationship between preservice

- 1** Meeting Classroom Technology Needs in an Era of Scarcity and Change
- 3** Preservice Technology Training for a New Era
An Interview with Yeunjoo Lee, Ph.D.
- 13** Resources
- 13** Instructional Design, Not Software, Teaches the Student
- 13** Knowledge Network Members



teacher training in AT and instructional technology, teachers and minority families and the search for new classroom technology funding sources in a time of scarcity, change – and hope for a brighter future.

Yeunjoo Lee, Ph.D., Speaks

The first 24 years of her life were spent living in Korea, where, she recalls, “I never saw an individual with a disability, except for my aunt who had Down syndrome. The rest were institutionalized or locked away in their homes.” Looking back, she continues, I led a very sheltered life in Korea. For me, my aunt was a real person, not a shut-in.” When Yeunjoo Lee arrived in the U.S. as a young woman to continue her education she was shocked by the cultural contrast between the culture she had just departed and her new home. “Here there were people with disabilities living their own lives in public and there were individuals helping them.”

Today, that young woman from Korea, Dr. Yeunjoo Lee, is an associate professor of special education at California State University in Bakersfield, an oil-patch outpost that has been a way station for migrant workers since Dust Bowl refugees from Oklahoma landed there during the era portrayed in John Steinbeck’s novel *The Grapes of Wrath*, the Great Depression.

Now as then, very poor migrant laborers from all over the world make their way to Bakersfield for seasonal labor and other jobs that provide a foothold in American life. They, too, have children with special needs who need AT and can benefit from instructional technology in their classrooms. They, too, she says, are often misperceived by public officials and others who are unfamiliar with cultural differences that can hamper the delivery of services such as AT to children who need those services so desperately. And, because the migrant families are nomadic, few are connected to the Internet, a lifeline for more stationary Americans of all social and economic strata. These are the families that preservice teachers taught by Dr. Lee are trained to serve.

In 2005 Dr. Lee, along with Cynthia Vail of the University of Georgia, conducted a landmark study entitled *Computer-Based Reading Instruction for Young Children with Disabilities* (Council for Exceptional Children <http://www.cec.sped.org>). The study examined the effectiveness of Word Wizard, a prototype reading intervention program created by Dr. Lee, teaching sight word recognition to four young children with developmental disabilities. The program employed sounds, text, video, animations and a time-delay procedure. Four words were presented on a screen, with one word as the target, while the other three were decoys. Once the word was presented out loud, the respondent was provided five seconds to identify it from the four choices. Results indicated the intervention was successful in teaching word recognition skills in that reported errors were low.

Her American journey to Bakersfield began at the University of Georgia where she earned two Masters degrees and a Ph.D. in special education.

“I was very fortunate to have attended the University of Georgia, which has a very strong instructional technology department,” she says. “One of my special education professors there had a great interest in assistive and instructional technology. He introduced me to the enormous potential of technology in terms of helping special education students. My lifelong focus on technology began with him.”

The first course she ever took in the U.S. was entitled “Survey of Special Education.” That course and its instructor, she remembers, changed the course of her life. “The course instructor was wonderful. On one occasion she showed us a video of one of her previous students who had disabilities. As the video played the instructor cried and cried. That student had just died from a terminal illness. I was very moved. At that moment I decided to change my academic focus to special education. I wanted to learn everything there was to learn about this new world I had discovered and about the technology that supported these children. Since then I have

soaked up every shred of information on special ed and classroom technology that was available to me. Trough it all I have never stopped thinking about my late aunt in Korea and I never will.”

Supporting our interview with Dr. Lee are resources focusing on preservice training in classroom technology and the impact of cultural differences on the acceptance and use of AT and instructional technology. We also feature members of our Knowledge Network. The members spotlighted this month emphasize preservice technology training and technology support for families of children with disabilities. We invite you to contact these members for further information. Please share this newsletter with other organizations, families and professionals who may benefit from it. We invite you to visit us at <http://www.fctd.info>. We welcome feedback, new members and all who contribute to our growing knowledge base.

Preservice Classroom Technology Training for a New Era: Learn! Learn! Learn!

*An Interview Yeunjoo Lee, Ph.D.,
Associate Professor of Special Education,
California State University, Bakersfield*

Dr. Yeunjoo Lee’s message to her Cal State preservice teaching students, educators, administrators and researchers remains constant: “Learn! Learn! Learn!” Learn about the newest technology and its potential classroom benefits. Learn about the technology needs of children from underserved families. Learn about potential funding sources instead of waiting for governmental help that may not be available anytime soon.



Yeunjoo Lee, Ph.D.

Her advice to all parties concerned with and responsible for classroom technology in U.S. public schools includes the following:

- Give teachers time to learn about new technology and its uses
- Help teachers find non-government technology funding sources
- Remove the barriers inhibiting teacher implementation of assistive technology
- Understand the cultural barriers that may impact a minority family’s willingness to allow AT use by their child
- Conduct more research on technology and disseminate the findings

The Encouraging State of Preservice Technology Training

Despite the struggles for time, resources and understanding that lie ahead, Dr. Lee views the current state of preservice training in assistive and instructional technology in a positive light.

In California, she says, “Our teachers are encouragingly proficient in instructional technology.” This

proficiency, she explains, is the result of high technology competence levels California teachers must achieve in order to obtain a teaching certificate or credential.

“Teachers here must be proficient in using email, accessing the Internet, utilizing spreadsheets and presentation software such as PowerPoint, and in word processing. They should be able to evaluate software and Internet sites because these sites contain so much information but the information on these sites may not be reliable. Teachers need to be able to discriminate between useable and non-useable information. Therefore, they must be skilled at content evaluation. These minimum standards are higher than most states and are producing teachers with adequate proficiency in instructional technology.”

Although she concedes that she lacks familiarity with proficiency standards in other states, she readily acknowledges the success of the youngest California teachers in mastering new technology. “Based on my experience here, I can say that new teachers, those in their 20s, have satisfactory proficiency in using the Internet and evaluating software. But the question is, how well are they integrating instructional technology into a curriculum that is totally different from what they know? Their next step is to focus on how they use IT in their classrooms.”

Injecting Instructional Technology into the Curriculum: “Showing Is Better Than Telling”

Dr. Lee notes that some teachers are provided with educational software in classrooms but may not know how to use it or how to incorporate it into their lessons. She first became aware of this problem in 2005 while conducting a study. “We found that some teachers simply let the students play with the educational software. The teachers placed the students in front of a computer without close monitoring or



close observation.”

Some teachers, she asserts, “continue to believe that student technology time represents time that teachers can detach from the curriculum.” These teachers, she adds, “own the computer time instead of making it part of the lesson. That is the wrong way to use educational software. Use of this software should be a part of the curriculum instead being tacked on the end of a lesson as ‘computer time’ that is separate from the lesson.”

On the positive side, Dr. Lee believes that in recent years there has been a greater awareness of instructional technology and its uses. “Today, our teachers are better at using available technology.” Still, she cautions, “not all have signed on -- yet.”

For her part, Dr. Lee brings YouTube videos to her Cal State classroom “because YouTube can provide excellent back-up for classroom course material.” For example, she says, “response-to-intervention (RTI) is a major learning disabilities issue. In the classroom I can talk about RTI, but YouTube has several excellent clips regarding RTI, how other teachers use it and how RTI is interpreted by other sources. I bring those clips to the classroom and my students watch them very closely. Showing is better than telling.”

She is hopeful that her preservice teachers will follow her example and integrate Internet-based resources in the curricula they will eventually teach.

Fear of Technology? YouTube to the Rescue

The understanding of AT in preservice training is also improving, she says. “We’re doing better but there is a long way to go. I have talked to about 20 parents of children who use AAC devices. Many of the parents told me that one of the most significant barriers to AAC use is the lack of knowledge of these devices among teachers and professionals. Obviously, we need to disseminate more information. Parents also say that the teachers fear the technology and are sometimes reluctant to use it in the classroom.”

These parents, and others, she asserts, “believe strongly that teachers must be trained more thoroughly – indoctrinated is probably a better word – in order to be encouraged, or inspired, to use [assistive and instructional technologies] in classrooms as they were designed to be used.”

According to Dr. Lee, the best way to spark that encouragement or inspiration is to show AT to preservice teachers in a



classroom setting. Unfortunately, she laments, that is easier said than done because the current funding situation in California does not allow AT to be purchased or to be used in college classrooms. “This limitation makes it very difficult for instructors like me. It’s very difficult for us to raise the money to purchase AT for training. Big universities can get a grant, but small universities have less of an opportunity. That’s where YouTube comes in.”

Five years ago, while working on a research project, Dr. Lee surveyed special education teachers in Kern County, asking them how many computers they each had in their classroom. Given that Kern County is a poorer community with a sizable population of migrant families she anticipated dispiriting results. Even then, she was shocked. About 42% of the 150 special education teachers responding to her survey said that they had no computer, or just one computer, in their classrooms.

“This was very sad, especially considering how desperately so many children in the area’s schools needed exposure to computers. Their students attend computer lab once or twice a week for their computer time instead of using the computer in the classroom.”

The Main Culprit: Lack of Knowledge

In her survey Dr. Lee also asked the Bakersfield

teachers to name the main barrier to wider technology use. “I asked the teachers what the barriers are that hamper the use of AT in their classrooms. We assumed that funding – lack of resources -- was probably the most significant barrier. We assumed incorrectly.”

Forty-one percent of the teacher respondents cited lack of knowledge about AT as the most important barrier hindering its use in their classrooms. Nineteen percent named lack of resources and materials as the most important barrier.

According to Dr. Lee, “These teachers said that even when they had a computer in their classrooms that the equipment was outdated and/or in disrepair or, in the case of printers, absent.”

Sixteen percent of the teachers surveyed cited lack of time as the most important barrier. “The time factor is becoming more significant,” she states. “Standardized testing has sucked time out of teachers’ schedules that might have been spent on other useful activities, like technology training. That is unfortunate because teachers need to invest their time and effort in order to get the training they need. While many teachers are willing to make the effort, they lack the time.”

Preservice training in assistive and instructional technologies, she comments, needs to be more focused and more intense. “That training will help avoid the fear of technology that still plagues too many teachers.” At the very least, she adds, teachers need to know where they can find the information they require.

The irony, she points out, “is that no matter how effective preservice AT instruction is it will not be enough to keep up with the amazingly fast pace of technology evolution. We can only do so much. After that it is up to the teachers and their school districts to keep abreast of changes in technology. Universities only have two years with preservice teachers.”

Discuss AT in Every Preservice Class

To help make preservice training more effective, Dr. Lee says, faculty members themselves need more information about current and emerging educational technologies. “Assistive and instructional technologies should be discussed in every preservice class,” she urges “Video-modeling can be used in classroom discussions about social skills instruction. In assessment courses teachers should be taught to use technology in order to better assess their students. There is no reason that technology should not be incorporated into every class.”

She continues, “We need to be more effective in teaching preservice teachers about community resources. Many college preservice instructors and the teachers we teach are not as aware as they could be about what is available in the community in terms of AT-related resources.”

New technologies are being presented to the field each day and should be understood and put to use when available, she notes. “Take Smart Board, for example. This device has great potential for classroom use. I wanted to use Smart Boards as teaching aids in my preservice classes but there is only one classroom on my campus equipped with a Smart Board. Getting that classroom is very difficult. I can say that the university needs to make funding available to bring in more Smart Boards but the funding situation for everything here and elsewhere on college campuses across the U.S. is bad.”

Alternative Technology Funding Sources: Don't Wait for the Government

With government purse strings pulled tight for the duration, there is little use in bemoaning the lack of support for technology acquisition, she declares. “All states are tapped out. That is a fact of life right now. The trick is to find alternatives.”

The single Smart Board on her Cal State campus was not funded or provided by the state, she notes. “We got it thanks to a donation from Kern Schools Federal Credit Union. The device was expensive, so one was all we got. My advice is to develop a

close relationship with the private sector in order to obtain donations, even in this current dark economic environment. It is mandatory that colleges and schools go beyond state and district funding, because that funding will become less and less, not more and more.”

She encourages her preservice teachers to find grant opportunities. “Chevron, for example, distributed about \$35,000 worth of small grants to teachers last year. I tell my teachers that the application process is easier than they might have expected.”

Applications are short, she notes, usually not more than one or two pages. “What school districts can do in lieu of public funding is to draw up lists of area companies from which grant opportunities are available and make those lists accessible to teachers.”

In this climate, she emphasizes, teachers should focus their grant efforts on local companies that are still doing well financially and that have histories of active philanthropy. “The goal is to be as creative as possible in locating funding sources, preferably local. Many companies, I am learning, are not shy about funding projects and causes they believe are worthy, within the limitations of their current economic reality. If a grant application fits the profile these companies are looking for, there is a decent chance that money will be made available. The point is to avoid wasting effort on companies that are experiencing great difficulty.”

She adds that many teachers are not aware, but should be, that most companies change computers every 3-4 years. “Instead of seeing those used computers go elsewhere or be destroyed, get them for your classroom. This has benefits for the companies, which draw their workforces from the community and need an educated base of potential employees.”

Keeping Up with the Revolution: Are Classroom Digital Assistants Next?

In flush economic times and bad, technology evolves

at its own breakneck pace. Those who fail to keep up can be quickly left behind, including teachers, Dr. Lee warns.

“The preservice training I administer is short term. More important as a longer term solution is AT training provided by school districts for their own teachers.” A teacher who had a credential 10-15 years ago may not be aware of current technologies, she cautions. Updating the knowledge base is a constant need, especially among veteran teachers, she says.

The same holds true for preservice teachers. “We make a big effort to pump as much AT and instructional technology information into them during their time in preservice but their technology education should not stop there. In fact, what they receive from us is only the beginning. Teachers need to be kept updated.”

In the future, for example, more and more students will be using digital assistants, she predicts. “I don’t know how to use one in the classroom yet, but I will learn. Other teachers are like me in that they do not yet know how to use these devices. But they may have to do so in the near future.”

She believes that colleges and universities in collaboration with school districts are responsible for updating teachers on new devices and new ways to use those and older devices in the classroom. “My fear with devices like digital assistants is that when I finally become proficient at using them and can devise ways to use them in the classroom they will be obsolete. That’s how fast technology is evolving.”

Digital assistants are one thing, Smart Boards are another, she notes. “I saw some research on Smart Boards a few weeks ago – one of the very first research studies



that was done about [them] in special education settings. Like digital assistants, the Smart Board is good, but its apparent benefits must be supported by evidence-based research. At the same time, more research ought to be done on even newer technologies.”

The Digital Divide: It’s Alive and Well

Despite encouraging signs in Bakersfield, Dr. Lee acknowledges there are other underserved communities throughout the U.S. in which classrooms lack computers. Despite students’ near universal access to the Internet away from school, in-school inaccessibility among the poorest students in poorer districts is pronounced.

“Five years ago I thought my research findings on the unavailability of classroom computers in Kern County were extreme. However, the anecdotal evidence I’ve acquired since then tells me that my findings were not extreme.”

Anecdotal evidence, she continues, “also informs me that computer use in the home among families of all economic strata is almost universal. But not here. Here we have many migrant workers who live a nomadic existence in extreme poverty and for whom a monthly fee for an Internet connection is an impossible cost. Here in Bakersfield, and in communities like Bakersfield across the U.S., the digital divide is alive and well. Although the great majority of Caucasian families probably have an Internet connection, our migrant and Hispanic families here largely do not.”

An End to the English-Only Internet?

Additionally, and importantly, most of the information on the Internet that is so valuable today and so accessible for those who have an Internet connection is in English, she says. “That is a very significant barrier hampering the ability of diverse families to access AT. The FCTD website provides information in Spanish. Today, thankfully, more and more agencies provide information and documents in Spanish. Unfortunately, much of that information and many of those documents are not yet

detailed.”

In five years or less she hopes to see more websites in languages other than English. “Korean parents, for example, ask me for basic information on AT because they are unable to locate the information they need on websites or they do not know how to find it at all. Somehow, some way we have to figure out a way to get that information to families of diverse backgrounds. An English-only Internet is not the answer.”

Money would help solve the problem, she acknowledges, but as in other spheres money is unavailable, even for projects with desirable goals. In this economic environment she recommends requesting help from diverse communities. “For example, contact diverse cultural associations of which there are many nationwide. Explain the purpose of your project, and I am sure people will assist in translating materials.”

However, she warns, mere translations will not suffice. She recommends taking follow-up measures that include:

- Expert translation verification
- Inducing a lead agency to compile a list of professionals or experts in AT who have diverse backgrounds
- Soliciting assistance from the professionals
- Seeking out corporate sponsorship
- Avoiding reinvention of the wheel. There may be an existing informational website in non-English format
- Advertising the existence of non-English websites on sites administered by lead agencies nationwide
- Providing links to non-English websites in different languages.

Minority Families and AT: “Their Sensitivities Are Real and Substantial”

Among the major challenges faced by the field in successfully promoting use of classroom technology are cultural differences espoused by minority

families regarding assistive technology.

Some minority families may not want to use AT, including AAC devices, Dr. Lee asserts. “Some minority families value human interaction so highly that, for them, a communication board is a barrier to human interaction and human relationships. When making a list of challenges faced by the field in trying to impact current classroom use of technologies to support learning, move the issue of minority sensitivities near the top of the list.”

According to Dr. Lee, “we cannot remove barriers to the increased use of AT – and instructional technology as well – among minority families unless we concede that their sensitivities and reservations about these technologies are real and substantial.”

Those reservations and sensitivities are especially profound during a family’s first generation in the U.S. when the old ways still hold true, she explains. “It used to be that there were certain areas of the U.S. that were ports of entry for immigrant families and that other communities might not encounter non-English-speaking immigrants in great numbers. That is no longer true. There are large pockets of non-English-speaking immigrants throughout the U.S. often far from the urban areas where they once were concentrated. Their need for AT and instructional technology for their children is great, as is, in many instances, their limited knowledge of its benefits or their reservations about its use.” Those reservations are not going to evaporate, she declares.

“You Must Know Yourself First”

Preservice teachers will have to deal with families’ reservations. She offers advice to her students in the form of a caution. “I tell them, ‘You must know yourself first.’”

Teachers, she advises, “need to have an understanding of the baggage they bring to their interactions with non-English speaking immigrant parents.” Teachers must be aware of their own feelings about the minority groups with which they work, she

says. “How do they feel about Korean-Americans, about Mexican-Americans, for instance? A teacher may harbor some unrealized prejudice.”

Teachers need to gently nudge these families and encourage them to avail themselves of the opportunities to obtain the technology their children need – but do not push these families too hard, Dr. Lee warns.

The family will decide how deep their involvement will be, she continues. “Depending on the culture each family comes from they will perceive their role differently.” She urges teachers to prepare for their interaction with minority families. “Do research on cultural mores and restrictions. Read books, talk to the family members. When the school district and the teacher make a decision about what AT is most appropriate, the child’s family members will require time to carefully decide what they will do.” Then those family members will need to speak with their extended family about it, she explains.

“For example, we know that Asian cultures are more collectivist. Therefore, most Asian families in the U.S. consult widely with family members before committing to AT use. Unlike most Americans they will not decide on the spot.” Every culture has its quirks, traditions and constraints, many of which impact their decisions about AT, she notes.

“These traditions are very real. They are strong factors in family decision-making and must be taken into close consideration by education and technology professionals. For instance, one of my friends in Georgia, a teacher, has a student with severe cerebral palsy. The student uses a communication board in school. When the child returns home after school, however, the mom, who is Korean, removes the communication board from her daughter’s wheelchair and will not use it at all. I asked her why. Then I saw the communication board icons. They were not usable in a Korean family setting. On the board were icons for spaghetti, bread, fork, spoon and milk, for example. In traditional Korean families, rice is served at every meal instead of spa-

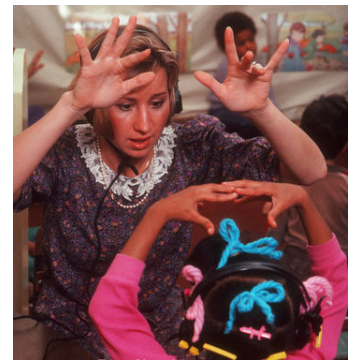
ghetti or bread. The icons on her board should have reflected the realities of this student’s culture so that she could use them to request what she really needs.”

At first glance, Dr. Lee says, this example might appear to be only marginally significant. In this case, though, appearances are deceptive. “When multiplied by similar differences in many cultures that are not reflected on a communication board’s icons, it is not minor. In the case of this Korean-American student in Georgia her board, among other things, ought to have included the names of the members of her extended family, an addition that is very important for Korean children, most of whom live with the members of their extended families.”

With this example in mind, she advises, education professionals should take great pains to look at each minority family individually and study the family instead of making assumptions that have no basis in fact, assumptions that can torpedo the effort to provide a child with the AT he or she needs.

“Teachers Need to Be Flexible”

In maximizing the benefits of technology to address a range of student abilities teachers need to be flexible, Dr. Lee declares. “They need to invest their time in order to learn. They should play with the technology that they have so they can find the best fit between technology and student.”



She warns, “Don’t strive for one-size-fits-all, because it does not. Each child’s differences must be accommodated and teachers are obliged to recognize those differences.”

Cited by IDEA 2004 as a way to integrate classroom technology into the curriculum over the long term, universal design is a concept she urges teachers to

become familiar with in order to enhance their flexibility when it comes to employment of classroom technology.

The Role of Principals in AT/IT Support

During this period of economic and educational transition, Dr. Lee sees a role for school principals, district and state officials in supporting effective use of assistive and instructional technologies.

“Principals, state and district officials need to provide whatever financial support is reasonably and appropriately available. They need to facilitate technology training. I know this is difficult in the current environment, but they ought to provide incentives to teachers who employ technology effectively.” Those incentives, she says, “might include a \$100 monetary incentive that can be used in the classroom for the benefit of the students, and attendance at technology workshops which are valued by teachers.”

Principals, state and district officials can also offer inspiration, Dr. Lee notes. “They can communicate more effectively with teachers, encouraging them to do more on their own. They can use whatever leverage they possess with potential funding sources in their states and localities that are not government affiliated.”

For example, she explains, “with entrée from principals and district and state leaders, teachers can develop relationships with local business/fraternal organizations like Rotary Clubs, Lions Clubs, Kiwanis Clubs and chapters of the Junior Chamber of Commerce. Perhaps this can be kicked off at focus groups where possible solutions [to meeting technology needs] can be brainstormed.”

She also suggests finding ways to maximize the benefit of the technology now in our possession. “I don’t think that we are doing that yet. The idea is to do the best with whatever means are available.”

Time for a UDL Push

In times of acute and widespread financial difficul-

ty, she continues, “the first response is to throw up one’s hands and say, ‘I don’t have any money and that’s too bad!’ That is not good enough for anyone, especially the children. There needs to be a general openness about using technology.

For example, she says, this may be the perfect time to introduce a push toward universal design for learning (UDL) at the state and local level, which would ultimately include extensive use of AT. “This concept, I wish, would be accepted by all parties with their heart and not just their brain.”

“UDL is not a new concept. However, in most cases it remains a theoretical approach to education, not yet a practical approach. Many, many teachers have never seen it implemented. We talk about it often, but what does it really look like in a classroom setting. Maybe this is a good time to introduce it in the classroom. The practice piece has been missing. Let’s add it. In the long term UDL, or universal design of any kind, looks as if it will save states and districts money as well as produce beneficial results for the children, all the children. My message is: Universal design is the future environment for effective classroom technology. Let’s use it today to begin tomorrow.”

RESOURCES

Articles

Computer-Based Reading Instruction for Children with Disabilities

By Yeunjoo Lee and Cynthia O. Vail

Journal of Special Education Technology (2005)

The authors explore the value of computer assisted intervention in reading for students with disabilities. While their study involved a small number of participants, Lee and Vail found that young children with disabilities can learn word recognition and transfer acquired skills to functional materials, such as a story book. Their investigation extends current literature by evaluating the effects of computer assisted instruction on incidental learning, such as reading on an index card. The researchers note that “multimedia do not inherently provide Universal Design for Learning, which can be achieved only by appropriate instructional design” and “the change in a student’s performance is the result of instruction . . . not the use of the media per se.”

Lee and Vail recommend several areas for further investigation:

- The relationship between individual differences – physical differences, cognitive levels or learning styles – and the effectiveness of a computer program.
- The effectiveness of computer assisted instruction in a natural environment.
- Teachers’ roles and levels of participation and their impact on the effectiveness of computer assisted instruction.

<http://jset.unlv.edu/20/JSETv20n1.pdf>

Audio-Visual Training in Children with Reading Disabilities

By Annie Magnan and Jean Ecale

Computers & Education (May 2006)

This study tested the effectiveness of audio-visual training in the discrimination of the phonetic voicing feature on the recognition of written words by young children deemed at risk for dys-

lexia as well as on dyslexic children’s phonological skills. The study also examined the effectiveness of word recognition training among dyslexic children who regularly used a computer at home. In three experiments the intervention group showed higher performance increases in phonological skills and phonological recoding than did the control group.

<http://portal.acm.org/citation.cfm?id=1139242>

Ethnic Minorities and Assistive Technology: What We Know Now

By Myisha Reed, B.A. and Tanis Doe, Ph.D.

Community Research for Assistive Technology (2007)

The authors introduce and explore barriers faced by – and differences among – ethnic minority groups and their access to AT. Using existing information the authors highlight differences between minority and majority groups in order to illustrate gaps and the need for further examination of this area. According to the researchers, examples of beliefs about AT and disabilities held by some non-Western cultures include:

- Having a “fatalistic” attitude that discourages direct action
- Isolation of persons with disabilities. Some cultures may not believe that persons with physical disabilities need physical exercise, recreational activity or a social life.
- Consumers may be unfamiliar with the concepts of rehabilitation and adaptation. For example, a minority client may arrive at an initial appointment expecting a cure from the rehabilitation counselor and may depart disappointed when it is not provided.
- Attitudes toward professionals and service personnel. Different cultures may interact differently with professionals.
- Gender disparities. In certain cultures females may receive less medical care than males. If a female has a disability she may never gain access to an assessment or to the means of attaining AT.

<http://www.cr4at.org/PositionPapers/Minorities.html>

Assistive Technology and Diversity Issues: A Minibibliography

By Susan Goode, MLS, PT

NECTAC Clearinghouse on Early Intervention and Early Childhood Special Education (revised 2005)

The author has compiled a bibliography of studies that have found differences in family reactions to AT across cultures. For example, many Asian and Native American families value and expect a level of dependence on the family. In these cultures, the author comments, the use of AT for increased independence by very young children may not be considered important. On the other hand, she notes, many African American families emphasize the importance of fitting into their communities rather than appearing different. AT devices that draw considerable attention to a child's disability in public places may not be acceptable to these families. Additionally, she finds, families from low socio-economic backgrounds often have pressing concerns about basic needs such as health care, work and transportation that make it difficult for them to participate in AT evaluation and training sessions. The priorities of these families may be very different from those of the professionals who work with their children.

<http://www.nectac.org/-pdfs/pubs/at.pdf>

Enhancing Academic Achievement and Transition Outcomes Using Technology

By Margo Vreeberg Izzo, Alexa Murray, Nancy O'Hanlon

National Center on Secondary Education and Transition (2005)

It can be a challenge for special educators to meet the requirements of NCLB and IDEA. This brief describes an innovative approach to aligning standards-based education with transition planning. The technological and career components of a specific computer-based instruction (CBI) program can be adapted to the larger curriculum development process. Educators can meet academic standards by infusing technology, learning supports, information literacy and transition skills

into their curricula. The authors determine that it is possible to successfully meet the requirements of NCLB and IDEA without compromising school accountability or the individual needs of a student with a disability.

<http://www.ncset.org/publications/viewdesc.asp?id=2472>

Success! Teacher Training

By Lisa Wahl

Alliance for Technology Access (2007)

The author presents a case study that examines challenges faced by a special education director of a large suburban school district that had an influx of AT assessments in the wake of the reauthorization of IDEA. Mainly, she was concerned that in many cases the AT purchased for students was not being effectively utilized. Her goal was to find a way to provide effective and efficient AT services. She achieved that goal by marshalling the abilities of a wide range of skilled professionals, including teachers and interested parents, in a year-long training program. Several teacher participants desired a more flexible schedule that would allow them to work on assessments throughout the school year. Involving other teachers in the process allowed on-the-job training to occur. By the end of the training, the special education director was confident that AT would be much more effectively used.

<http://www.ataccess.org/resources/atk12/trainingteacher.html>

Presentations

AAC for Multi-Lingual Individuals

By Alaina Levant, Nicki Veeder

Michigan State University (2006)

This MSU study addressed the impact of a culture's "socio-psychological construct" on its members' attitudes toward special education services. The researchers note that only about half of the U.S. population speaks English well, citing Spanish as the most frequent non-English language spoken.

The study concluded that African Americans pre-

fer not to use AT in public due to the perceived stigma attached to the equipment; Asian Americans prefer that AT training not occur in school; and Native Americans minimize self-disclosure to others, particularly a man to a woman. Her guidelines for culturally relevant intervention include:

- Be businesslike and task-oriented
- Use praise and encouragement
- Provide opportunities to learn
- Preview and review lessons
- Use multiple levels of questions and cognitive discourse

A Power Point presentation based on the study can be viewed at:

https://www.msu.edu/~levantal/AAC_for_Multilingual_Individuals_Levant_and_Veeder.pdf

Websites

Starfall

Dr. Stephen Schutz, a physicist and publisher who had difficulty learning to read as a child, developed this free online resource to provide access to reading instruction. The Starfall Method teaches phonemic awareness, sound-spelling relationships in words, pronunciation, vocabulary and language comprehension, word recognition and reading comprehension strategies.

A progression of stories and activities are presented, including sound/symbol recognition practice, beginning reading 'books' developed around specific phonemes, practice and mastery experiences.

Parents and teachers can download materials that accompany the stories on the website. The parent section stresses the importance of parental support and encouragement when a child is learning to read. The educator section provides additional information about the methodology of Starfall. Many elementary school computer labs and classrooms use starfall.com for additional reading practice.

<http://www.starfall.com/n/N-info/aboutus.htm>

“Instructional Design, Not Software, Teaches the Student”

Dr. Lee established her reputation for innovative research in computer-based learning with her study, Computer-Based Instruction for Young Children with Disabilities (Journal of Special Education Technology, 2005) in which her prototype Word Wizard computer program taught sight word selection to four boys with significant developmental disabilities.

“This computer program is unique in that it does not contain many added features – bells and whistles – nor does it depend overly on animation, sound or graphics like other commercially available education software,” Dr. Lee points out.

Eventually, she explains, the students learned the sight words. “In fact, they learned fast and I had to modify the computer program to better meet their needs.”

In teacher-directed instruction, she explains, “teachers try to grab the students’ attention. But a computer program does not try to do that. It does not require an active attentional cue.” In teacher-directed instruction, she adds, “the teacher knows whether or not a child is paying attention to her. However, in computer-based instruction student attention is not demanded. Without student attention the program just runs. In our research, that was the difference.”

Student performance was not consistent, she remarks, because students occasionally were not paying sufficient attention to the computer program. “For example, the computer may have told the students, ‘Find the button.’ The student understands the instruction but if he was not paying attention to the program he missed that trial.”

Therefore, she continues, “classroom teachers need to make sure that the student is paying attention to critical information as presented by the

computer program instead of the bells and whistles that can be very distracting and attention-grabbing.” Without full attention on the part of the student who is using a classroom computer program the student will not get the intended benefit from the program, she notes.

“Perhaps due to the nature of my computer program, the program was not fun like other educational software in game format. Other commercially available programs have many added features. The program I used limited many of those extraneous features.

The problem, she says, “was that the student who was accustomed to those commercially available programs found my program boring. Consequently, he was not compliant. He could play with the other programs, but not this one.”

Based on her 2005 results, Dr. Lee asserts that companies need to design educational software in which teachers are provided options that enable them to control extraneous features.

“If a teacher has a student with ADHD, for example, that student should not be provided with excessive animation in his educational software. Teachers therefore should have the option of eliminating the unnecessary features, which means that teachers must closely monitor the interaction between student and program.”

It should be remembered, she concludes, “that it is instructional design, not the software that teaches the student.”

KNOWLEDGE NETWORK MEMBERS

Assistive Technology of Ohio

Housed at Ohio State University, ATO provides low-interest loans, refurbishes and redistributes computers, maintains a trading post where used AT can be purchased, sold and donated and administers adaptive toy libraries and a device loan library. Called Access for Individuals, the low-interest loan program aids Ohioans with disabilities in acquiring AT that includes closed-circuit television, vehicle modification, home modification, and equipment for the blind. The Device Loan Library offers access to equipment in the following categories: blind and low vision, computer access, daily living aids, deaf and hearing impaired, education and learning, environmental control, seating/mobility/positioning, recreation/sports/leisure, speech and communication, switches and therapy. For further information, contact:

Assistive Technology of Ohio
Room 1139

Dodd Hall / Davis Medical Center
480 Medical Center Drive
Columbus, Ohio 43210

Phone: (800) 784-3425 (toll free); (local) 293-9134, 293-9133

Contact: William Darling, Executive Director

Email: atohio@osu.edu

<http://www.atohio.org/News.html>

Technology in Teacher Education/Nevada (TITE/N)

Funded by the U.S. Department of Education’s PT3 grant program, the TITE/N project aims to increase the educational technology skills of K-12 preservice teachers. Housed at the University of Nevada’s (Reno) College of Education, Project TITE-N addresses disadvantaged learners via field-based experiences in high-needs schools, preservice teacher training in a variety of technology applications, including AT

and incentives for internships in rural/remote schools. Targeted schools include those in remote parts of the state, with Title I designation and/or a high incidence of students identified as having disabilities or limited English language skills. The project's objectives include:

- Collecting baseline data on preservice teacher and university faculty proficiency in AT
- Developing and validating new standards-based self-appraisal instruments for preservice educators
- Participating in the data sharing analysis component of next generation collaborative exchanges among technology innovation cluster universities
- Ensuring that all preservice teachers demonstrate increased knowledge and use of technology applications as reflected in performance in practicum courses
- Ensuring that all preservice teachers infuse technology into their teaching during supervised internships
- Completion of the Nevada Advanced Technology Endorsement by at least 60 new teachers, 20 per year.

For additional information, contact:

Technology in Teacher Education/Nevada
Raggio Research Center, Mail Stop 432

University of Nevada, Reno

Reno, NV 89557-0218

Phone: (775) 784-7786

Fax: (775) 327-2016

Contact: Jacqui Ewing-Taylor, Project Director

jacque@unr.edu

<http://www.unr.edu/TITEN/about.html>

Nathaniel H. Kornreich Technology Center

The Nathaniel H. Kornreich Technology Center, a part of the non-profit Abilities! organization, is an assistive technology demonstration, education, and evaluation center. It sponsors presentations, conferences and meetings on various aspects of AT and administers continu-

ing education programs and academic courses for professionals, advocates, families and consumers. The center offers workshops for teachers, therapists, parents and consumers in the New York City metropolitan area. Online and distance learning is also available via Web-based projects, teleconferencing, podcasts and webcasts. The center participates in preservice AT training with a number of New York area academic institutions, including Columbia University and New York Institute of Technology. For further information, contact:

Nathaniel H. Kornreich Technology Center

201 I.U. Willets Road

Albertson, NY 11507

Phone: (516) 465-1626

Contact: Susan E. Fridie, Director

sfridie@abilitiesonline.org

<http://www.ncds.org/KTC/education.aspx>

Chelsea School

Chelsea School serves students with language-based learning disabilities who have repeatedly failed in their efforts to learn to read and write, providing them with appropriate tools and strategies. The school's phonics-based reading program is systematic, sequential and multi-sensory. While following the mandated curricula in content, Chelsea instructors adjust their teaching methods to accommodate students with dyslexia and other disabilities by utilizing technology, such as computers, voice activated software and calculators. The instructional programs offered at Chelsea are Level V special education programs accredited by the Maryland State Department of Education. For more information, contact,

Chelsea School

711 Pershing Drive

Silver Spring, MD 20910

Phone: (301) 585-1430

Fax: (301) 585-9621

information@chelseaschool.edu

<http://www.chelseaschool.edu>

Technology Assistance for Special Consumers

Technology Assistance for Special Consumers strives to provide individuals with disabilities, their families or advocates, and associated professionals access to assistive technology devices and services to increase independence in the home, school, and work environments. One of the services that TASC provides is training on the successful implementation of AT, as well as maximizing the benefits of AT while minimizing costs. T.A.S.C. is a recognized Continuing Education Provider for the American Speech-Language-Hearing Association (ASHA), and through them SLP's can receive training on professionally related topics. T.A.S.C. also coordinates with Universities and Colleges to increase awareness on the impact of assistive technology for future teachers and therapists. TASC also offers for its consumers a Computer Resource Center, Lending Library, Consumer Action Teams, Outreach, and Community-Based Demonstrations.

To learn more about T.A.S.C. services, please contact:

1856 Keats Drive
Huntsville, AL 35810
Phone: (256) 859-8300
Fax: (256) 859-4332

<http://tasc.ataccess.org/>

Lisa Snyder, Project Manager at :
tasc@ucphuntsville.org

High Incidence Assistive Technology (HIAT)

Part of the Montgomery County, Maryland School System, High Incidence Assistive Technology (HIAT) works to build the internal capacity of schools to use technology to improve the performance of struggling students. HIAT focuses on providing training on accessible technology and developing and sharing resources for implanting the principles of universal design. HIAT offers training opportunities in multiple formats, including both online and in-person. Their Parent TIPS is a series of

workshops designed to help parents use universally designed learning strategies to support students at home. They also have scheduled classes and Tech Quick Guides, which can help you get up and running with technology that supports struggling students.

For more information on HIAT, please contact:

8001 Lynnbrook Drive

Bethesda, MD 20814

(301) 657-4959

Dr. Denise DeCoste, OTR - Special Education

Denise_C_DeCoste@mcpsmd.org

<http://www.montgomeryschoolsmd.org/departments/hiat/>

Funding provided by the US Department of Education under grant number H327F080003

Project Officer: Jo Ann McAnn

Project Director: Jacqueline Hess

Newsletter Editor: Thomas H. Allen

Design and Distribution: Ana-Maria Gutierrez



Family Center on Technology and Disability

1825 Connecticut Avenue, NW

Washington, DC 20009

Phone 202-884-8068 Fax (202) 884-8441

fctd@aed.org www.fctd.info