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ABSTRACT

Because telecomputing can be such a powerful tool for stimulating communications among students, it is important for teachers to learn how to apply this technology in their classrooms. Free Educational Mail (FrEdMail) is an electronic network through which K-12 students, teachers, and administrators in the United States and other countries can use computers to communicate with each other using the telephone lines. The equipment required includes a micro-computer with a single disk drive and a modem. A communications software program and a word processing software program are also required. A simple beginning project that can help familiarize teachers and students with telecomputing is to survey other members of the FrEdMail network concerning particular works of children's literature. More in-depth projects are also possible. Education students at the University of North Carolina at Asheville conducted an extended discussion of "Charlotte's Web" with a fourth-grade class and a Chapter 1 class from Asheville Alternative School; solicited book reports from sixth-grade students; and solved riddles written by sixth graders in Pennsylvania. Telecomputing broadens the opportunities for reading and discussing children's literature in the classroom. It gives children a way of comparing their own experiences with literature with those of others from different parts of the world. (A table presenting guidelines for planning and carrying out telecomputing projects is included.) (RS)

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## Telecomputing and Children's Literature

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**Abstract**

Because telecomputing is a powerful tool for communications and for opening the classroom to other cultures, teachers need to learn how to apply this technology. This paper discusses one low-cost telecomputing network, the equipment needed to get on-line, and applications of telecomputing to the study of children's literature.

### Telecomputing and Children's Literature

Elizabeth, a fourth grade student at Asheville Alternative School writes: "I enjoyed reading two books about Australia. It was fun to send questions and answers about Charlotte's Web. It was neat to telecommunicate to Australia because it's so far away. At first I didn't understand what telecommunications was, but now I know a lot about it."

Elizabeth was reflecting on a telecommunications project in which she and her classmates participated along with other elementary students in Sydney, Australia and college students preparing to be teachers at the University of North Carolina at Asheville (UNCA). During this telecomputing project, all of the participants introduced themselves by sending brief biographical sketches in bio-poems. The fourth grade students from Asheville then studied about Australia and read literature from that country. They also read and discussed Charlotte's Web (White, 1952) via electronic mail with the college students taking a children's literature course at UNCA.

Elizabeth's response shows the kind of benefits that can result from the use of telecomputing in the classroom. Telecomputing is the most exciting and useful educational tool since word processing. It has vast possibilities in encouraging students' reading and writing and learning about other people and cultures. However, these possibilities are largely unexplored in the schools. Even though the business world is currently heavily

invested in telecomputing and by some accounts this technology is on the verge of tremendous growth (Rothfeder, Keller, & Galford, 1989), only about one-fifth of the schools in the United States have access to this technology (Scrogan, 1987). Interest in telecomputing does seem to be catching on, though. One evidence of this is that the number of elementary schools with modems (the device needed to enable computers to transmit over telephone lines) increased by 23% from 1987 to 1988 (Daughenbaugh, 1989).

Because telecomputing can be such a powerful tool for stimulating communications among students, it is important for teachers to learn how to apply this technology in their classrooms. The purpose of this paper is to describe one specific, low-cost telecomputing network, the equipment needed to get on-line, and some of the telecomputing projects that can be applied in the study of children's literature.

### **The FrEdMail Network**

The telecomputing network that we used in our projects this last year was the FrEdMail network. FrEdMail, which stands for Free Educational Mail, was created in 1985 by Al Rogers who was then a computer specialist for San Diego County Schools. FrEdMail is an electronic network through which people can use computers to communicate with each other using the phone lines. This process is called telecomputing or asynchronous computer mediated communications (CMC) (Andres, 1991). Telecomputing has an

advantage over communication via telephone in that transmissions can be sent at times when it is least expensive, and the person receiving the message does not have to be there when the message arrives but can read the messages, electronic mail, at their leisure. Another advantage is that a great deal of data can be sent very quickly which also reduces the cost of transmission.

The FrEdMail network provides a means for K-12 students, teachers, administrators, and university professors to communicate. It's primary purpose is to provide "real audiences and real purposes to motivate [student] writing" (Rogers, 1988). FrEdMail has spread to 19 states, and to Australia, Canada, Ireland, and the Virgin Islands. The states which have FrEd Mail include: California, Connecticut, Iowa, Illinois, Indiana, Kentucky, Michigan, Minnesota, Missouri, North Carolina, Nebraska, New Jersey, New York, Oklahoma, Pennsylvania, Tennessee, Virginia, and Wyoming. In addition, the FrEd mail network connects with larger national and international networks such as BITNET which links universities around the world.

The FrEdMail network consists of individual users who relay messages to "nodes." The nodes are computers that are able to receive and relay the messages of many users. The nodes relay the messages to other microcomputers called "hubs" which relay to "gates." The gates serve as gateways to distant hubs and to other networks such as BITNET (Rogers, 1988).

The equipment required for FrEdMail is a micro-computer with

a single disk drive and a modem that hooks into a telephone line. A printer is not necessary for communication but is of course necessary for printing out the messages received. The FrEdMail network was planned for the Apple computer. However, MSDOS type (IBM compatible) machines can operate on the network; only there may be difficulty in translating files that have been encoded in PRODOS word processing programs.

We used an Apple 2gs with a Data Link modem (1200 Baud), and an Image Writer printer. "Baud" refers to the number of bytes of data that can be sent over the phone lines per minute. The higher the baud of the modem the faster the data can be sent, and therefore, the less time is needed for transmission over the phone lines. Baud rates of 1200 and 2400 are common in the telecomputing networks today.

Two software programs are needed in telecomputing -- a communications software program and a word processing program. We used a very "user friendly" communications software called Talk is Cheap (Elton, 1990) and a simple word processing program called FrEdWriter (Rogers, 1987).

The costs of setting up and running a telecomputing station on FrEdMail are not expensive, especially if there is a FrEdMail node in the local area. We paid about \$2000 for our equipment, \$45 for the communications software (the FrEdWriter program was free), and the phone line cost about \$100 to install and \$35 per month for service charges. Since the node we hooked into was in an adjoining

county, our participating schools averaged about \$20 per month for long distance charges. Our telephone charges would have been eliminated if we had used a line that was already in the school and if we had a FrEdMail node in our local area. It is not necessary to have telephone lines restricted only for telecomputing as long as use of the line can be controlled while the telecomputing transmissions are being made. We chose to set up our own lines for this initial project but plan to use regular school lines for subsequent projects. We are also discussing the possibility of the district office setting up a FrEdMail node so that all of the schools in the district could have access to FrEdMail without long distance charges. If this were to happen, then the district would only have to pay for long distance charges when its node relayed messages to the nearest hub. This can be done automatically at night in a fraction of the time it would take for an individual user to transmit to a node. Therefore there would be considerable saving in long distance costs.

Once the equipment and software is installed, all you have to do is dial into the nearest node (via the modem) and follow the directions for setting up a new account. To find the FrEdMail node nearest your school, you can dial (619) 757-3180, log on as a guest, and select the command "M" to read the map of the FrEdMail network. All FrEdMail nodes carry this map.

After establishing a FrEdMail account, you are ready to begin



networking with other teachers. You can first begin by looking at the network bulletin board. A bulletin board is a place where people can send messages to be read by anyone else who is interested. The board is organized into topics or conferences. Two conferences are carried, or "echoed," by all of the nodes in the FrEdMail network-- "Ideas" and "Kidwire." "Ideas" is for the exchange of proposals for collaboration by teachers on classroom-based projects and activities. "Kidwire" is a place for teachers to publish student writing. It provides a wide audience for student compositions including poetry, stories, essays, and newspaper articles.

There are other topic conferences that can be carried by individual nodes. These include "News," which provides an outlet for general discussion by educators, and "X Country," which provides a similar service to students. On "X Country" students can carry out pen-pal correspondence and other forms of discussion.

Once a possible collaborator has been identified on the "ideas" section of the bulletin board, the next step is to communicate with them personally. This can be done by addressing a message to their personal FrEdMail address included in their "Ideas" message. The messages between the different classes can then be sent to each teacher's FrEdMail address which is established when each teacher joins the FrEdMail network.

### Literature-Based Telecomputing Projects

Telecomputing provides students with a way of establishing contact and communicating with students in other classrooms. This access to others creates the opportunity to develop projects which motivate students to read, research, and write.

Since children's literature is so universally popular, projects which engage children in the reading, reporting on, and discussion of literature are very conducive to telecomputing. A very simple beginning project that can help familiarize students and teachers with telecomputing is the survey. Surveys can be designed by students to find out about how other students in various parts of the world think or feel about a variety of topics. Possible topics include surveys of favorite novels, folk tales, or books by a popular author and surveys of opinions about interpretations of passages from a certain work. One fourth grade class from North Carolina reported via FrEdMail that they had read seven books by Betsy Byars, and they wanted to hear from others responses to such questions as: "Do you think Junior in the Not Just Anybody Family was a daredevil or a sissy"? and "Where do you suppose Betsy Byars got her ideas for the book Summer of the Swans since it was so dramatic?" (Peoples, 1991).

More in-depth discussions of a specific work can be performed via telecomputing as well. For these interactive projects, it is helpful for the teachers to plan beforehand the objectives of the project, the activities, and the calendar of events. In planning

the calendar it is wise to allow at least a week for response time from the other party. Although the electronic mail transmission is very rapid, it often takes several days for students in the receiving class to receive the transmission, discuss it, draft and edit their response, and then transmit it to the original sender.

The discussion of Charlotte's Web conducted by the children's literature class at UNCA and a regular 4th grade class and a chapter one class from Asheville Alternative School extended over two months. During this time students read the novel, discussed it in small groups and formulated discussion questions for discussion. They then transmitted their questions to a corresponding group in the other school. They received questions from that group for which they in turn discussed, composed, edited, and then transmitted responses. The time for this sequence of activities was probably prolonged because the university class met only once a week.

Even though there was a delay between transmission, all of the students benefitted from the interaction. An example of a question and answer shows that the students responded thoughtfully to each other. A question from Asheville Alternative School group "Charlotte" read:

"Why was Wilbur so lonely? What could a pig do to keep from being so lonely?"

The UNCA group "Poco" responded:

Wilbur was lonely because he missed his best friend,

Fern, when she put him in the barnyard with the other animals. He was the only pig in the barnyard. He felt misunderstood and unappreciated by the other animals....

Another type of project which can take advantage of telecomputing technology is the book report. The opportunity to send their reports to a wide audience using the computer can infuse students with renewed interest for this routine task. One project begun by UNCA students was to elicit book reports from sixth grade students using a specific format. One student reported on Blubber by Judy Blume:

This girl named Linda Fisher is called Blubber. The girls in her class tease her and play mean jokes on her. For instance, they make her kiss the ugliest boy in class. I would recommend this book to anyone.

The UNCA education students behind this project are planning to make a data base that would enable interested students to search and find reports based on authors names, titles, or genres.

Guessing games and riddles about literature can add an extra element of fun to telecomputing projects. One sixth grade class from Pennsylvania challenged our children's literature class to guess the novel identified by these clues:

Characters: There are outlaws and punctuation.

Setting: It is the year 880 in the valley between

the mountains.

Plot: The evil vegetables are attacking and the outlaws save the day.

Conflict: The punctuation dislike the actions of the outlaws.

Author: This is written by a Newberry Award-winning author.

After discussing the clues and reviewing the books they had read, the UNCA children's literature class suggested some possible answers and then, in small groups, developed riddles of their own, such as:

The author liked to sip tea in the late afternoon.

The title features an animal of the Serengeti vs. a halloween character.

It all started on a rainy day,  
not through the looking glass, but....

Land of the lamppost,  
a big thaw,

young then older then young again.

(The answers to these riddles can be found in the References section of this article.)

These projects are only a few of the many possible ways of using telecomputing with a focus on children's literature. In planning such projects it is important to be well organized. The

suggestions listed in Table 1 provide guidelines for planning and carrying out telecomputing projects.

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Insert Table 1 about here  
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Teachers new to telecomputing will need time to learn how to use this technology, but it is worth the effort. Telecomputing broadens the opportunities for reading and discussing children's literature in the classroom. It gives children a way of comparing their own experiences with literature with those of others from different parts of the world. This process can lead to greater understanding of their own responses as well as those of others. Besides this, telecomputing involves children directly in writing as a communication process. Children have authentic purposes for writing and real audiences to receive and respond to their work. Telecomputing thus directly motivates the writing process and students' efforts to write correctly and thoughtfully.

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- \* The answers to the riddles are: The Gammage Cup by Carol Kendall and The Lion, the Witch, and the Wardrobe by C. S. Lewis.

**Table 1****Using Telecomputing in the Classroom****A. Preparation**

1. Obtain the necessary hardware and software: a computer with at least one disk drive, a monitor and modem hooked to a telephone line; a printer; telecommunications software; word processing software.
2. Establish an account on an educational telecomputing network.

**B. Planning**

1. Identify the project objectives, a possible sequence of activities, and a timeline. Allow one or two weeks between communications with other schools.
2. Identify other schools to participate in the project.
  - a. Send out your proposal on the appropriate bulletin board of the network.
  - b. Reply to all respondents via their telecomputing address, clarifying the project activities and timeline.

**C. Implementation**

1. Organize your classroom using whole class, small group and individual activities as appropriate to carry out the project.



2. Let students be involved as much as possible in the telecomputing transmissions as well as the project activities.
3. Evaluate the project with participants, and plan refinements for the next application.