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Merging onto the Information Superhighway

Equipped with a computer and a modem or an Internet link, students can broaden their communication horizons by crossing barriers of time, distance, and culture. In this expanded universe, one need only turn on his or her computer to gain access to people and resources throughout the world.

Because computer networks open up a range of new communication options, students with disabilities can particularly benefit from this kind of unequaled access. Using telecommunications networks, students with disabilities have the opportunity to:

- communicate in a way that makes their disability "invisible"
- share experiences and trade practical suggestions with others who have similar disabilities
- exchange useful information with disabled and non-disabled peers, teachers, mentors, and others



Cotting School students access computer networks using a variety of adaptive devices. Pictured is Mark Hutchinson using a head stick to type a message.

Prodigy™ is “Key to Treasure Chest” for Shannon Lilly

Shannon Lilly, the student profiled in the following story, passed away in 1994.

For Shannon Lilly, discovering the on-line network Prodigy, was “like finding a key to a treasure chest,” according to her mother, Jeanne Lilly.

“She found sources of creativity and challenge, sources of information, recreation, and socialization, sources which boosted her self-image, and a sense of independence and control,” said Jeanne Lilly of her daughter, a seventh grader with limited mobility due to muscular dystrophy.

Ever since the first grade, Shannon had been mainstreamed in the Brockton, Massachusetts Public Schools. As her motor functions became increasingly impaired, Helen Virga, the Brockton assistive technology specialist looked for technologies that would allow Shannon to communicate more easily and to continue to participate in her class assignments.

Shannon was not able to use a standard keyboard because of her limited mobility, so Helen ordered a Macintosh® Powerbook to mount to Shannon’s power wheelchair. Using a trackball and KE:NX™ (adaptive software with an on-screen keyboard display), Shannon was able to have access to a wide range of computer



Using the computer network Prodigy™, seventh-grader Shannon Lilly launched a small business that allowed her friends and family access to the network’s many resources.

applications. While the adaptive hardware and software provided access, it was the computer network Prodigy which opened up a range of new possibilities for Shannon.

In the four-month winter flu season, Shannon was tutored at home because of her tenuous health. During this time, it was often difficult to fill up the hours of the day with activities that were engaging, stimulating, and interactive, and even more importantly, tasks that Shannon could do without assistance. Once Shannon discovered Prodigy, this problem was solved! Suddenly there weren’t enough hours in the day for Shannon, and her mother often had to force her to log off and go to bed.

Shannon used Prodigy in a variety of ways. She read the news screen on a daily basis, taking particular enjoyment in being the first in the family to know and share the news of the day. Shannon also participated in a number of Prodigy bulletin boards. The Baby-sitters Club was one of her favorites – she was a club member, read stories on-line, and participated in the discussions about the characters and events in the stories. Prodigy also provided her with a link to her school. She sent e-mail messages and personalized cards to friends, the computer teacher at her school, and Helen Virga.

Using her computer expertise and the wealth of resources offered through Prodigy, Shannon launched “Shannon’s Stuff,”™ a small business that offered her friends and relatives a variety of services. She downloaded soap opera summaries for those die-hards who had missed a few weeks. After using Prodigy to access encyclopedia and magazine articles for her own school project on whales, Shannon was able to locate and download information for her brother’s research project on William Penn. And for the sports enthusiasts among her clients, Shannon downloaded and compiled sports statistics – which kept her especially busy during the NBA playoff season.



Shannon Lilly advertised her business “Shannon’s Stuff” in a newsletter that she wrote and designed on her computer.

Like any smart entrepreneur, Shannon developed a price list and a production schedule. She also advertised her services in “Shannon’s Stuff™ Newsletter” a publication she wrote, designed, and distributed. “She took pride in the fact that she was able to do something for others,” said Jeanne Lilly.

The Prodigy network not only offered Shannon an outlet for independence and creativity – it also provided her with an opportunity not to be viewed primarily as a girl with a physical disability. “No one on the other end was aware of anything except of what she provided. She was able to express herself freely, and show her potential without any misunderstandings or uneasiness,” said Jeanne Lilly.

Students Team Up in Cyberspace

After six months of reading messages on VIP – a computer network administered by the American disABLEd Foundation – Greg Walsh finally posted a message of his own about public transportation access. When someone responded, Greg “nearly jumped out of his wheelchair!” according to Kate Moore, a communication therapist at the Cotting School, a day school in Lexington, Massachusetts for children with learning, communication, and physical disabilities.

Computer networks have had a powerful effect on Greg and some of the other students with severe speech and/or physical disabilities. Because many of them have only limited opportunities to engage in conversations with people outside of their school and immediate family, the network offers these students a unique opportunity to learn a variety of skills.

How do you start a conversation with someone? How do you respond? How do you give enough information so that the reader can understand what you are trying to say? How do you word a comment or ask a question that will elicit responses? These are some

of the questions that provide Kate and her students with a rich context for learning communication and social skills.

Another group of Cotting students also use the VIP network to communicate with students outside their school. Students with physical and communication disabilities in Cecelia Jones’ biology class were paired with research partners from Vicky Goldberg’s regular-education science class at the Brimmer and May School in Brookline, Massachusetts, a few towns away. Cecelia and Vicky had met over the network and decided to initiate a collaborative classroom project.

Each of Cecelia’s students at Cotting designed and carried out an independent research project that culminated in an extensive lab report incorporating background research. After exchanging messages of introduction on the VIP network, each Cotting student described his or her project to their Brimmer and May partner. On the network over the next few months, Cotting School students continued to discuss and explain their project, their findings, and their results, while their partners asked questions, offered feedback, and made suggestions.

Next semester Cecelia and Vicky plan to repeat this project, only this time both student groups will conduct independent projects and share their findings. The teachers are also already making plans for the two student groups to meet at the end of the project.

“The students have certainly benefited from their conversations with the other students. They’ve had to learn to express their ideas in a way that’s still social, but less intimidating than the immediacy of face-to-face interaction. And of course, it’s been a real boost to their confidence, to be guiding non-disabled peers,” according to Cecelia.

For many students at Brimmer and May, the project provided them with a first-time opportunity to interact with a peer who had a disability. Did the Cotting School students ever discuss their disabilities with their Brimmer and May partners during the project? “Some did, some didn’t, but being disabled was the least important part of the communication,” Cecelia said.

At the Cotting School – a school for children with learning, communication, and physical disabilities – students collaborate using a variety of communication tools including computer networks and eye gaze boards (pictured).



Computer Network Resources for Students with Disabilities

DO-IT! (Disabilities, Opportunities, Internet-working, and Technology)

Through the Do-It Scholars program at the University of Washington, high school students with disabilities who have interests in science, mathematics, and engineering are provided with the tools, training, and opportunity to use the Internet to explore academic and career interests.

For information about DO-IT write, call, or e-mail:

Sheryl Burgstahler
Director, DO-IT
University of Washington
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Seattle, WA 98195
Voice/TDD: (206) 685-DO-IT
e-mail: doit@u.washington.edu

Excerpts from student autobiographies submitted via e-mail and compiled into the DO-IT Snapshots 1994 album:

"...I have Cerebral Palsy and use my computer by entering Morse Code through a sip-and-puff device..."

"I use Head Master so I can access the computer and the Internet using my head. My interests are astronomy, art, and writing."

"The DO-IT Program gives me information about careers in the science and math world. It also gives me a way to communicate through e-mail since using the telephone is difficult for me. The Program has given me a fresh outlook on my future..."

"I am totally blind, with two glass eyes. Because of this disability, it is difficult for me to obtain information for my school work and personal enjoyment. That is, it was difficult before I entered the DO-IT Program. My computer has speech output. With Internet access I have information at my fingertips. My interests include biology, computer science, and logical reasoning and with the Internet I can study these topics. But more importantly, I have all of the information for school projects. I no longer have to get help from fellow students to do my research papers. In fact, a few have even asked me for help."

PC Pals

PC Pals is a computer bulletin board on America Online, which is "geared to teenagers who are deaf and hard of hearing (and their hearing friends, too)," according to America Online™. PC PALS includes three services – e-mail, the PC Pals Bulletin Board folder, and a monthly chat group.

For information contact:

The Alexander Graham Bell
Association for the Deaf PC Pals
3417 Volta Place, NW
Washington, DC 20007
(202) 337-5220 (V/TTY)

Kidlink

Kidlink is an international networking service, accessible via the Internet, exclusively for students between the ages of 10 and 15. More than 23,000 students from over 60 countries have participated in one-on-one exchanges, group chats, topical discussions, and curriculum-based projects.

This network provides students with disabilities the opportunity to participate in discussions and activities with students from around the globe.

For information contact:

Odd de Presno
KIDLINK Project Director
opresno@extern.uio.no
or
kidlink-info@VM1.NODAK.EDU
or
KIDLINK Gopher: kids.ccit.duq.edu

More on NCIPnet



- Classroom-tested ideas for telecommunications projects
- Information on how to access the DO-IT gopher site and other online resources
- Descriptions of books, journals, and other publications providing information about telecommunications
- Help getting started using Kidlink from a member of the NCIPnet community



For more information, contact:

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