

## Upfront



Almost a decade ago, we devoted an issue of *Augmentative Communication News (ACN)* to the Internet and AAC. At the time, many people in the AAC community were not yet using computers or the Internet regularly. Today, however, use of the Internet has increased exponentially.

The growth of the Net is not a fluke or a fad, but the consequence of unleashing the power of individual creativity. If it were an economy, it would be the triumph of the free market over central planning. In music, jazz over Bach. Democracy over dictatorship.<sup>1</sup>

Admittedly, I am a bit older than most of my colleagues. I certainly did not grow up imagining that I would send emails to friends across the world and get a response in hours, or work on a document with a colleague hundreds of miles away, or chat with a friend using a computer, or search for information on something called “Google,” or take a continuing education course from my home, or listen to a webcast lecture while viewing a PowerPoint presentation, or order books, or plan trips online or ANYTHING like that. The Internet is a truly extraordinary resource.

It is also a pain. I hate being thrown offline. I groan when I am told I need to download some “free” software to watch a webcast. Although it is SUPPOSED to be simple, it never, ever is. I detest having spam delivered to my email

door. I am now afraid of worms. I worry about privacy and confidentiality, and I freak out when my website goes down. In the end, however, the benefits WAY outweigh the irritants.

This issue of ACN challenged me to reflect on how people within the AAC community use the Internet for teaching and learning about things that matter to them. Since the need for AAC-related information varies depending upon who you are, I have given each section a different focus. **For Consumers** contemplates the use of the Internet by people who rely on AAC and their family members. **AT/AAC enABLES** highlights a website that

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## For Consumers



### The Internet and its offspring

In 1995, Michael B. Williams wrote,

The Internet and its precocious offspring the WWW are in the spotlight. Open a newspaper or magazine, or turn on the television. . . It's a hot topic. It's so hot that the U.S. Government wants to regulate it and businesses want to put advertisements on it.<sup>2</sup>

He listed a number of ways the information superhighway can benefit people with disabilities:

1. Drastically increases the ability for individuals with some types of disabilities to access and use information.

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2. Decreases personal isolation that some individuals experience because of restrictions they face in moving about, communicating or easily congregating with others.
3. Increases integration by allowing individuals to interact with others in a way that makes their disability invisible or irrelevant.
4. Provides opportunities to participate in distance learning programs and may enable one to receive medical information from a remote location when travel is difficult.
5. Enables individuals with mobility or travel impairments to do their shopping, learning and working from their homes or other

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facilities.<sup>3</sup>

In 1996, Patricia Dowden reported on ten reasons consumers use the Internet.<sup>4</sup> [See Table I.] These reasons cluster into several categories—community building, information gathering, recreation, mentoring and conducting business—and are discussed below.

### Community building

Email, listservs, instant messaging and chat rooms are ways to communicate over the Internet with friends and family, as well as with people who share similar interests. These communication avenues can be the mortar of communities and relationships. Email is fast becoming a favored communication mode for many people with speech difficulties who rely on AAC and are literate. In addition, chat rooms offer lots of options, depending upon one's age and interests. People who rely on AAC may choose to join listservs and chat rooms that discuss their personal interests and needs, such as

**Table I. Top ten reasons to use the Internet (Dowden 1996)<sup>4</sup>**

- 1 Communicate more with my family.
- 2 Don't have to say I have a disability if I don't want to.
- 3 Participate in discussion groups.
- 4 Express more forthrightly my opinions to government and TV stations.
- 5 Download games to play offline.
- 6 Check out movie reviews and times before making plans.
- 7 Make travel plans and reservations.
- 8 Check the CNN home page for news instead of watching TV news. Read magazines on line.
- 9 Decrease my phone bills.
- 10 Expand my horizons.

art, music, gardening or sex. In using these communication options, individuals can elect to participate without mentioning their disability.

Some individuals with newly acquired conditions, and their family members, may find listservs help them connect with others who are going through similar experiences (e.g., people with aphasia or amyotrophic lateral sclerosis). The members of these listservs can offer first-hand experience and ongoing support.

One popular AAC listserv,

ACOLUG, is housed at Temple University and partially supported by the AAC-RERC. ACOLUG is a virtual space reserved for AAC user discussions. While some people on ACOLUG are active discussants, even more individuals are “lurkers” (i.e., they read posted messages, but don't participate in discussions). Service providers, family members, educators and manufacturers are among those “lurking” on ACOLUG. Discussion topics vary widely and have included issues related to AAC devices, general technology, funding, living independently, health and safety, abuse, school, employment, parental concerns, transportation and more.<sup>5</sup>

Because independent participation in listservs and chat rooms requires considerable literacy skills, many from the AAC community do not participate. However, friends, family members and/or professionals can support their inclusion by reading or summarizing postings when a topic of interest is discussed. Supporters may also type questions, comments or requests for information on behalf of someone who is not able to do so independently. Being in the mix is what's most important!

### Information gathering

There is information about almost everything all over the Internet. This includes AAC strategies, equipment, materials, conferences, treatment approaches, service providers and AAC-related organizations. Anyone can find it overwhelming to sift through this information. For example, if you Google ([www.google.com](http://www.google.com)) “augmentative communication,” you get approximately 580 websites; “AAC devices” yields 470 websites; “Literacy and AAC” has 520 websites. It is easy to feel inundated and get lost.

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targets clinicians, family members, educators and policy makers to help dispel myths about AAC.

**Clinical News** discusses benefits for service providers. It includes information about AAC Internet courses. The **Equipment** section considers AAC manufacturer sites and the types of useful information they currently provide. **Governmental** highlights important accessibility guidelines and issues. Finally, the **AAC-RERC** section shares information about how the Internet can support research and development activities.

Many thanks to all who contributed their information and ideas.

They are listed on page 15.

The next issue will focus on autism and AAC, a topic that has grown exponentially in importance over the past few years. Pat Miranda and Emily Rubin are contributing their expertise. . . it promises to be a terrific issue.

*Sarah W. Blackstone,*  
Ph.D. CCC-SP



Sophisticated consumers can target their Internet searches. Some know enough about the field to recognize the names of experts. However, many people with complex communication needs and their family members have no clue how to evaluate the usefulness or authority of the information they find on the Internet.

Table II delineates some Internet precautions.<sup>4</sup> While the Internet is an effective way to raise awareness, AAC consumers (like everyone else) should beware. It is always smart to consult with others who are more knowledgeable and can assist in evaluating information found on the Internet.<sup>6</sup>

## Recreation

Access to the web opens the door to a plethora of leisure activities: games, music, video, art, chat groups, movie reviews, sports, news and so on. However, these options are not readily accessible to people who can not read well or have difficulty navigating through the Internet. For them, engaging in recreational activities on the Internet means having a “guide on the side.” For example, I know a young man with autism who likes movies and CDs. He is minimally literate, but can recognize printed words and copy text. He now happily spends hours “surfing” his favorite websites because his teacher taught him how to go on the Internet and find his sites independently. He can type in the address of the site he wants and search for new ones. In addition, his motivation to surf the Web, his repeated exposure to familiar text and the support he has received over time has resulted in significant improvement in his reading comprehension—all while enjoying a leisure activity.

**Table II. Internet precautions (Dowden 1996)<sup>4</sup>**

- 1 There is lots of misinformation out there. Consumers beware.
- 2 Don't believe everything you read.
- 3 Single topic newsgroups and WWW sites may take you out of the mainstream..
- 4 Advertisements often look like objective information.
- 5 Don't buy anything unseen.
- 6 Self-serving people who prey on vulnerabilities are out there.
- 7 Don't give or accept “medical” or “clinical” advice on the Internet.
- 8 Don't give out personal, identifying information.
- 9 Watch what you say in emails. They can travel way beyond your expectations.

## Mentoring

A mentoring relationship consists of a person with more experience or more confidence in a specific area (a mentor) sharing what he or she knows and guiding someone who has less experience in that area (a protégé.)<sup>7</sup> Most people find their own mentors and have several mentors over a lifetime. Recently, however, formal AAC mentoring programs have been offered over the Internet to individuals who rely on AAC technologies and can access the Internet. Examples include the Augmentative Communication and Empowerment Supports (ACES) program and the Augmentative Communication and Employment Training Supports (ACETS) program. Both projects were developed by Diane Bryen and are offered through Temple University. Program graduates mentor new participants.<sup>8</sup>

The Penn State AAC Mentor Project, developed by David McNaughton, Janice Light, Carole Krezman and Michael Williams, focused, at the outset, on problem solving and goal setting.<sup>9</sup> Mentors offered a rich source of disability-related information, effective problem-solving strategies and

encouragement. Participants included 30 adult AAC mentors and more than 30 adolescents and young adults who used AAC. As mentoring relationships developed, it was evident that opportunities for the protégés to socialize with their mentors and share life experiences were also very important. The use of the Internet and email was essential to the success of each of these AAC mentoring programs.

## Conducting business

E-commerce makes it easy to buy things. In fact, we are all just a few clicks away from maxing out our credit cards. We can purchase groceries, books, movie tickets, birthday presents and airline tickets. We can register for conferences and buy AAC products. For some individuals with disabilities, the convenience of Internet shopping is highly valued. However, while there are some terrific deals and opportunities out there, *buyers beware*. Take another look at Table II.

## Summary

Individuals who rely on AAC, like other stakeholder groups, look to the Internet for information, community, recreation and business transactions. Many prefer email as a communication mode because it allows interactions to occur on a more level playing field. That's the good news.

The not so good news is that the Internet is not readily accessible to everyone, particularly people with disabilities. Those without an Internet connection, those who have difficulty using computers because of equipment problems or disability-related issues, and those who are not literate will find themselves living on the wrong side of the “digital divide,” without the benefit of the Internet.



## AT/AAC *enABLES*



<http://depts.washington.edu/enables>

with Patricia Dowden, Ph.D.

Patricia Dowden, from the University of Washington in Seattle, has developed an important new Internet resource and was kind enough to grant me an interview.<sup>10</sup> Her Website, *AT/AAC enABLES*, is an educational resource for faculty, students, practitioners and families, as well as individuals who rely on AAC techniques. Its purpose is to dispel myths and misperceptions about people who rely on AAC strategies, AAC technologies and other types of assistive technologies (AT). The Website features snapshots of individuals with complex communication needs as they live, study, work and play in their communities. As Dowden said, “*enABLES* is a great tool for teaching and learning about AT and AAC. It uses powerful media to provide just-in-time information about people who use AAC/AT strategies.”<sup>10</sup>

When I went on the website and looked around [clicking first on “Dispelling Myths about AAC/AT” and then on “Facts about People who use AAC”], I was able to read stories, see photos and watch videos of individuals who use AAC technologies living productive lives. My favorite was a video clip featuring my friend and colleague Michael B. Williams talking about his life and the role AAC technology has played in his work, home and community activities. What a terrific way to introduce AAC to a class or to a family.

During our interview, I asked

Dowden why she started *enABLES*. She responded:

Like other experienced clinicians, I was frustrated after hearing the same

misconceptions over and over about AAC strategies and the people who use them. I wanted to dispel some of the myths and break down the stereotypes. We have to do that because the inherent prejudices in our society are incredibly detrimental to the people who use AT and AAC.<sup>10</sup>

### Why the Internet?

Dowden chose the Internet as a medium because her goal is to connect with everyone who touches the lives of people who rely on AAC/AT. As a professor at the University of Washington, she had ready access to an infrastructure that made it feasible to develop the Website. She said:

My primary targets are clinicians, teachers, students, family members, caregivers and advocates, but, through them, I ultimately hope to reach third-party payers of equipment and services and supervisors and managers of clinical programs. These are the people who control intervention and equipment, through caseload management and funding. By dispelling their misconceptions and stereotypes, we may improve the funding for services and equipment for people who use AAC or AT.<sup>10</sup>

### Why Videos?

*AT/AAC enABLES* offers a library of video clips and stories so that clinicians and family members can see a broad range of communication equipment and strategies in use. When asked why she decided to collect and catalogue video clips, Dowden said:

If a picture is worth 1000 words, a video clip must speak volumes! We all know that communication is more than just the sounds we speak. It is dynamic and involves multiple modes of expression, many of which are visual. <sup>10</sup>

As I explored the website and the

video clips, I was impressed by the comprehensiveness and diversity of the materials. Dowden said:

We know from your *Social Networks* studies that people who use AAC rely on a wide variety of modalities—from no tech to high tech. Only videos can truly capture the full nature of communication. For example, some important strategies are strictly visual, such as signs, gestures and facial expressions. Likewise, some techniques, like scanning and Morse code, are difficult to conceptualize through text descriptions, still images or data from someone’s communication device.<sup>10</sup>

Videos offer a way to learn about all of these important AAC strategies.

### Why functional activities?

Although Dowden describes the site as a resource to learn about AAC strategies, she designed it in a way that clearly spotlights the daily lives and activities of people who rely on AT/AAC. She pointed out:

It is far too easy for clinicians and teachers to focus on technologies and techniques. It is much better to show these strategies within the context of meaningful activities and the individual’s life in general. This keeps the focus on the individual and his or her participation in life.<sup>10</sup>

*AT/AAC enABLES* depicts activities that involve communication and AAC strategies. It also shows people who rely on AAC/AT engaged in a range of activities and, thus, depicts the breadth and depth of their lives.

### Exploring *enABLES*

The site is organized so visitors can find information in four ways:

- 1) **Myths:** Tackles head-on the myths and misconceptions about AAC. It includes compelling stories of people whose lives and activities break the stereotypes and helps clinicians,

students and family members think in new ways about people who use alternative strategies.

- 2) **Profiles:** Provides in-depth biographies of individuals whose stories are particularly interesting.
- 3) **Search Engine:** Gives visitors a way to search for specific video clips by age group, functional activity and AT/AAC strategy.
- 4) **enABLING YOU!** Provides an on-line guide for visitors to the website. This feature (available soon) will guide clinicians, teachers, family members and advocates in how to use the website for specific purposes.<sup>10</sup> [See Table III.]

### Impact

Dowden reports that the response to *AT/AAC enABLES* has been overwhelming.

To my great surprise, the response is not confined just to North America or even to countries where English is the primary language.<sup>10</sup>

She notes there is substantial interest from all over Europe, Asia and the Middle East. The website has received hits from more than 50 countries. For example, a professor in Italy wants to use some of the video for teaching. In the U.S., the father of a child on the east coast wrote:

Thank you for sharing [your] website. I went and visited and read about Steve Harper. If anyone wants an inspirational story, go to the site and read about him. I have a daughter who is similarly involved, and this story helps me realize that there is a very bright future for her.<sup>10</sup>

### Challenges

According to Dowden, she faced three primary challenges in developing *AT/AAC enABLES*.

**Table III. Enabling YOU! Ways the Website can help AAC stakeholders<sup>10</sup>**

Stakeholders	Ways enABLES Can Help
<b>Clinicians</b>	<ul style="list-style-type: none"> <li>Learn about AAC strategies never seen in action.</li> <li>Expand expectations for people who use AAC so they become more aware of their ability to live independently, work, worship, create art, <i>etc.</i></li> <li>Show family members specific AAC techniques.</li> <li>Show specific techniques to other team members, supervisors and managers to clarify goals.</li> <li>Demonstrate the value of AAC intervention to those who determine caseloads.</li> <li>Show funding agencies specific techniques they are being asked to fund.</li> </ul>
<b>Teachers</b>	<ul style="list-style-type: none"> <li>Assign homework to dispel student's prejudices about AAC and the people who use it.</li> <li>Introduce and demonstrate graphically the value of multiple modalities.</li> <li>Counter the belief that AAC is synonymous with equipment and high technology.</li> <li>Teach about AAC strategies, using video examples.</li> <li>Expand students' expectations for people who use AAC/AT.</li> <li>Demonstrate techniques used elsewhere in the country.</li> <li>Demonstrate techniques teacher does not have in his/her tape library.</li> </ul>
<b>Family Members and Advocates</b>	<ul style="list-style-type: none"> <li>Help family members expand their horizons and increase their expectations.</li> <li>Help dispel prejudices about specific devices or techniques by showing the breadth and depth of possibilities.</li> <li>Reinforce the value of multiple modalities.</li> <li>Help families show friends/relatives what AAC "is" and "is not" in order to dispel their stereotypes.</li> <li>Inspire teens and youth who use AAC with their own possibilities in life.</li> </ul>

- (1) Soliciting materials and obtaining informed consent from individuals. This has become easier as the site has grown.
- (2) Developing a site that requires the visitor to have high-speed cable access and computers powerful enough to view video clips. This obstacle has lessened with time.
- (3) Funding to sustain the site. Because Dowden's university department (Speech and Hearing Sciences) has a web-based video archive for teaching and research as part of their Tele-collaboration Project, there is a built-in infra-

structure. To construct *AT/AAC enABLES*, she obtained a grant from the NEC Foundation of America. She is now seeking additional funds to maintain and expand the website.

### Summary

*AT/AAC enABLES* dispels long-held myths and misconceptions about people who rely on AAC. It illustrates the multiple strategies people use to communicate and lets us see people who rely on AAC and other assistive technologies leading their lives and participating in their communities. *AT/AAC enABLES* provides the AAC community with a dynamic, accessible Internet resource that can enhance teaching and learning. 

### Contribute video clips and stories

*AT/AAC enABLES* is currently soliciting stories and videos about people who use AAC and/or AT. Those interested in submitting materials can go to [http://depts.washington.edu/enables/share\\_story.htm](http://depts.washington.edu/enables/share_story.htm) for details.

# Clinical News



promote specific political agendas. Researchers' sites often need to satisfy funders, as well as to share

## Teaching and learning about AAC

The Internet offers ready access to information for clinicians and teachers with a limited amount of time. While some service providers look to the Internet as a valuable resource, many still do not. "Not enough time" or "no access at work" are among the reasons mentioned. Today, professionals can use the Internet to participate in listservs, email colleagues, search for information about AAC devices and treatment approaches, take courses and "attend" web-based workshops.

## Purpose of AAC-related websites

Websites are created for a purpose, and it behooves the reader to figure out what that purpose is. An astute clinician quickly figures out that a primary purpose of most Websites is marketing. In some cases, the marketing is direct, *i.e.*, the Website sells products and you can order online. AAC manufacturers' Websites are examples. While these sites contain lots of good information, a primary goal is to sell products. See the **Equipment** section for more specific information about manufacturers' sites.

Some marketing is more subtle. Most Websites have specific ideas, philosophies, projects or programs they promote. For example, university Websites hope to attract future students, as well as share information. Professional organizations may wish to engage new members while supporting their current membership. Governmental Websites may

information about projects and research results. Clinicians who have Websites may feature a specific philosophy, approach or strategy. Websites supported by parent groups may recommend resources or post information they consider relevant to individuals with a particular type of disorder. To clarify the purpose of a website, service providers should find out who developed the site and who paid for it.

## Quality control

Currently there is minimal quality control on the Internet. Unlike in a peer-reviewed journal, claims go unchallenged, and information may or may not be accurate or reflect "best practices." Service providers must decide which professionals and which organizations have the most

reliable and useful Websites. Judith Kuster from Minnesota State University has tips on evaluating the content and performance of Websites.<sup>11</sup> [See Table IV.]

[Note: Kuster writes a column on Websites for speech-language pathologists and audiologists for the *ASHA Leader*. A recent article focused on *Valuable Lessons From Shared Memories* (August 5, 2003). She describes sites that enable clinicians to stay in tune with their clients' interests (no matter what their ages). Another article, *Picture It! Free Art for Therapy Materials* (May 13, 2003), describes sites with clip art.<sup>12</sup> Archives of her articles from 1995 to the present are available at <http://www.mnsu.edu/dept/comdis/kuster4/leader.html>]

The smart service provider assumes a critical attitude when reading Web content, because, no matter who develops a site, it is rare for it to have undergone any type of peer-review

**Table IV. Ways to evaluate a Website. Compiled by Judith Kuster<sup>11</sup>**

CONTENT ISSUES	PERFORMANCE ISSUES
1. Who created the resource/who is providing the content? Is he/she a recognized expert in this field? Was it created by parents, students, professionals, researchers, clients? [Note: Each has important messages to deliver, but you should know who it is.]	1. Does the site load quickly (most sites should load within 20 to 30 seconds)?
2. Why was the resource created? Who was it created for? What is its purpose? Does it provide information, sell a product, entertain? Is the site appropriate for children? [Note: A clue as to the purpose of the site may be at the very end of the URL. If it is .edu, it may be an educational site. If it is .gov, it is a US government site. If it is .com it may be, but isn't always, a commercial site designed to sell a product. If it is a .org site, it is probably an organizational site.]	2. Are the graphics, sound, and multimedia used to enhance the content, or do they distract?
3. Is the information on the resource accurate? Does it agree with other information resources that you know are reputable? Has it been through any type of review process?	3. Is the site accessible to people with disabilities? [e.g., Bobby approved]
4. What is the intended scope of the resource? Is the content provided comprehensive?	4. Is the site easy to "navigate"? Are the links on the site clearly indicated?
5. Do the links on the site lead to appropriate content?	5. Do the links on the site work?
6. Is advertising on the site clearly identified as advertising?	6. Is the design of the site attractive?
7. Is it current and kept updated, if that is appropriate?	7. Does the background interfere with reading the content?

process with regard to its content. There are no recognized “stamps of approval” except in the area of Web accessibility.

## Supporting families

Another challenge for clinicians is that families increasingly see the Internet as an enormous resource. At the present time, however, there is no easy way for families to know what expertise underlies the content on a particular website. Missing are the disclosures, standards and tools to assist family members to evaluate

### Searching for information on the Web

**1. Think about what you want to know.** For example, I’m currently looking for information on the use of AAC in the treatment of autism (e.g., SCERTS, ABA).

**2. Go on the Internet and type in the address for a powerful search engine.** I prefer to use Google at [www.google.com](http://www.google.com)

**3. When prompted, type in some key words.** I typed *augmentative communication autism treatment*, which yielded approximately 4,200 sites. Obviously, my key words were too broad.

**4. Narrow the search.** Google asks if you want to search within results. I selected that option and typed *SCERTS* (which is an approach to treatment I will write about) and got 14 sites. Then I cleared SCERTS and typed in *AAC and ABA controversy* (because I am interested in knowing more about that). This time I got 20 sites, including some on Facilitated Communication (probably because of the word controversy.)

**5. Scan down the list. Click on sites that seem interesting.** It’s fun and you can learn a lot!

**6. Save the sites you like by “bookmarking” them.**

Note: Using Google, you can also search for images, phone numbers, addresses and more. The more specific you can be, the more targeted your search results will be.

the quality of available information. Thus, families look for, but can not always find, information about which procedures, technologies and practices are likely to be effective in addressing a loved one’s communication needs and goals. The well-informed service provider needs to be a resource to clients as they sort through information about AAC on the Internet.

## AAC courses

An increasingly important Internet application for students and service providers are AAC courses. Professionals now have opportunities to take college courses and participate in continuing education programs while at home or at work.

Three AAC professionals who teach face-to-face courses and workshop and who have experience teaching Internet AAC courses through universities and/or for ASHA CEUs had the following insights to share.

1. Dr. Amy Finch is an associate professor in the Department of Communication Disorders at Fort Hays State University in Kansas.<sup>13</sup> She also offers Internet courses in AAC to undergraduate and graduate students and teaches on the faculty of the Masters of Liberal Studies (MLS) degree, which has an Assistive Technology (AT) tract. Finch says that getting information over the Internet is:

**Cost effective.** Universities, school districts and agencies see cost benefits in offering courses over the Internet because it opens up courses to more students. In addition, faculty who take Internet courses for continuing education may require a smaller travel budget each year. That can

## Field Notes

*Barb Lark is a speech-language pathologist working in the Everett Public Schools.<sup>14</sup> She uses the Internet as a resource to access some of her favorite Websites and she refers families to Websites. She said, “I find parents always check them out.” She also uses the Internet to keep the curriculum more interesting for her students with severe challenges. Although many children with cognitive challenges have difficulty reading the complex content, she tries to overcome the barriers by sitting side-by-side and talking them through. She also uses the Internet to motivate children. “One thing they love to watch are trailers from their favorite movies.” Here’s how she does it . . .*

Go to <http://enjoytheshow.com/trailer/index.cfm>. Save the html connection to access specific movie trailers. Using IntelliPics Studio, make a document that has three buttons for three different movies on the desktop. The software will scan between the choices, and the student can select the trailer he or she wants to watch. The software finds the html connection saved on the desktop and connects the student to the site for viewing. The trailer will stream the video using *RealOne*, so there is typically some “wait time.”<sup>14</sup>

*Lark also reported on taking an Internet course, “It was a unique learning opportunity.” She said, “geographic barriers were overcome and my classmates represented multiple stakeholder groups and brought a variety of backgrounds to the class. I especially liked being able to interact with AAC users by email.”<sup>14</sup>*



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be very appealing to college administrators.

**Convenient.** Some people are unable to travel, or choose not to.

**Efficient.** Staying up-to-date is difficult in the area of AAC and AT, which rapidly changes. An Internet course can offer current information to both faculty and students when they need it.

2. Dr. Patricia Dowden, Clinical Assistant Professor in Speech and Hearing Sciences at the University of Washington, has been teaching AAC online for more than seven years.<sup>15</sup> She reports that the advantages of online courses include:

**Guest lectures by AAC users.**

Every summer, Dowden has an AAC user join the class in one of the week-long online discussions. The students generally learn a great deal about the rich life this individual leads. The students report that an email discussion tends to “level the playing field” and make communication more equal, and they get to know the lecturer who uses AAC better than in a short classroom appearance.

**Diverse student population.** Her online classroom reaches not only SLPs and students of Speech and Hearing, but also special education teachers, classroom assistants, family members and AAC users. This has resulted in a much richer experience for all of the students than would happen in an on-campus classroom with only graduate students.

**Reaching out to family members.** With the on-campus AAC course, Dowden rarely has students who are family members



*Figure 1. From [www.eduworkshops.com](http://www.eduworkshops.com)*

of AAC users. However, many parents have joined her online course over the years, and it has been an enlightening experience for the parents, as well as for fellow students. One parent recently said the course was an “amazing experience” providing her family with the tools and skills to tackle the “daunting task” of organizing their life and home [to improve their son’s communication].

3. Pati King-DeBaun is a speech language pathologist who specializes in communication for children with severe physical and cognitive disabilities.<sup>16</sup> She is the owner of Creative Communicating, a company which develops and distributes materials that promote communication, creativity and emergent literacy in classrooms. She is also the creator of [eduworkshops.com](http://eduworkshops.com), an online training center that offers courses and workshops in the area of AAC.

I asked her why she decided to develop this “virtual” learning environment. She replied:

In 1996, I was getting ready to have children and needed the flexibility to stay at home more. I realized that the

World Wide Web might be the answer.<sup>16</sup>

This site now enables eight instructors to offer workshops/courses online. Each course is meant to be a near-replication of a hands-on workshop. King-deBaun reports that

... rather than the traditional “download, read and test” method of instruction, the philosophy of the workshops offered is more interactive... a “learn, use and discuss” approach.<sup>16</sup>

Almost 1000 people from approximately ten countries have taken the courses. For each course offered, participants can obtain continuing education credit in three ways:

- (1) A certificate of course completion. Includes documentation of course hours and graduate level equivalents.
- (2) ASHA CEUs (American Speech and Hearing Association). Each course is typically offered for 2.4 ASHA CEUs. Participants can sign up for ASHA CEUs at no extra charge.
- (3) Graduate units from Colorado State Occupational Therapy

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# Equipment



## Manufacturer sites

Most manufacturers now have Websites that offer descriptions of products and the opportunity to order online. Most companies offer catalogs to download (or to order), list their upcoming conferences/workshops and offer a way to contact the company for technical support. In addition, companies increasingly include valuable information on their Websites that you can download. Many of their Websites are rich in information and I highly recommend periodic visits. You will find ideas for using specific products, read articles about devices and the people who use them, get answers to frequently asked questions, see company newsletters, view presentations, take tutorials, get therapy ideas from colleagues, *etc.* In addition, companies are beginning to offer online courses.

When I communicated with representatives from these companies, many shared exciting new plans for expanding the support they provide on the Web. They will be adding new content in new formats to their Websites over the next few months.

A brief description of the kinds of information manufacturers' sites are currently sharing follows. The AAC-related manufacturers are listed in alphabetical order below and in Table V.

This article does not highlight content that relates to product descriptions, upcoming conferences, ordering information, special offers, company staff, *etc.* All manufacturers include that type of information

on their sites. Rather, the article focuses on website content that (1) gives clinicians and family members specific application ideas for using products, (2) offers clinical materials, tutorial and/or software in a downloadable format, (3) provides articles, newsletters and presentations in a downloadable format and (4) offers online courses.

**AbleNet, Inc.** [[www.ablenetinc.com](http://www.ablenetinc.com)] has ideas for using products from elementary through high school and beyond. You can select the type of idea, context, age range, *etc.* to access a range of ideas for each category. They also offer resource sheets and a newsletter called *PowerVision*.

**Adaptivation** [[www.adaptivation.com](http://www.adaptivation.com)] has ideas and examples of set-ups for some of their products. Materials include sample recipes, handouts and some articles previously published in *Closing the Gap*.

**Attainment Company** [[www.attainmentcompany.com](http://www.attainmentcompany.com)]

[[www.attainmentcompany.com](http://www.attainmentcompany.com)] offers a family section for sharing ideas plus clinical materials, including 30-day demo versions of software, samples of printed products, articles related to substance abuse, life skills, social skills instruction and the value of early labeling for students with severe disabilities.

**Dynavox Systems, Inc.**

[[www.dynavoxsys.com](http://www.dynavoxsys.com)] has a resource library with ideas for product uses and links to other sites. They have articles with case examples of individuals across the age span. They also have overlay pages (page sharing), papers and presentations, as well as information about funding.

**Enkidu, Inc.** [[www.enkidu.com](http://www.enkidu.com)] has a user area where people can share symbol configurations and a user forum. Asynchronous tutorials (really nice, with audio) for *Word Power* and *Velocity* are available. Demo software with speech, as well as publications and descriptions of

*Continued on page 10*

**Table V. Available AAC content on manufacturers sites**

Company	Ideas for using products	Online Course (synchronous)	Clinical materials	Articles/newsletters/presentations	Website Address
AbleNet, Inc.	X		X	X	<a href="http://www.ablenetinc.com">www.ablenetinc.com</a>
Attainment Company	X		X	X	<a href="http://www.attainmentcompany.com">www.attainmentcompany.com</a>
Dynavox, Inc	X	X	X	X	<a href="http://www.dynavoxsys.com">www.dynavoxsys.com</a>
Enkidu Research Inc.	X		X	X	<a href="http://www.enkidu.net">www.enkidu.net</a>
Intellitools	X		X	X	<a href="http://www.intellitools.com">www.intellitools.com</a>
Mayer Johnson Co.	X		X	X	<a href="http://www.mayerjohnson.com">www.mayerjohnson.com</a>
Prentke Romich Company	X	X	X	X	<a href="http://www.prentkeromich.com">www.prentkeromich.com</a>
Tash			X	X	<a href="http://www.tashinc.com">www.tashinc.com</a>
Words +, Inc.			X	X	<a href="http://www.words-plus.com">www.words-plus.com</a>
Zygo Industries	X		X	X	<a href="http://www.zygo-usa.com">www.zygo-usa.com</a>

*Equipment, Continued from page 9*

research grants can also be found on this site.

**IntelliTools, Inc.**

[[www.intellitools.com](http://www.intellitools.com)] has an activity exchange section, which is highly valued by practitioners. *Fun Two Three!* has sample activities. You can select by skill level, type of product, curriculum area and platform to get these ideas. There are sections for seniors and rehab also. Free software and upgrades, as well as other downloadable materials include Quick Start Guides, Tips and Tricks and product demos (with audio).

**Mayer Johnson Co.** [[www.mayerjohnson.com](http://www.mayerjohnson.com)] has tips, tutorials and sharing sections. For those with *Boardmaker* software on their computer, there are downloadable files with overlays, etc. There are also tutorials for *Boardmaker*, *Speaking Dynamically* and *Writing with Symbols* and some research articles to download.

**Tash, Inc.** [[www.tashinc.com](http://www.tashinc.com)] has a downloadable demo disk. Manuals are also available.

**Words +, Inc.** [[www.words-plus.com](http://www.words-plus.com)] has downloadable software for demos and for product upgrades. There is in-depth information about funding and articles about people who use Words+ devices.

**Zygo Industries.** [[www.zygo-usa.com](http://www.zygo-usa.com)] has video clips [with audio] with information about the LightWriter. The *Zygo Chatter* newsletter has lots of helpful clinical information and funding tips and ideas. Some sample overlays for devices also are available.

## Courses online

Two AAC companies (Dynavox Systems and Prentke Romich Company) are now offering courses over the Internet. Both are “synchronous,” meaning that participants must sign on at an appointed time and need to be using a phone and a computer (connected to the Internet) to take part in the course. The teacher and students are online at the same time and talk over the phone while viewing course content on a computer. These activities are briefly described below:

**Dynavox Systems Inc.** On August 20, 2003, Dynavox offered its first “virtual class,” entitled *Introduction to Gateway to Language and Learning*. Another course is scheduled for the fall, entitled *Strategies for Selecting and Organizing Vocabulary*. The Virtual Classroom will expand its course offerings with topics ranging from a basic introduction to augmentative and alternative communication (AAC) to advanced language application strategies. Courses are free. Participants must register online to receive instructions about how to participate. Information is available at <http://www.dynavoxsys.com>. First click on “Education Support.” Then click on “Virtual Classroom”

**Prentke Romich Company.** PRC has offered online training courses designed to help people learn how to program PRC devices since April 2000. Courses include: *Getting Started with Distance Education, Funding, Minspeak, Liberator, Vanguard, DeltaTalker, AlphaTalker, SideKick, Pathfinder, Intro Unity* and other Unity courses. A listing of current courses and times can be found at

[www.prentrom.com/msu/gs.html](http://www.prentrom.com/msu/gs.html)

Anyone who buys a PRC device is given two “seats” in a course (a physical computer connection) free of charge. To register, individuals go to the PRC website and enter the “Training and Conferences” area and select the “E-Training” link. Students are sent a password and conference call number to enable them to participate.

Reportedly, enrollment has increased every year. Over 400 people have taken courses from January 2003 to May 2003, including SLPs and special educators, parents, OTs, PTs, and some individuals who are using an AAC device.



# Governmental



## Access for all with Kevin Caves

*When it comes to the “digital divide,” disability is a more significant variable than ethnicity, income or age.*<sup>17</sup>

(Blaser, p.16)

The World Wide Web (WWW) is a wonderful tool for information and recreation. The Web is unlike other media because it is constantly changing and growing. Today’s Web development tools are so easy to use that almost anyone can create a website. Because of this, you may have visited sites that are difficult to navigate. For those who have difficulty using a computer mouse, navigating some sites is extremely difficult. In addition, sites that rely heavily on images can be difficult for individuals with visual impairments, and sites with lots of text may be inaccessible to persons with cognitive/linguistic challenges.

There is an international effort to enact laws and policies to insure that the WWW is accessible to people with disabilities. In the United States, for example, the Rehabilitation Act of 1998 requires Federal agencies to make electronic and information technology accessible to people with disabilities. Section 508 of the Act addresses the elimination of barriers in information technology and encourages the development of technologies that enable disabled employees and members of the public to access information in ways that are comparable to others. In addition, the Americans with Disabilities Act (ADA) seeks to ensure equal opportunities for

persons with disabilities in employment, state and local government services, public accommodations, commercial facilities and transportation by requiring “reasonable accommodations.”

*We can move the “should it be accessible?” discussion from “it’s the right thing to do” (with conditions attached) to “It’s the only thing to do.”*<sup>17</sup> (Blaser, p.45)

## W3C and WAI

The World Wide Web Consortium (W3C) is an international group with over 400 member organizations. The W3C has working groups. One is the WAI—Web Accessibility Initiative, which recently published the *Web Content Accessibility Guidelines 2.0* (June 2003).<sup>18</sup> The guidelines outline design principles for creating accessible Web content and address a variety of Web-enabled devices, including phones, handheld devices, kiosks, network appliances, *etc.* These guidelines are an outcome of collaborations among industry, disability and research organizations, as well as governments from around the world.<sup>19</sup>

*Many providers of inaccessible materials may not even know their materials are inaccessible.*<sup>17</sup>

(Blaser, p.17)

## Accessibility tools and checkers

In order to facilitate implementation of the WAI recommendations, tools are available for Website developers to make sites accessible. One example is *Dream Weaver 4.0* by MacroMedia, which assists developers to adopt W3C and WIA standards for accessibility.<sup>20</sup>

*Web designers often ignore access, even when it’s easy to provide. Although Macromedia’s “Flash” plug-in has instructions that allow one to make it accessible, if they’re followed a tenth of the time I’d be surprised.*<sup>17</sup>

(Blaser, p.16)

Two examples of ways to check to see if website access standards are met are Bobby<sup>21</sup> and A-Prompt.<sup>22</sup> Both are software programs designed to help expose and repair barriers to accessibility and encourage compliance with existing guidelines.

## Web accessibility for individuals who rely on AAC

Investigators at WebAIM and Temple University are developing tools for individuals with disabilities based on the work of Len Kasday.<sup>23</sup> The Web Accessibility Versatile Evaluator (WAVE) is a comprehensive website accessibility evaluation tool and can be found at [www.wave.webaim.org/index.jsp](http://www.wave.webaim.org/index.jsp). The White Paper, *Web Browsing Challenges, Strategies and Tools for [AAC Users and] People with Motor Disabilities* is the basis for “Accent” (Accessibility Enhancement Tool) a Web tool in beta version 1.5 that may be found at [www.accent.webaim.org/index.jsp](http://www.accent.webaim.org/index.jsp).

## The future

The WWW is an information resource that will continue to evolve and challenge individuals with disabilities. However, through advocacy and the continued work of researchers and standards organizations, the Web can evolve in ways that are more accessible to people with all types of disabilities. 



## Use of the Internet in AAC research

Programs at Penn State, Temple University and the University of Nebraska have demonstrated that Internet tools (largely freeware) and other technology innovations can assist researchers and developers in AAC.<sup>24</sup> The Internet can remove barriers to participation in research for many stakeholder groups, particularly for individuals who rely on AAC technologies to communicate. Distance and costs (monetary, physical and emotional) that are associated with travel to a university or clinic are widely recognized barriers. In addition, the Internet enables people from more diverse geographic locations and ethnic groups to participate in research. This can make the results more useful and meaningful. Also, the Internet can support certain types of designs that researchers have found useful in AAC research, *e.g.*, survey research and participatory action research (PAR). Finally, Internet tools can make it possible for participants to test prototypes, try them out and give feedback, which can greatly facilitate the research and development process.

The AAC-RERC, a partnership that involves researchers from across the United States (Duke University Medical Center, the University of Nebraska, the University of Buffalo, Temple University, Penn State University, the University of North Carolina at Chapel Hill and Augmentative Communication, Inc.), has found that Internet research tools can assist in the research and development process in

several important ways. Two are described below.<sup>24</sup>

### 1. Data collection

a. *Collecting data from multiple AAC stakeholders using email and an address list.* Email is helpful in cases when researchers need to know the identity of their participants so they can conduct follow-up discussions and ask for clarifications. [Note: In other circumstances, it is important that participants remain anonymous.]

An example of a project using email follows.<sup>24</sup> Twenty-six AAC intervention specialists, located across the United State and Canada, were placed on an email address list and sent a message inviting them to participate in the project. Attached to the email was a standard questionnaire. In the message, researchers delineated the purpose of the project. Clinicians were informed they would not be anonymous and were told that by completing and returning the questionnaire they were agreeing to participate in this project. Each was asked to complete the questionnaire and return it to the AAC-RERC staff using the “reply” function of his or her email application.

For this project, the response rate was high and responses were prompt, as 92% of the respondents completed the questionnaire following the first request. Following the second request, a total of 98% of the participants responded. Data collection was completed within ten days. A summary of results was electronically sent to each of the respondents.

b. *Collecting data from participants using a specialized WWW site.* In another project where anonymity was important, AAC intervention experts and AAC users responded to a questionnaire by accessing a

specialized site.<sup>24</sup> This approach allows for an asynchronous response strategy, which is helpful for individuals who require extensive time to complete a questionnaire. Participants accessed the Website to read a letter, which described the project and presented the Institutional Review Board guidelines for the project. It also informed individuals that their responses would be confidential, and that by completing the questionnaire and submitting it, they would have agreed to participate in the project.

Each AAC user and AAC specialist was contacted by telephone. Then, using a Virtual Network Computing application (VNC) [described in more detail in #2 below], researchers demonstrated a prototype version of an interface known as *AAC Menu* from a computer in their laboratory.

VNC works as follows: All parties see the same screen, and VNC software allows the remote computer to interact with and even control the host computer. [See Figure 2.] Of course, access is secured through the use of passwords and the IP address of the server computer.<sup>25</sup>

Researchers manipulated the interface from the host computer to show participants various features and functions while they described their actions via the telephone. At selected times, the interface was also manipulated by the participant using his or her own computer system.

Following the demonstration, respondents were asked to complete a questionnaire located on the specialized Website. Respondents received brief instructions about how to access the questionnaire. The questionnaire asked participants about the extent to which they felt

the proposed interface had a series of design specifications. Each person had one week to complete the questionnaire and eventually everyone did.

In yet another project, persons with ALS who relied on AAC, their spouses and primary caregivers provided the research team with a list of frequently used messages (single words and phrases).<sup>24</sup> They gave information according to specific message categories, such as requesting assistance, discussing feelings about the disease and so on. Initially, researchers contacted participants personally and presented the IRB guidelines for the project. After each had provided consent, they were given a copy of the questionnaire in paper form and were asked to complete the questionnaire on a specialized Website, section by section. Each section of the questionnaire was submitted electronically to the laboratory at the University of Nebraska-Lincoln for analysis. This strategy allowed individual AAC users to: (1) work on the project at their convenience and (2) prepare their responses using their own computer technology and AAC technology. In addition, it permitted participants to submit responses confidentially with regard to the research team and, in many cases, with regard to family members, caregivers or friends. Finally, because the research team received responses in electronic format, they did not have to enter data. Message lists could be analyzed and cataloged without delay.

## 2. Remote Computer Control

As described earlier, another useful research tool is remote computer control. It can help researchers demonstrate software at remote sites, conduct computer training, provide technical support

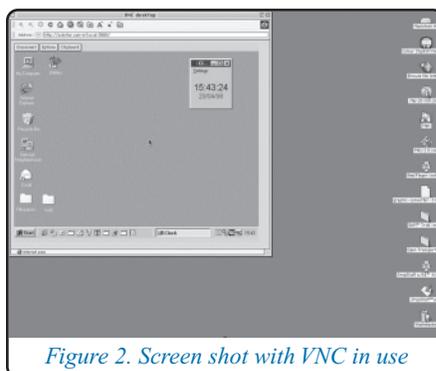


Figure 2. Screen shot with VNC in use

and involve multiple stakeholder groups in research and development projects. In the AAC-RERC, several partners use Virtual Network Computing (VNC) to enable one computer to gain control of another computer.<sup>25</sup>

One computer acts as a “server” and other computers are “viewer” computers. David Beukelman reported he has used up to four viewer computers in some sessions. The rate of response, however, is dependent on the number of viewer computers and the speed of the Internet connection.<sup>24</sup>

Researchers can use remote computer control over the Internet for several purposes, including:

a. *Involving experts in evaluating software by viewing and operating prototypes.* Researchers may demonstrate early ideas and prototypes to colleagues using VNC. For example, researchers at the University of Nebraska completed 20 evaluations of *AAC Menu* using VNC. Informants also provided written comments or spoken comments over the phone.<sup>24</sup>

b. *Computer support.* VNC can allow AAC-RERC staff to evaluate and fix computer problems for consultants, field test personnel and AAC users at remote sites so they can participate in a project. Staff also can use VNC to control a remote computer and download software applications.

c. *Displaying a video to a colleague or consumer who can evaluate it or give their permission to use selected segments.* When developing a video or preparing a presentation, AAC-RERC staff can contact individuals involved and demonstrate the pertinent tape segments.

d. *Computer training.* Researchers can use VNC in training someone at a remote site to operate software. For example, if a partner or consultant were unfamiliar with net conferencing software, AAC-RERC staff could download the software for the individual and then teach him or her how to use it. They would also use a conventional telephone for simultaneous communication with the remote site during the process.

e. *Research Meetings.* A virtual research consortium involves researchers at a number of locations. VNC is used regularly to support research meetings. For example, prior to a presentation, staff from one site can prepare a PowerPoint presentation that contains data collected at a number of sites. The presentation is loaded onto a server computer and then researchers at remote sites sign on as viewers. Using the telephone for verbal interaction, the presentation is discussed, and changes can be made.



[Special thanks to David R. Beukelman for his substantial contributions to this article.] For additional information, go to <http://aac-unl.edu> (Virtual Tools) and also visit <http://www.aac-rerc.com>

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Department. An equivalent of 15 semester hours of instructional time (or 1 credit) is offered.

Participants pay \$55 per credit directly to Colorado State University.

The classes/workshops cost \$250 each and run for eight weeks. The formats are similar. Instructors assign activities both on and off the computer for each topic area. Every two weeks a new topic is posted. For example, students may need to visit other Websites, download programs, read articles, do projects, view videos, *etc.* The courses are asynchronous. The instructor uses slides that look like a PowerPoint presentation to introduce each topic and then require discussion among participants online.

Many different classes are offered each year and some are repeated. All are interactive except for the Independent Study courses. In most, participants receive a CD, overlays and other supportive materials to use during and after the course. To illustrate both the range of topic areas and the practical nature of the expertise that an individual can now tap from anywhere in the world, I have included below brief descriptions of the 13 courses planned for this one site in 2004. (Imagine what an exhaustive search of all AAC course offerings by 2005 might yield).

**1. As Simple as ABC! Simple Strategies for Emergent Literacy.** Pati King-DeBaun. This workshop highlights simple activities that set the stage for emergent literacy success. Information is for parents, preschool teachers, HeadStart teachers, speech language pathologists, special education teachers, ESL teachers, and other supportive personnel.

**2. Autism and Literacy: Practical Solutions.** Susan Norwell and Pati King-DeBaun. This class focuses on the development of literacy skills for children on the autism spectrum. Instructors emphasize the development of comprehension for hyperlexic children, language development and processing skills for sight readers, and strategies to help children who are nonverbal to become literate.

**3. Singing to Learn: Using Music to Jump Start Reading.** Caroline Musselwhite. This workshop shares strategies for accessing songs and using songs to support learning. The focus is on independence, interaction, reading, writing and phonics. Participants will learn light and high tech ideas for jump-starting learning through music.

**4. Adapting the Visual Arts for Students with Severe Disabilities.** Pati King-DeBaun. This class focuses on making adaptive art tools and using them with individuals who have severe physical and/or cognitive disabilities. Participants learn to use art to develop or foster interactive communication and emergent literacy skills simultaneously.

**5. Emergent Writing Success Workshop.** Caroline Musselwhite and Pati King-DeBaun. Participants learn how to create appropriate and motivating activities and materials that capitalize on support and on writing success using both high and light technology as emergent writing scaffolds.

**6. Lets Start Communicating Workshop.** Pati King-DeBaun. Participants learn strategies to promote the development of language and communication through play, using computer technology and augmentative communication techniques.

**7. Emergent Literacy for Older Students.** Pati King-DeBaun. Participants learn how to develop and create age appropriate activities and materials to address the communication and emergent literacy needs of students in middle school, high school and beyond.

**8. Storytime Implementation Strategies Workshop.** Pati King-DeBaun. The emphasis of the course is on story selection, physically adapting materials for greater student participation and strategies to develop emergent literacy skills and beginning communication skills.

**9. Assistive Technology Solutions for Individuals with Learning Disabilities.** Scott Marfilus. This course considers aspects of learning disabilities and offers participants a framework with which to provide assistive technology support in remediating and accommodating individual learning differences.

**10. Developing Representational Play Skills for Children with Severe Disabilities.** Susan Norwell. This workshop help facilitate play with children who have limited expressive language, poor motor planning skills, limited physical abilities, difficulties with interaction and/or poor organizational skills. Participants will gain a basic understanding of Drs. Greenspan and Weider's Developmental Stages of Play and the concepts of affective engagement.

**11. Let's Talk Together: Creating Interactive Augmentative Communication Opportunities.** Ylana Bloom and Dolly Bhargava. This workshop offers solutions to supporting effective interaction by considering each person's preferences, abilities, environments and communication tasks. Participants will learn practical ways to support effective communication partners using a multi modal AAC approach.

**12. Everyone Can Participate Through Communication.** Ylana Bloom and Dolly Bhargava. Phase 1 of the course focuses on principles of assessment and intervention. Phase 2 supports participants to complete a communication assessment for a specific individual. In Phase 3, participants design a communication "action plan" for the focus individual.

**13. Curriculum Development with Real Photos and QuickTime Movies in Intellipics Studio Workshop.** Patti Rea. Participants will explore IntelliPics Studio and learn tips, tricks, and techniques for using real photographs and *QuickTime* movies to develop an activity to support the curriculum.



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## Resources

- David R. Beukelman, Dept of Special Education and Communication Disorders, 202 Barkley Memorial Center, PO Box 830732, Lincoln, NE 68583. 402-472-5463. [dbeukelman1@unl.edu](mailto:dbeukelman1@unl.edu)
- Kevin Caves, Duke Medical Center, Box 3888, Durham, NC 27710. 919-681-9983. [kevin.caves@duke.edu](mailto:kevin.caves@duke.edu)
- Pati King-DeBaun, Creative Communicating PO Box 3358, Park City UT 84060. 435- 645-7737. [pati@creative-comm.com](mailto:pati@creative-comm.com)
- Patricia Dowden, Dept of Speech and Hearing Sciences, PO Box 354875, Seattle, WA 98195. 206-616-6217. [dowden@u.washington.edu](mailto:dowden@u.washington.edu)
- Judith Kuster, Communication Disorders and Rehabilitation Services MSU BOX 77, Minnesota State University, Mankato, Mankato, MN 56002-8400. [judith.kuster@mnsu.edu](mailto:judith.kuster@mnsu.edu) 

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