

# Making Tele-Teaching A Reality

BY SHARON WEAVER PITTMAN

“

. . . [Education for] the Kingdom shall be taken into all the world.” Although this variation from Matthew 24:14 offers a new twist on an old biblical injunction, the relationship between the gospel and education is well established. Adventist teachers have been educating for the kingdom for decades. Tele-teaching and distance learning offer exciting opportunities to expand our current visions and directives.

Distance learning in the form of correspondence study has been around a long while.

Using books, manuals, workbooks, tests, and sometimes audio tapes or videocassettes, students such as those who have

enrolled in Home Study International have been able to take a single course or receive degrees via the postal system.

New distance-learning technologies, often referred to as tele-teaching or tele-learning, are growing rapidly.

In 1987, fewer than 10 states in the U.S. showed an interest in adopting this new educational medium. Today school districts in every state use a variety of teaching

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technologies to participate in distance learning.<sup>1</sup>

### **Tele-Teaching Defined**

Just what is tele-teaching? It is educating via satellite, microwave, or phone line TV point-to-point communication links established between groups at two or more locations in order to provide instantaneous interchange of aural and visual information. The distance between sites can be across the ocean or continent—or just across the hall. It may take any of four modes: (1) video conferencing, which uses TV images plus sound at all locations; (2) computer conferencing, when computers at several sites are netted; (3) audio graphic conferencing, which uses two-way audio (via telephone) and visual images (via fax); and (4) audio conferencing, using telephone or radio. All these modes of communication can be distributed by satellite. This requires a large initial investment; however, it can sometimes be justified by savings in travel, lodging, and other costs over time.<sup>2</sup>

New developments in tele-teaching include fiber optics, devices that allow multiple signals to be broadcast over a single phone line, produce a clearer picture not degraded by atmospherics, and are cheaper to install and maintain than satellite communication. A second development is holography, three-dimensional images that enhance realism.<sup>3</sup> Infrastructure is currently being established that will allow all TVs to be interactive. After computer chips are installed in TV sets, viewers will be able to order goods and receive services from their own homes. The Clinton Administration has spent considerable

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resources to encourage and develop the “Information Highway.” Via the Internet, a core component of this information super-system, individuals, businesses, and governments can communicate with one another. Internet access serves as a critical link for future tele-teaching. The universe of information currently available can expand teaching resources in a way that would have been impossible in the past.

Advances such as these offer educators exciting and challenging opportunities to expand and improve the academic arena. Several of these include the following:

### **Collaboration and Excellence**

Tele-teaching offers technological options to facilitate increased cooperation and collaboration of SDA academies and colleges, as suggested by Elisabeth Wear in the April/May 1994 issue of the JOURNAL.<sup>4</sup> With limited denominational educational resources, it becomes imperative that shared expertise and resources be utilized to promote the global mission of Adventist education at all levels and settings.

Academic excellence has been a hallmark of Adventist education. Tele-teaching will allow us to build on our strengths. It will allow instantaneous sharing, networking, and tele-conferencing between teachers as well as between teachers and students.

### **Redefining the Definition of Learner**

One of the most exciting byproducts of adopting this technology is our opportunity to redefine what is meant by the term *student*. Learners can be students of all ages, as well as professionals opting for continuing education. Education can be a single course for a stay-at-home mom, a certification program for a paraprofessional, classroom instruction for a small, understaffed rural school, or training to professionalize lay workers in local churches. Instructional tele-media allows learners to interact with both the instructor and other distance learners.

### **Global Education**

Tele-teaching can minimize geograph-

## Actual Uses of Tele-Teaching

Students and professors can be linked by electronic mail over the Internet and hold debates and arguments in "virtual discussion groups" from the comfort of their dormitory rooms and offices. Each Monday morning last spring, in a public administration class at Newport University in Newport News, Virginia, the teacher posted a question relating to the weekend's reading assignment on the electronic bulletin board. Students were expected to use a modem to dial into the bulletin board and respond to the question. They also got to read the responses made by other students and to comment on them.

Students can take courses by home computer, view lectures recorded on videotape or CD-ROM disks, and learn at their own pace. A government teacher at George Mason University in Virginia last year videotaped his lectures and made them available at the library. The lectures were also broadcast on a local cable TV station. Students were required to attend discussion groups and participate in a citizenship project.

## DISTANCE-LEARNING RESOURCES

### Publications and Guides

*Innovation in Distance Learning.* (1991). Papers from the Northeast Distance Learning Conferences outlining distance learning technologies and applications.

Research Foundation of SUNY/New York Network, A.E.

Smith Bldg., 12th Floor  
Albany, NY 12225 (\$19)

*Funding Sourcebook for Distance Learning and Educational Technology* (1993).

United States Distance Learning Association  
P.O. Box 5129

San Ramon, CA 94583  
(510) 820-5845

\$50.00 with membership to USDLA

*Innovations in Distance Learning* (1991).

Jones 21st Century, Inc.  
9697 East Mineral Ave.  
Englewood, CO 80112  
(303) 792-3111

\$19.00 + \$6.00 shipping

*Going the Distance: A Handbook for Developing Distance Degree Programs* (1992).

PBS Adult Learning Service  
1320 Braddock Place  
Alexandria, VA 22314  
(800) 257-2578

*The Electronic School: Innovative Uses of Technology in Education* (1991).

National School Boards Association  
P.O. Box 630422  
Baltimore, MD 21263-0422  
(703) 838-6722

### ORGANIZATIONS

#### *Electronic References*

#### **America Online Turner Educational Searches, Inc.**

10 North Main Street  
Yardley, PA 19067  
(800) 344-6219

Monthly fee

Online services for teachers, students, and parents in schools or at home. This service accesses CNN Newsroom Daily Classroom and Teaching Guides, News and Idea Exchange forums, Parent/Teacher Exchange, Compton's Encyclopedia, the Online Campus, Homework Tutoring, and e-mail, software libraries, and more.

#### **BITNET**

C/O EDUCOM  
1112 16th St. NW, Ste. 600  
Washington, DC 20036  
(202) 872-4200

Institutional Fee

Begun in 1981, BITNET was the first major network for higher education that served academics in virtually every discipline. Each institution pays for its communications link to the network, which offers database access, e-mail, bulletin boards, and conferencing. For example, SATEDU-L is a newly created discussion area especially designed for educators using satellite-based information resources.

#### **CompuServe**

5000 Arlington Center Blvd.  
P.O. Box 20212  
Columbus, OH 43220  
(800) 848-8199

#### **Distance Learning Resource Network (DLRN)**

Far West Laboratory  
730 Harrison St.  
San Francisco, CA 94107-1242  
(415) 241-2744

Access: Internet

Established as a clearinghouse for distance edu-

cation and supported by the U.S. Department of Education, the DLRN provides information regarding programs, Star Schools, planning and evaluation resources, state and federal funding, staff, staff development teleconferences, research reports, articles, and state and federal policy.

#### **ERIC**

U.S. Department of Education  
Office of Educational Research and Improvement/OERI  
Washington, DC 20208-5720  
(800) USE-ERIC

Access: Available on BRS, CompuServe, Dialog, Internet

ERIC is the most complete database on education, offering materials ranging from research summaries and exhaustive bibliographies to online reference and document ordering services.

#### **The Foundation Center**

79 5th Avenue  
New York, NY 10003-3076  
(212) 620-4230

Fees: Vary—based on level of service

Access: Dialog (800) 334-2564

The center maintains two online databases, accessible through dialog. File 26 accesses information from *The Foundation Director*, *The National Directory of Corporate Giving*, *The National Data Book of Foundations*, and *New and Emerging Foundations*. File 27 contains information from The Foundation Grants Index, proving listings of foundation grants which are added five times a year. The Associates Program offers members low-cost access, searches excited by the center's staff plus search guide and phone support.

#### **FrEdMail-Free Education Mail**

4021 School Road  
P.O. Box 243  
Bonita, CA 92002  
(619) 475-4852

Fees: \$60/Software Access: Local telephone lines

More than 90 bulletin board and e-mail services occupy this network created by and for teachers. The curriculum focuses on student writing. Contributors share research and classroom experience with one another or among a group.

#### **Internet**

Internet Society  
1895 Preston While Drive, Ste. 100  
Reston, VA 22091  
(703) 620-8990; Fax: (703) 620-0913  
Fees: Flat rate of \$2/hr.; \$20/month

Access: On the Internet  
<ISOC@nri.reston.va.us>  
Started by the U.S. military and used extensively in higher education, this network connects hundreds of thousands of computer systems, databases, and millions of users in more than 100 countries through dedicated lines. The Internet is low cost and provides access to vast information, resources, and research.

### **National Distance Learning Center (NDLC)**

4800 New Hartford Road  
Owensboro, KY 42303  
(502) 686-4555  
Fees: Phone charges  
The NDLC serves a public information exchange for both producers and users of educational media. Resources include audio conferences, broadcast TV programs, films, print, slides, software, videodisk, and videotapes. New listings are added weekly. Subject categories include adult basic-skills training, workplace literacy, job opportunities, career development, special education, the social sciences, humanities, math, and more. The NDLC has an agreement with the U.S. Department of Education to promote programs and services available to educators.

### **Prodigy**

445 Hamilton Ave.  
White Plains, NY 10601  
(800) 776-3449  
Fees: Monthly or annual fees include unlimited use.  
Prodigy offers access to a variety of information and services including Grolier's electronic encyclopedia; stock quotes and financial information; educational software, publications, and games; shopping services, news services, travel reservations and information; and topical bulletin boards. Prodigy has a magazine-style layout and graphics; advertising appears on bottom of each screen.

## **FUNDING POSSIBILITIES**

### **Corporations and Foundations**

#### **Apple Computer**

Corporate Giving Program  
20525 Marina Avenue, MS:38J  
Cupertino, CA 95014  
(408) 974-2974  
Contact: Fred Silverman, Manager

#### **Exxon Corporation**

225 E. John W. Carpenter Freeway  
Irving, TX 75062-2298  
(214) 444-1104

### **IBM**

2000 Purchase St.  
Purchase, NY 10577  
(914) 765-5284

### **Hewlett-Packard Company**

Philanthropic Grants  
3000 Hanover St.  
Palo Alto, CA 94304  
(415) 857-3053

### **Lilly Endowment**

2801 North Meridian St.  
P.O. Box 88068  
Indianapolis, IN 46208  
(317) 924-5471  
Contact: John M. Mutz, President

### **Pew Charitable Trusts**

One Commerce Square  
2005 Market Street, Suite 1700  
Philadelphia, PA 19103-7017  
(215) 575-9050

### **Texas Instrument Foundation**

7839 Churchill Way  
P.O. Box 650311, M/S 3906  
Dallas, TX 75265  
(214) 917-4505  
Contact: Liston M. Rice, Jr., President

### **Federal Government**

Office of Educational Research and Improvement (OERI)  
555 New Jersey Ave.  
Washington, DC 20208-4554  
(800) 424-1616  
BBS: (800) 222-4922  
  
Secretary's Fund for Innovation in Education (FIE)  
FIRST/Fund for Innovation in Education (FIE)  
(202) 219-1496  
Contact: Shirley Steele

## **SATELLITE HARDWARE INFORMATION**

### **Adventist Communication Network**

1100 Rancho Conejo Blvd.  
Newbury Park, CA 91320  
(800) ACN-1119; (fax) (805) 373-7702  
They will provide information about satellite system equipment for Adventist educators.

*\*The information provided has been carefully compiled and checked, but the author's intent is to only provide some insight on possible beginning resources. This list is in no way exhaustive, and information about specific resources is subject to change.*

ical barriers, making the classroom a global, multi-site learning interchange. Students and instructors can shatter traditional boundaries to explore and develop understanding that enlightens and challenges stereotypical thinking. In recent years, the Internet has afforded faculty and students opportunities to interact globally via bulletin boards, list servers, and e-mail. In this way, students can broaden their "realities" to address values, ethics, and greater understanding of the perspectives of other nationalities and cultures. Students are also exposed to greater ideological diversity via the global virtual university. This provides educators with the opportunity to discuss our unique Adventist values and mores.

International classroom-to-classroom communication can be set up at a nominal cost. With the latest in software technologies, language translation becomes a minimal issue.

### **Cost Considerations**

Start-up costs have been a serious concern. To participate in tele-teaching opportunities and expand their often limited library and academic resources, schools must have access to basic computers. New multi-media machines can be purchased for around \$1,000 and the prices continue to drop dramatically. While many Adventist higher education settings now have access to mini-mainframes and complete servers, smaller schools will need to purchase modems and tele-communication software to allow access to the Internet and/or commercial servers like CompuServe, America Online, or Prodigy (See Electronic Resources). These capital investments can be funded with grants or special funding initiatives (See Funding Resources).

Until recently, schools could not have afforded a satellite downlink site. With the emergence of Net '95 and the new evangelistic approach that the Adventist Communication Network is sponsoring, small, medium, and large churches are purchasing satellite dishes, receivers, and projectors. Hundreds of downlink systems are being installed in the United States and internationally. With the infrastructure in place, there would seem to be

viable into the 21st century, strategic planning, discussion, and incremental implementation must begin now. ☞

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#### REFERENCES

1. Isabelle Bruder, "Distance Learning: Bridging Education Gaps With Technology," *Electronic Learning* 11:3 (November/December 1991), p. 20.
2. William R. Tracey, *Designing Training and Development Systems* (New York: American Management Association, 1992), p. 219.
3. *Ibid.*, p. 220.
4. Elisabeth Wear, "Ties That Should Bind Our Academies and Colleges: Cooperation and Collaboration," *The Journal of Adventist Education* 56:4 (April/May 1994), pp. 21-24.

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no better time for Adventist educators to expand their vision for global learning. (For information about satellite system hardware, contact the Adventist Communication Network.)

Start-up costs for new technology are often a major concern. Educational institutions can take advantage of "soft" funding from one-time grants and donations. True innovators are always on the lookout for alternative funding sources. Suggested funding sources are provided on pages 33 and 34. Other creative funding methods can also be utilized to expand learning technologies.

As we redefine *student*, our schools' financial base can be broadened to include a larger number of more diverse learners. Many colleges and universities have found that continuing education programs can be major sources of additional revenue.

While the future for technology in Adventist education is exciting indeed, the community of educators must still address many issues. Among these are preserving individual interaction and relationships, legal and ownership issues relating to the

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teaching materials that faculty develop, release time for faculty development, as well as social and spiritual implications for redefining pedagogy. The author hopes this article will serve as a forum for beginning discussion of these rather complex issues. If Adventist education is to remain