

# FORUM

## EDUCATIONAL TECHNOLOGY ENHANCES THE LEP CLASSROOM

Matthew Soska

Forum v17 n5, Fall 1994

Not too long ago, when we said educational technology we were referring to radio, television, film strips, overhead projectors, tape recorders, and videocassette recorders (VCRs). Educational technology has advanced rapidly during the past few decades. Today, when we say educational technology we are referring largely to a vast array of computer-based technologies, such as compact disc-read only memory (CD-ROM), interactive audio, interactive videodisc, local area networks (LANs), hypermedia, and telecommunications.

Research efforts are now under way to investigate the effectiveness and efficiency of a broader range of computer-based instruction—that of multimedia and telecommunications. "Multimedia instruction" can be loosely defined as technology integrating some, but not necessarily all, of the following in an interactive environment: text, graphics, animation, sound, and video. The complexity of such applications complicates the research process; however, the following observations can be made based on the attributes of the technologies:

- **Multisensory delivery:** Research indicates that students learn through different modalities, such as audio, visual, or kinesthetic (Barbe, and Swassing 1979; Carbo 1988).
- **Increased self-expression and active learning by students:** New technologies provide stimulating environments in which students become active learners. A long-term study sponsored by Apple Computer revealed that students had a "higher degree of social awareness and self-confidence; they [were] more independent and [had] more positive attitudes about learning and themselves; they [were] able to experiment and problem solve with greater ease..." (Apple Computer, Inc. 1991).
- **Cooperative learning:** Technology provides many opportunities for students to work cooperatively. Research supports the use of group interactions to increase instructional effectiveness and efficiency, as well as positive social interactions (Johnson, Johnson, and Stanne 1986; Schlechter 1990).
- **Communication skills:** Communication skills can be enhanced by utilizing technology in small groups and through the use of telecommunications (Steinberg 1992).
- **Multicultural education:** Technology can promote cultural diversity and understanding by linking students from across the country and around the world (Salomon 1991).
- **Motivation:** Increasing student interest and motivation is a constant challenge for educators. Technology can make learning exciting and relevant and lead students to spend more time on task.

### *Implications of Educational Technology for LEP Students*

For many years, teachers used the computer to provide supplemental or additive exercises. In recent years, advances in computer technology have motivated teachers to reassess the computer and consider it an integral part of daily learning. Today, technology gives teachers the capacity to significantly enhance their students' language and cognitive development. They can utilize the technologies described here for instructional testing and assessment, to teach culture, to help students learn academic content and develop critical thinking skills, and to expand students' speaking, listening, reading, and writing skills. Speaking: Dialogues can be used in English as a second language (ESL) classes to develop speaking skills.

- **Listening:** Interactive videodisc and CD-ROM programs can provide excellent listening comprehension activities.
- **Reading:** Reading skills can be developed using computer-assisted instructional programs that vary in sophistication from word recognition to reading comprehension.
- **Writing:** Technology-assisted activities such as fill-in-the-blank, multiple-choice, and true/false can help students to write at the word level. Databases and spreadsheets provide students opportunities to practice and develop information retrieval and problem-solving skills. At the discourse level, word processors are ideal for composition or free writing practice. Some are bilingual and provide on-line assistance with dictionaries, spell checkers, and grammar helpers. When used interactively among students (e.g., through a LAN), technologically-based cooperative writing activities become strong motivators for students to develop their writing skills.
- **Culture:** Video-based activities are well-suited for observing cultural diversity in a live context.
- **Testing:** Computer-assisted testing now provides a more comprehensive and accurate way of testing student language and cognitive skills. Students can also self-test using computer-assisted instruction. Given the right kinds of activities and programs, teachers can also use testing in an instructional mode.

With the advent of technology-assisted instruction, changes in the roles of student and teacher will occur. Students will have increasing responsibility for their own learning; teachers will become guides and resource experts, circulating among students working individually or in small groups (Willettts 1992).

### ***Title VII Programs***

Two software-based programs funded under Title VII Academic Excellence Program grants exemplify the effective integration of technology in the LEP classroom.

Computer Education for Language Learning (CELL) was developed by the Irvine (California) Unified School District in 1983 with a Title VII grant. It is a diagnostic/prescriptive program designed to improve English reading and language arts skills. LEP students in grades one through six have made significant gains using computers and commercial software selected by CELL (Chandler 1989).

The CELL program was designed to be easily implemented by school site personnel with minimal support and training. Appropriate commercial software has been correlated to an English as a second language (ESL) continuum for use in lessons supervised by a computer lab technician. After the classroom teacher identifies a student's needs, the lab technician prescribes appropriate software. Close coordination of lab activities with classroom instruction is a feature of the program, which is designed to be used for 30 minutes, four days per week.

For more information on the CELL program, contact Celia Chandler, Coordinator, Irvine Unified School District, 5050 Barranca Parkway, Irvine, CA 92714; (714) 733-9391.

The Alaska Writing Program (AWP) is a nationally validated exemplary program of the Yukon Koyukuk School District in Fairbanks, Alaska. National dissemination of the program is sponsored by a Title VII grant.

Developed in 1983, AWP is a unique program because it includes a computer software package developed by a team of teachers working with students over a ten-year period. The program presents an entire writing curriculum for grades four through 13 with lessons in science, social studies, mathematics, and language arts. It consists of three components: student software, a three-day teacher training program, and a technical assistance program for teachers.

The software package is designed for Macintosh computers and consists of nine modules to help students plan, draft, revise, proofread, and publish stories, reports, letters, essays, research papers, and poetry. Instruction is based on the process model and utilizes all the principles of quality writing instruction recommended by the National Council of Teachers of English (NCTE).

For more information, contact Nikki McCurry, Project Director, Alaska Writing Program, Box 80210, Fairbanks, AK 99708; (800) 348-1335.

### **References**

Apple Computer, Inc. (1991). *Apple classrooms of tomorrow: Philosophy and structure and what's happening where*. ERIC Document Reproduction Service (DRS) No. ED340349.

Barbe, W. B., and Swassing, R. H. (1979). *Teaching through modality strengths: Concepts and practices*. Columbus, OH: Zaner-Bloser.

Carbo, M. (1980). "An analysis of the relationship between the modality preferences of kindergartners and selected reading treatments as they affect the learning of basic sight-word vocabulary." Doctoral dissertation, St. John's University. *Dissertation Abstracts International* 41: 1389A.

Johnson, R., Johnson, D., and Stanne, M. (1986). "Comparison of computer-assisted, competitive, and individualistic learning." *American Educational Research Journal* 23 (3): 382-92.

Salomon, G. (1991). "Learning: New conceptions, new opportunities." *Educational Technology* 31 (6): 41-44.

Schlechter, T. (1990). "The relative instructional efficiency of small group computer-based telecommunications for instruction." *Journal of Computer-Based Instruction* 6 (3): 329-41.

Steinberg, E. R. (1992). The potential of computer-based telecommunications for instruction. *Journal of Computer-Based Instruction* 19 (2): 42-46.

Willets, K. (1992, December). *Technology and second language learning*. ERIC Digest. Washington, DC: ERIC CLL.

### **RESOURCE ORGANIZATIONS**

*The following organizations collect, synthesize, and/or disseminate information relating to education technology and/or provide technical assistance. Some offer information that specifically addresses language minority student issues in educational technology. Internet addresses are provided where available.*

#### **Association for Educational Communications and Technology**

1025 Vermont Avenue, NW  
Suite 820  
Washington, DC 20005  
(202) 347-7834

#### **Center for Children and Technology**

Bank Street College of Education  
610 West 112th Street  
New York, NY 10025  
(212) 875-4560

#### **Consortium for School Networking**

P.O. Box 65193  
Washington, DC 20035-5193  
(202) 466-6296  
internet: [info@cosn.org](mailto:info@cosn.org)

**Electronic Frontier Foundation**

1001 G Street, NW  
Washington, DC 20001  
(202) 347-5400  
internet: [eff@eff.org](mailto:eff@eff.org)

**ERIC Clearinghouse on Information and Technology**

Syracuse University  
4-194 Center for Science and Technology  
Syracuse, NY 13244-4100  
(800) 464-9107  
internet: [eric@ericir.syr.edu](mailto:eric@ericir.syr.edu)

**International Society for Technology in Education**

1787 Agate Street  
Eugene, OR 97403-1923  
(800) 336-5191  
internet: [iste@oregon.uoregon.edu](mailto:iste@oregon.uoregon.edu)

**International Technology Education Association**

1914 Association Drive  
Reston, VA 22091-1502  
(703) 860-2100