RESOURCE CENTER

Telecommunications in education, from elementary school through college, is no longer just a dream.

By MARGARET MORABITO

Online technology is opening up new educational opportunities for students who can't physically attend a school or reach a teacher because of work responsibility, distance, disability, cost or timing. Students can log onto a network any time of day or night and access libraries of research material, as well as communicate with teachers from all levels of education.

I started investigating how educators were using telecommunications several years ago and have followed their gradual acceptance of this medium. The application of telecommunications to education has gone through an experimental stage, and the technology is now being used productively on the local, state and national levels. The electronic schoolhouse, from elementary through graduate school, is no longer just a dream of a few visionaries; it's a proven concept for teaching, research and student interaction.

TEACHING NETWORKS

Telecommunications can be used for direct teaching, and several national networks have been working on development in this area. They're discovering a number of approaches to using the online medium.

Perhaps the best-known of these teaching networks is the Electronic University (see the Resource Center, *RUN*, March 1987). The Electronic University's students are working adults who are studying for college degrees offered by various educational institutions that use the network to deliver courses. EUN uses its telecommunications network as a communication vehicle. Students get their assignments through electronic mail and do their studying offline, then mail the assignments and any questions they may have to their teachers electronically. The study materials are traditional textbooks and workbooks.

Another teaching network, Control Data's PLATO, focuses on training and education in business and industry. PLATO's approach to teaching is totally different from EUN's. Computer-based educational programs have been specifically developed for the network. Students log onto the network whenever it's convenient and proceed at their own pace through the course lessons. Support personnel are available for answering questions through electronic mail, and students can post questions on public message boards.

Nova University, in Fort Lauderdale, Florida, runs another teaching network from its campus. Among other things, this network offers doctoral degree programs to professional educators. Students use the network primarily for electronic correspondence with their professors; traditional hard-copy study materials remain the basis of their work. They also communicate through message conferencing and real-time conferencing, although the latter isn't widely used.

Educational online networks aren't aimed just at college and professional students. I started the Tutoring Center on QuantumLink last year to help secondary and elementary school students with their schoolwork. One of the unique features of this online school is the live classroom sessions in which students receive lessons and one-on-one tutoring from teachers in real time. Many students come to the Center only when they need extra help with their schoolwork; others attend classes regularly to pick up new skills.

Tutoring Center teachers meet with students for hour-long classes and provide supplemental study materials for students to download and use at home. The Tutoring Center offers message boards, databases for text files and computer programs, and online computer-based quizzes.

My most recent project with online education is the Q-Link Community College (QCC), which just opened this past summer. It grew out of a demand from Tutoring Center students for structured courses. The courses last eight weeks and are taught in live conference rooms. Some of them require students to use a hard-copy textbook; others provide all course materials online for students to download. The college is based on the model of a real college, with courses carrying credits and transcripts kept for all students.

These networks are just a sampling of what's going on in the national arena. There are also dozens of local educational BBSs being set up inside schools to supplement normal instruction. I reported on one of these in my August 1986 Resource Center column. Now I'm compiling a list of educational BBSs, and you can help. If you're running an educational BBS, please send me a letter detailing your activities.

RESEARCH OPPORTUNITIES

The most widespread application of telecommunications to education is probably bibliographic research. Students can log onto a network to access millions of articles and other sources that can be used for school research projects. Gone are the days when you were limited to your small high school and town libraries. If your school has just one computer with a modem, its students can access some of the largest libraries in the world.

Teachers are discovering that online libraries encourage involvement in the research process. Students like to work with computers, plus they can get many more citations much faster this way than from manually searching through hard-copy indexes. They can also find references from journals and reports that have just been released, rather than having to rely on printed sources that are often outdated. The speed and currency of electronic research is freeing up time for students to be more analytical and imaginative in their writing.

Several networks are tailoring their materials and fees to schools. BRS, for example, offers two discount educational packages. BRS/Instructor is available at special low rates to schools (elementary through graduate school) that want to teach students how to telecommunicate and perform online data searches. It provides access to 70 databases that cover subjects such as education, business, finance, science, medicine, the social sciences, the hu-

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The second package, BRS/Educator, is offered to professional educators, such as teachers, school librarians, administrators and media center coordinators, in the K–12 grade range. It provides access to about 100 databases, with 12 specifically in the field of education.

DIALOG is also cultivating the educational market with its bibliographic research capabilities. DIALOG's Classroom Instruction Program (CIP) gives schools access to 220 databases at a discount rate of $15 per hour. Included in the package are a lab workbook and reference manual, a list of accessible databases, copies of documentation for the network's online training, up to ten passwords and two free training sessions for faculty members.

Classmate is an extension of CIP that's specifically designed for elementary and high school students. It offers schools access to 50 of DIALOG's databases through the Knowledge Index, an easier-to-use version of DIALOG. The Knowledge Index can be accessed 24 hours a day for $15 per hour.

DIALOG has created curriculum materials for this package that are a big attraction to schools. All Classmate users get a student workbook that teaches how to log onto the Knowledge Index and how to use various search techniques. Other materials accompanying Classmate include a user's manual, a demonstration disk to run offline and a subscription to the Knowledge Index newsletter.

Recently, Addison-Wesley came out with an online research package aimed specifically at schools. Called Einstein, it's composed of 90 online databases from six database services: BRS, Data-Solve, DataTimes, DIALOG, Wilsonline and VU/TEXT. The Einstein databases are tailored to both faculty and student research and are searched with an easy-to-use procedure that's uniform among all of Einstein's services. A user's manual, a database directory and passwords come with the subscription. This system charges by the search, rather than by the minute.

I've just touched on the educational opportunities currently available online. There are literally dozens of other networks and services, on both the national and local level, that you can tap into if you're a student, teacher, administrator or interested parent. The whole area of communication among students and professionals is exciting.

If you'd like more information about the services I've mentioned in this article, see Table 1 for a list of their names and addresses. ■

If you're using Commodore computers for educational purposes (at home or in school) and would like to share your experiences through the Resource Center, write me a letter detailing the equipment you're using, subject areas you teach, grade level or age of your students, software you're using and any other information you feel like including.

Also, if you'd like to donate public domain educational programs to the Resource Center for sharing with other educators or parents, please send along a disk with a brief description of the program. Send correspondence and disks to:

Margaret Morabito
Resource Center
c/o RUN Magazine
80 Elm St.
Peterborough, NH 03458

You can also leave mail in my online mail boxes: CompuServe (70616,714) or Quantum-Link (MARGM).

Table 1. A sampling of educational online services.

BRS Information Technologies
1200 Route 7
Latham, NY 12110

DIALOG Information Retrieval Service
3460 Hillview Ave.
Palo Alto, CA 94304

Einstein, The Information Access Tool
Addison-Wesley Publishing Company
2725 Sand Hill Rd.
Menlo Park, CA 94025

Electric Chalkboard BBS
Ken Blystone, SYSOP
El Paso, TX
BBS phone no. 915-593-3862

Electronic University
TeleLearning, Inc.
1150 Sansome St.
San Francisco, CA 94111

Nova University
Center for Computer-Based Learning
Computer Education
3301 College Ave.
Fort Lauderdale, FL 33314

PLATO
Control Data Corporation
PO Box O
Minneapolis, MN 55440

QuantumLink
Tutoring Center and Community College
8620 Westwood Center Drive
Vienna, VA 22180