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"Ok Can We Try Now?" One Student's Communications on a Classroom Computer Network

Cover Page Footnote

Shelly Goldman is a research scientist at Bank Street's Center for Children and Technology. Carol Reich is a researcher at, and the president of, the Lexington Center. She is also a Bank Street College of Education Board of Trustees member. Alison Matthews is a researcher at the Lexington Center.

"OK CAN WE TRY NOW?" ONE STUDENT'S COMMUNICATIONS ON A CLASSROOM COMPUTER NETWORK

Shelly V. Goldman Carol Reich Alison Matthews

> Anna sat at a computer writing an entry in her earth science journal. The journal was one of the ways her teacher communicated with students individually about their understandings, responses and reactions to class activities. Anna was to write daily about what happened in the class, and include comments, questions, ideas or issues she might like to discuss. Recently, Anna had begun to accept sitting at the computer and writing the journal-letters to her teacher. She also liked getting electronic mail from her teacher, her classmates, and other staff members. After a long period of resistance, Anna became an active participant in individual and small group science activities on the computer network.

Anna was one of fifteen students at The Lexington School for the Deaf who participated in a pilot program called the Literacy Network. The project was designed to enhance the communication skills and science learning of deaf students through the use of computer network technology. Anna was one of the program's most vivid success stories. With a history of isolation from her teacher and other students, Anna came to be an active participant in classroom activities. This paper describes the way Anna came to accept and use computer technology, open up communications with her science teacher, and complete her science course successfully. Her case is important because it documents how the technology provided new structures for her participation in the science class.

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Background

Many deaf children are kept out of mainstream education and, as adults, out of participation in the workplace. Communication can be difficult for the majority who have hearing relatives at home or for others, with their teachers around school tasks. For a great number of deaf people, communication with employers and coworkers in the workplace is, at best, strained.

Aware of those needs, the Lexington School for the Deaf has developed curriculum and instruction that emphasizes learning the mechanics of communication and language use simultaneously with purposeful communication. The Literacy Network project was born of those efforts.

For the past two years, a team of educators and researchers from Bank Street College of Education, The Lexington Center and the Lexington School have worked on the ways technologies can address these issues. Our goal is to create a school communication environment where reading and writing are natural conversational forms of communication for intellectual, curricular and social purposes. Communication skills such as reading and writing are not disembodied school activities, but rather embedded in a set of purposeful learning activities. Students are involved in communicating with a number of audiences, including classmates, teachers, and students in other schools.

We decided a computer network might provide the technological support for such an environment. Networks link computers so that a person at one machine can communicate and share information with a person at any other machine. Although new to schools, a network designed for science classrooms of hearing children at Bank Street showed great promise for supporting written communication and collaboration (Newman and Goldman, 1988). This kind of technology should bring the social and communicative functions of reading and writing alive for deaf students as well. We incorporated Bank Street's network into two earth science classes at the Lexington School for five months in the 1987-88 school year. Science work was conducted over the network and provided the purposeful and communicative environment for writing. We observed and videotaped science activities conducted on and off the network and collected records of all network communications. Our data analysis suggests that the participation of several students increased dramatically as they became proficient users of the network technology. Anna was one of those students. In this paper we describe Anna's acceptance of the technology as a structure for communicating with her science teacher.

Anna and her participation

Anna, black, age 15, can remember hearing. She has written about how she awoke from an illness when she was 10 years old unable to hear her mother talking to her. Her resulting hearing loss is irreversible and profound.

Anna had mastered many reading and writing skills by the time she began the Literacy Network program. She had scored a grade equivalent of 6.7 on the reading SAT I in 1985. She could also write, as shown by examinations she wrote on the Network in April, 1988. However, Anna did not participate in science classroom activities or interact regularly with other students or her teachers. Anna most often sat alone and did not participate with other students in classroom or social activities. She came and went by herself during classroom breaks. Although more competent than many students at the school tasks of reading and writing, Anna only occasionally completed her science work and assignments. For some time, she did not complete work on the computer network.

During the twelve week project, Anna sent approximately 50 messages over the network's electronic mail system. Most of the messages were addressed to her teacher, Ms. Abbott, in response to a longstanding assignment to write a daily log of science activities. The content and quality of the messages changed and, over time, Anna went from complying with her teacher's requests to asking questions and soliciting responses. This signified an important change in Anna's participation in communications concerning school tasks.

At first, Anna did not participate in the more interactional activities of the Network. She did the work she was assigned, but did not OPEN

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her electronic mail to receive any messages that her teacher or classmates sent her.

After observing that Anna had the computer skills to OPEN and SEND mail, and the keyboarding skills necessary for typing in capital and lower-case letters, Ms. Abbott intervened. She requested over the Network that Anna OPEN and read her mail and stop using only capital letters when she typed her work. However, Anna's next message was again in all capital letters. It was unclear whether she had read the message. She had surely not heeded it. Her response to a letter from the research staff was also in all capitals. One day later, the teacher sent a message directly to Anna saying she was checking to see if Anna 'OPENed' her mail.

To:	Anna
From:	Ms. Abbott
Subject:	instructions
Date:	3/28/88
A	

Anna,

Why don't you read your mail? There could be some very important information that the class is getting that you are missing. You must check your mail EVERYDAY!!!!!

Also, I told you before that I do not want you to type in all capital letters. You did not listen and typed your whole lab report in capital letters again. The next time you do this, I will subtract one point from your grade for each capital letter that should be a lower case letter. It is very hard to read something that is all done in capital letters. PLEASE USE CAPITAL AND LOWER CASE LETTERS!!!!

Please pay attention and follow directions or your grade will be lowered.

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Anna responded directly:To:Ms. AbbottFrom:Anna

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Subject: Lab Date: 3/30/88

All right I'll try next time on the next Lab Report .The class did a something on the weather by making our own kind of weather information. I did my math homework in class. Please don't send me on the roof to see the weather i am afraid that i'll fall. I know what you said about four weeks ago.

By the end of March, Anna began to open her mail. She responded directly to the teacher's comments and began to initiate conversation in the log format which she labeled "lab."

The next few messages were written two weeks later. Anna showed more involvement with her work by writing longer messages, asking for help and reflecting on material that she understood. She also revealed more about herself and how she makes use of the text-based, networked conversations by stating that she had to read a message twice before she understood it.

To:	Ms. Abbott
From:	Anna
Subject:	Lab
Date:	4/11/88

Today i did a file on the class with the computer to have a file on prepies and it was a great thing to do in this class. But i have a little problem with that thing now I understand a little about it and i going to do this again? I hope so.

To:	Ms. Abbott
From:	Anna
Subject:	Lab
Date:	4/15/88

Today I went to do the weather file and the paper to copy April 11 weather I was so dumb about asing it but it was a little ght and Practice: (1987-1991) the Journal of the Graduate School of Bank Street College of Education, Vol. 2 [1989], No. 1, .

good abut asing it but at first i didn't understand the mail you send until i read it 2 times i understand it.

Within the next few days, Anna began to question the teacher directly about specific information from class and asked for answers. Her use of capital letters decreased to usually the first word in each sentence and occasionally for the personal pronoun "I." The important development is that Anna was using the network as a medium for communicating about her science work with her teacher.

To:	Ms. Abbott
From:	Anna
Subject:	Lab
Date:	4/18/88

Do you know that i don't understand some part of the paper that you gave me weeks ago the part was on the water that is the part i don't read well i an a little confuse on this thing . watching the movie gave me a supursise today you said that the snow in Manhattan melts faster than snow that .fell in Queens. can you explain that to me so i won't fail the test? thanks.

To:	Ms. Abbott
From:	Anna
Subject:	Lab
Date:	4/20/88

I haven't got your answers from the letter that I send you on monday i wanted the answers so i can study for the test. but i do understand now.

Up to this point, Anna's communications about the weather were related directly to class work and assignments. In her next message, Anna reveals her fears of the roof, and offers an explanation for her earlier reluctance to go there to collect weather data. She also begins to take risks and comment on her class performance.

To:	Ms. Abbott
From:	Anna
Subject:	sun
Date:	4/26/88

Today i went on the roof to cheek the weather for the first time. I never been on a roof before i always thought if i go on a roof i'll die. And i never checked a weather before. Also I wanted to tell you that I got a little confused on the paper that I did on Monday.

By May, Anna's participation in science activities and her communications with her teacher had changed so much that she welcomed a new computer procedure that involved working with other students in a group.

To:	Chocolate
From:	Ms. Williams
Subject:	mail
Date:	4/29/88
Hi, CHOCO	LATE members!

I just finished putting your group on the network and I wanted to make sure your mail is working. Please let me know.

To:	Ms. Williams
From:	Anna
Subject:	Chocolate
Date:	5/2/88
OK can we t	ry now? I am dying to try it.
Thanks	

Anna's acceptance of the computer network as an environment for communicating about science ended with some good scholastic results. Her grades in Earth Science improved during the second semester. She ght and Practice: (1987-1991) the Journal of the Graduate School of Bank Street College of Education, Vol. 2 [1989], No. 1,

was also the only student in her class to pass the science section of the New York State Regents Competency exam.

Anna's case shows how one student's resistance to computer technology and to communications with others in school was mitigated by the use of the computer network. We do not know what caused the changes, but we think that some features of network communications were especially supportive for Anna. She may have participated more readily in electronic conversations because, on the network, she could be selective about who participated in the communications. This feature is in sharp contrast to most face-to-face classroom communications between student and teacher, which are public (Goldman and Newman, 1988). In addition, the fact that all electronic communications between Anna, her teacher, and her classmates could be saved, allowed Anna to "read them twice." The network also made it possible for her teacher to save, respond to, and use Anna's communications for working with her.

In conclusion, the structures for communication on the local area computer network provided Anna with an environment that encouraged her participation in completing class work and communicating about science. We hope to follow Anna's progress to see if the positive changes in her participation with science class persist, extend to nonnetworked classes in other subject areas, or influence her interactions with other teachers and students.

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