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ABSTRACT

This paper describes an innovative training program offered at Northeastern Illinois University in Chicago. Participants in the program include the university computer education students; the administration, teachers, and students of the participating elementary and secondary schools; and the Curriculum and Instruction and Media Services departments at the university. The university students, many of whom are already teachers, receive and complete course assignments and communicate with each other by means of telecommunications. The program develops an understanding of the effectiveness of telecommunications as a curriculum tool. The training includes the following components: (1) basic telecommunications training to send and receive messages among each other and the instructors; (2) use of telecommunications to receive and complete assignments; (3) development and design of electronic mail; (4) instructional use of telecommunications in grades K-12; and (5) training in data retrieval. Other types of information received include database activities, establishment of a sub-network for specific educational purposes, and use of tutorials. Participation in the program enables university students to model processes which could be shared with their K-12 students, and it sensitizes them to opportunities for implementing telecommunications in their own curricula. (LL)

PREPARING TEACHERS FOR A SHRINKING WORLD

by
Gene Aronin, Ph.D.

Telecommunications provides a unique learning tool for education students and their potential pupils in an innovative program at Northeastern Illinois University in Chicago, Illinois. The university students, many of whom already are teachers, receive and complete course assignments and communicate with each other by means of telecommunications. For these students taking computer education courses in the Department of Curriculum and Instruction's "Instructional Media" program, worldwide communications by modem is the norm.

Highlighting the application of this newly-learned technology is an ongoing project with elementary and secondary school students in fourteen Chicago area schools. In a dual phase program, students initially learn the mechanics of sending and receiving messages among themselves and the instructors for their own learning, then develop an understanding of the effectiveness of telecommunications as a curriculum tool for instruction of their pupils.

Participants in the Program:

The participants in the telecommunications training program included the university computer education students, the administration, teachers, and students of the participating elementary and secondary schools, and the the Curriculum and Instruction and Media Services departments of Northeastern Illinois University which provided the training. The close cooperation of all participants was needed, especially in the area of coordinating the various schedule requirements.

Stages of Involvement:

Involvement of the university students in telecommunications training included five components, 1) basic telecommuncations training to send and receive messages among each other and the instructors, 2) use of telecommunications to receive and complete assignments, 3) develop rationale and design E-mail activities for instructional use of telecommunications in k-12 grades, 4) coordinate components of the k-12 grades telecommunications project as facilitators, 5) training in data retrieval telecommunications applications.

1. Basic telecommunications training:

At the beginning of the semester, the university students were taught procedures in sending and receiving messages through the university's "Internet" system. Each student was given a university "account" or registration to use the system. They were taught to send messages among each other and the instructors. The system uses a connection to "Internet", the national educational telecommunications highway for personal one-on-one messages, or "E-mail" for information to groups of individuals in a fashion

similar to fastening a message to a bulletin board. In a unique cooperative arrangement, assistance was given by the Media Services Department, both through assistance in the training of students and design of interactive programs. This department provides support services to the university faculty by means of sattelite downloading, desktop publishing, videotaping, interactive video, and hypercard-type tutorials. They provided a distance education consultant to assist in the training of the students. They also authored an interactive video learning package for students to obtain individualized help in telecommunications activities.

2. Receive and complete assignments:

Initial emphasis was on demonstrating the personal usefulness of telecommunications for the university students in order to stimulate interest and motivate thinking about educational applications. They used E-mail to exchange ideas with classmates, and shared resources such as recommending articles and books. After students had gained sufficient expertise with telecom-munications, they received assignments and quizzes through E-mail. Assignments were then completed and sent to the instructor's E-mail account. Not all materials were sent through E-mail, however, many materials were hardcopy, distributed in class to supplement the E-mailed materials. Many assignments were done in groups which presented opportunities for individuals to communicate with each other regarding their part of the group project. One additional benefit was that cooperative learning was modeled. The initial idea of communicating by computer was in itself very fascinating to the students. When they discovered they could use E-mail to share group information, the students became even more excited and welcomed each day they returned to class. Several students who had computers and modems of their own at home used them to communicate with the instructor almost daily.

3. Develop Rationale and Design E-mail Activities for K-12 classes:

The students found E-mail useful for themselves but it was important for them to view it as an effective teaching tool. Several steps were taken to acquaint students with the rationale and curricular uses of E-mail. First, one E-mail account was used by the instructor to hold the various types of student activities that were being done world-wide. Included were a) teacher-to-teacher sharing of information and project ideas, b) projects for classrooms to participate in, and c) student-to-student communications (pen pals by modem). Students were assigned to view the account regularly, at least once each class period, and respond to at least one communication. In addition, arrangements were made to communicate with college students at other universities in similar programs. They also were invited with their counterparts, to design a small activity in which both could cooperatively participate.

4. Coordinate components of the K-12 telecommunications project:

The University students helped to coordinate some parts of the on-going K-12 telecommunications activities including communications with the schools regarding details of projects, sending schools information from other sites, planning meetings with teachers, and designing activities.

5. Training in data retrieval telecommunications applications:

Although exchanging E-mail was the basic and necessary application required of the university students, the search for and retrieval of information has recently been evolving as another. The students needed training to access the unusual variety of information being stored in computers around the world, usually at universities: uncopyrighted fiction classics, the latest weather all over the United States, space curriculum materials from NASA, names, addresses, phone numbers and contacts for members of Congress, and the card catalog for the Library of Congress. In the spirit of accessibility for education, all of this material is free. Also free is software to help speed up the retrieval process.

Many of the educational linkups or networks have adopted this concept of storage by making available enrichment materials to accompany the messaging activities of both students and teachers.

Memo

TO: Contact persons for telecommunications project
FROM: Dr. Gene Aronin, Northeastern Illinois University
SUBJECT: Meeting for project

As participants in the telecommunications project, you will receive weekly news on the network every Tuesday through E-mail. Please check your E-mail regularly, because this will keep you in touch with what other schools in the network are doing.

There will also be an orientation meeting on September 1 at Northeastern Illinois University (time, room#). Several topics will be covered at the meeting, including:

1. The project calendar
2. Equipment needed to participate
3. Meeting with school administrators
4. Beginning projects
5. Developing additional project ideas

Please plan to attend the meeting, since information passed on there will be important to everyone.

Sincerely,
Gene Aronin

The past year's experiences will help with the structuring and selection of projects. The focus will continue to be upon integrating telecommunications into the curriculum. To meet this objective, new project schools will include an initial meeting between Dr. Aronin and the Superintendent, curriculum coordinator, and administrator, to decide how this curriculum incorporation will occur. A yearly calendar of projects is then set up at a meeting with contact persons. Other activities may be added during the year by individual schools to fit the curriculum. Initial training of

teachers will be done with university assistance, but local teachers than take over training so their is on-site responsibility. For example, one educational network made available to users a computer "slideshow" that described its operation. Another group offered world maps to its users.

Other types of information that students received or participated in training for through the Internet system included the a) database activities or getting information from computer sites throughout the world, b) establishing a sub-network for specific educational purposes, and c) using courseware (tutorials) available through our Internet system. The university students found great satisfaction in using the telecommunications facilities and found it increasingly beneficial. Initially, students looked at the class mailbox which contained actual classroom projects and also international E-Mail. Messages were sent to the instructor and finally used E-Mail functionally to send information to each other. The activities demonstrated the great potential for telecommunications to facilitate development of language arts skills among college students. They were then enabled to model processes which could be shared with their K-12 students. Student teachers could then be sensitized to opportunities for implementing telecommunications in their own curriculum.

Student Teaching experiences:

Prospective teachers need to teach for one semester preceded by 100 hours of observation in the classroom. Telecommunications activities are being expanded for these students. They will communicate with each other and with their supervising professor about teaching ideas, problems, and successes. Some student teachers are to be placed in schools within the telecommunications project where they can utilize telecommunications in their instruction first hand.

Technology in education has become a number one national priority. Telecommunications, because of its characteristics is and will continue to be a viable way to meet challenges for improving instruction into the year 2000.