Fall 12-1994

Computer Networks and the Teaching of English as a Second Language: How Networks Affect Second Language Acquisition

Kirstin J. Reed-Perez
Old Dominion University

COMPUTER NETWORKS AND THE TEACHING OF ENGLISH AS A SECOND LANGUAGE: HOW NETWORKS AFFECT SECOND LANGUAGE ACQUISITION

by

Kirstin J. Reed-Perez
B.A. December 1990, State University of New York at Albany

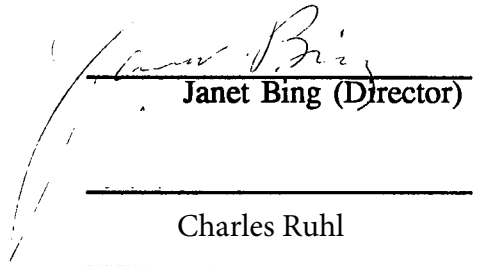
A Thesis submitted to the Faculty of Old Dominion University
in Partial Fulfillment of the Requirement for the Degree of

MASTER OF ARTS

APPLIED LINGUISTICS

OLD DOMINION UNIVERSITY
December, 1994

Approved by:



Janet Bing (Director)

Charles Ruhl

ABSTRACT

COMPUTER NETWORKS AND THE TEACHING OF ENGLISH AS A SECOND LANGUAGE: HOW NETWORKS AFFECT SECOND LANGUAGE ACQUISITION

Kirstin J. Reed-Perez
Old Dominion University, 1994
Director: Dr. Janet Bing

This thesis examines how computer networks affect second language acquisition. Two different types of networked technology available, asynchronized and synchronized networks, are currently being used in the fields of ESL/EFL, foreign language teaching, English composition, and literary studies. Chapter one reviews these two technologies and their use in the classroom. Chapter two describes how the Internet makes available resources not possible in traditional classroom settings. Chapter three considers potential problems that may arise in the networked classroom, such as student and teacher apprehension of technology. Chapter four discusses how student learning styles are affected by synchronized and asynchronized networks, particularly with error correction. Chapter five explores specific advantages of networking. Computers bring a context into the classroom that language teaching methodologies, such as Suggestopedia, Total Physical Response, and Community Language Learning try to create. Finally, chapter six investigates how the relationships between teachers and students become more egalitarian in networked classrooms.

TABLE OF CONTENTS

CHAPTER 1

Introduction

The late twentieth century has been witnessing a shift in how knowledge is passed on and taught to the next generation. No longer are we communicating only by reading and writing books. Stories about our society, our history, our news are told on television as well as in books. People keep in contact by the telephone, we are entertained by the radio, movies, and television. Technology has changed the way we carry on our daily lives. Even in education, we are shifting the way that we teach our students. Educators are experimenting with software programs, videos, satellite television and distance education. Even the language laboratory, which has been a part of foreign language education since the 1950's, has had a technological stronghold in language teaching. As a society, we are teaching and passing down our culture differently than we have for the past 600 years. We are reverting back to oral histories and moving away from printed sources. Today's students are more interested in aural technologies such as television and video games than books (McCourtney 1994a, McCourtney 1994b). They are more skilled at and interested in acquiring information through the electronic medium than through reading. In order to teach our students more effectively, we must address the fact that technology has changed our students (Faigley 1992), and it is with technology that we need to reach them. The computer has the same enjoyable characteristics as television and video games, and we can encourage reading through this context. The computer offers a tremendous potential to enhance the learning process (Garrett 1991).

Computers are fast and playful (Skubikowski and Elder 1990), and they offer a way to capture back the interest of our students.

Computer networks are becoming more widely used in the classroom. In a recent WATESOL convention (1994), presenters who spoke about networks voiced surprise at the large percentage increase of interest in their subject (Corio 1994a, Corio and Meloni 1994, Snoke 1994). While I would like to focus only on ESOL classrooms, fields such as English composition and foreign languages have been using computer networks for much longer. They therefore have much to offer the ESOL field.

Computer networks are used as a communication tool. Instead of speaking face-to-face, participants on a network type messages into the computer and send them over a phone line to the recipient's computer. The recipient can then read the message on his or her computer screen and respond similarly. In an educational setting, networks link teachers, students, and administrators to each other. I will be most concerned with the communications that occur among students and between teachers and students.

There are two different types of networked technology available, asynchronized and synchronized networks. They are currently being used in the fields of ESL/EFL, foreign language teaching, English composition, and literary studies. Synchronized networking can be referred to as "chatting," where a class or group of people are logged onto the network at the same time. They can type in messages to each other, and the messages flash up instantaneously on the screen. In this way, a conversation occurs between two or more people. Alternatively, asynchronized networks do not occur in real time. E-mail is similar to letter writing. Users log on and send e-mail either to a

specific address or to a group address, such as a BBS, where messages are posted. Anyone who accesses the BBS can read any letter posted on the BBS if they wish.

Chapter two describes how the Internet brings resources into the classroom not possible in traditional classroom settings. Synchronized and asynchronized networks are used over the LAN, or local-area network, and the WAN, or wide-area network, the Internet. Synchronized discussions usually take place over a LAN and asynchronized networks usually take place over the WAN, usually referred to as the Internet. The Internet is the huge conglomeration of computer systems that link together over the world. Classrooms can collaborate on projects using e-mail. This is a valuable commodity for EFL classes overseas that have limited availability of native speaker input and interaction. The Internet provides access to unlimited native speaker interaction that would otherwise not be available. BBS's and e-mail lists, which are built around interest topics, also offer the student the opportunity to explore virtually any topic that they are interested in.

Chapter three considers potential problems that may arise in networked classrooms. For example, students who are apprehensive about technology and computers may take longer to learn how to operate networks. It usually takes a maximum of three weeks for students to become comfortable with the technology and overcome their apprehensions. However, some students, especially older students, continue to have difficulties and are so apprehensive that they never become very proficient at using networks. Even more so, teachers must consider their abilities to utilize the technology effectively. Apprehension may cause teachers to be unable to

address unforeseen problems, answer questions or resolve difficulties that students may have. Fortunately, most people overcome their fears, have fun and become proficient working with the computer. It is the latter group that will be addressed in this thesis.

Chapter four discusses how student learning styles differ over synchronized and asynchronized networks. Students with high self-monitors are often so apprehensive about their grammar and vocabulary that they are unable to effectively communicate in a spontaneous, communicative context. Students with low self-monitors converse freely, but their language is often filled with fossilized errors. Synchronized networking, which is effective in addressing the difficulties of students with high language monitors, involves communicating in real time. The discourse that occurs on the computer screen is very rapid, moving so quickly that students do not have enough time to worry about their grammar and lexicon. Instead, they need to read the discourse on the screen quickly and simultaneously type responses to other members of the network. On the other hand, the students who have low language monitors, converse freely and do very well on synchronized networks, though their language is filled with errors. Students have the time to monitor their language errors on synchronized networks. Tammelin (1994) found that with a highly structured program, such as ICONS, or International Communication and Negotiation Simulation, her students self-monitored very highly because there was pressure to produce a perfect piece of writing. The ICONS project is a political negotiation simulation where each class prepares a report and then sends it out to other participating classes all over the world. Students were also pressured to create very formal writing that complemented the project. They were encouraged to

produce the best type of writing they could because it was being read by the "entire world." Thus, the different types of networked technologies benefit students in two different fashions. The perfect classroom set-up would be to have both types of networks available for students to work with. Unfortunately, not everyone has that luxury.

Chapter five explores specific advantages of networking. Computers bring a context into the classroom that we have been trying to create artificially using different methodologies, such as Suggestopedia, Total Physical Response, and Community Language Learning. It creates a context which is enjoyable and encourages play, and lowers apprehensions, making language learning fun. Using the computer can be thought of as a difficult task. Successful control of the computer can raise a student's self esteem to enable her/him to learn a language. The computer also creates a context that is safe and protective. It allows the students to hide; correspondents cannot see or hear each other over the computer network. This creates a sort of comfortable anonymity because students do not need to worry about how their pronunciation is perceived or how people react to their language structure. The anonymity of the network gives students the strength to relax and work or play with the language and to try vocabulary and syntax that might otherwise be avoided. Most importantly, they may attack topics in the second language that they would normally avoid because they may feel incapable of discussing them in the second language. By broadening the topics that students can explore in the second language, language learners grows stronger in their second language. The computer soothes student apprehensions and makes language learning less frightening.

Chapter six talks about how relationships of teachers and students change on

computer networks. The teacher is not standing at the front of the classroom, directing the topic of class conversation. The class is student-centered; the teacher stands behind the students and addresses writing problems, syntax and word choice, adopting the role of facilitator, mentor, and advisor to the language learning process instead of as lecturer in the front of the room. Computer networks can intensify the individual learning process because each student can determine the topics that he/she wants to address. The teacher and the student enter into an egalitarian relationship, where teachers and students collaborate to create good pieces of writing. Technology is becoming an instrumental part of our daily lives. It is making a major shift in how we interact with each other and how we carry on in our routines. In this transition stage, it is important to make sure that how we use technology benefits ourselves and our students. Computer networks can be conducive to the language learning process.

Research has been drawn from foreign languages, distance education, English composition, literary studies, as well as ESL and EFL. Student quotes are not edited. Students' names have been replaced by pseudonyms because their identities do not affect the results of the research. E-mail addresses have also been omitted.

I express a special thanks to Janet Bing and Geodele Guilikers who worked so very hard to help me realize this work.

CHAPTER 2

Available Technology

There are two modes of communication networks, synchronized and asynchronized. Synchronized networks involve communicating in real time. Correspondents must be logged on their computers at the same time. Software programs, such as Daedelus InterChange and Appleshare allow respondents to type their messages into their computer. When they hit *enter*, the message is sent out to the network for the other participants to see. The result is a kind of live transcript that participants can watch develop on their computer screens.

Asynchronized networks do not occur in real time. E-mail, or electronic mail, is probably the most common form of asynchronized networking. Users on networks are allocated space, or an account, on a computer mainframe. The user logs onto the mainframe and accesses the account that has been designated for him or her. E-mail is mail that is composed on one computer and then is sent electronically over a phone line to another computer mainframe and into a designated user's account. The account acts as a kind of mailbox which holds the electronic mail until the recipient logs on and retrieves the mail. E-mail can be sent locally or over a distance. A BBS, or bulletin board system, is like a physical bulletin board. A person can post a message to a BBS, which is then left for others to access and read. BBS's differ from e-mail in some fundamental ways: e-mail is addressed to only one person or to a given group of people, whereas messages are posted on BBS's for users to access themselves. Another

difference lies in how messages are categorized. Messages posted on BBS's are categorized by subject; e-mail is organized by the date that the mail was received. With e-mail, the mail must be cleared from the mailbox periodically, to keep it from getting filled. With a BBS, the articles are automatically deleted after a certain preset expiration time.

Synchronized networks

In the classroom setting, synchronized networks are used in two ways, locally and over a distance. Local networks are called LAN's, or local area networks. LAN's are used to link classrooms and university systems together. When classrooms are linked synchronously, they can be used to replace oral discussion in the class. Teachers use this forum to discuss literature readings and homework assignments and to facilitate small group discussion. As we will see later, this type of classroom discourse produces very positive results.

Synchronized networks can take place over a distance as well. WAN's, or wide area networks, facilitate distance communication, providing access to the outside world. Students can access people who belong to the community of native speakers, the people with whom they would like to establish a rapport. People who pay for such commercial services as America OnLine, CompuServ, or Prodigy should be familiar with synchronized discussions called chat lines or chat rooms.

Synchronized discussions over a distance are rarely used in the classroom setting. One notable exception is ICONS, administered by the University of Maryland. This program centralizes role-playing activities (for a fee) among participating classes from

all over the country and the world. Classes participate in a worldwide debate on a current political issue, first over E-mail and finally in two synchronized sessions. Each class represents a country and its point of view. Tammelin (1994) remarked that while the majority of participants were classes from the U.S., there were a few EFL classes that participated. She found the project was exciting for her EFL students, but it was inconvenient to meet with a worldwide synchronized class discussion at what turned out to be the middle of the early morning.

Synchronous networking allows students to participate fully in class discussions (Pratt and Sullivan 1992, Sullivan 1993). The context is student-centered, allowing the student to offer comments and thoughts to the class discussion without waiting for the teacher's permission to speak (Faigley 1992, Pratt and Sullivan 1992). Because the student is free to participate at will, the role of the student and teacher inevitably reverses; students ask questions and the teacher answers (Faigley 1992).

Unfortunately, women are often still not given an equal opportunity to participate in class discussions, although they have more opportunity to submit questions and comments to the network. They are still responded to less by other members of the class or by the teacher than men (Herring 1993). Students in a computerized classroom may also feel uncomfortable with the less traditional context of the class and feel that they are not being taught anything. As a result, there may be high absenteeism (Bernhardt Wohahn, and Edwards 1990).

Synchronized discussions change the format of the class. Less time is spent on oral discussion and more is spent writing in the classroom (Bernhardt, Wohahn, and

Edwards 1990). One advantage of the network is that administrative details can be covered on the network, freeing up valuable class time (Bernhardt, Wohahn, and Edwards 1990, Corio 1994b).

Foreign language and English composition teachers have found that synchronized networking raises student enthusiasm (Esling 1991, Beauvois 1992, Faigley 1992). When the students have fun writing, their writing apprehension may go down. Schroeder and Boe (1990) found that their English composition students had a good time in writing class. The networked composition class had only a 5% attrition rate as opposed to the 17% rate of the entire program. Pratt and Sullivan (1992) found that their EFL students' writing apprehension did not fall significantly over a seven-week period when they compared their class to a controlled class that did not use the network.

The written language on networks can have a stronger impact than if the discourse was oral. Verbal utterances are softened by paralinguistic devices such as facial expressions or gesticulations (Shaver 1991, Wilkins 1991, Handa 1990a). Networked conversation, on the other hand, cannot be softened by tone of voice or other visual or aural clues. Flaming, or rude comments, can occur because people sometimes don't realize how their comments may look to others on the network.

An advantage that synchronized networks offer is an opportunity for others to see the process that one uses to write, instead of only the final product. The teacher can demonstrate the writing process to the students on an overhead projection of the computer screen. This creates a sense of disclosure that increases the intimacy between author and reader (Shaver 1991). This type of intimacy offers a context for students to express their

feelings more honestly and openly, thus enhancing the classroom discourse.

A major difference between synchronized discussions and transcripts taken from oral conversations is the topic structure. In oral discourse, there is usually only one topic addressed at a time. With synchronized networking, different topics weave in and out, especially when there are several people participating. Synchronized discussion looks a great deal like an oral transcript, though it is produced through writing, not speech. Studies of computerized discourse have shown that writing on synchronized networks contains elements of both written and oral English (Ferrera 1991, Wilkins 1991). Most writing is transactional; ideas are communicated without any anticipation of immediate feedback. Oral communication is interactional; speakers expect and ask for immediate feedback. Computerized discourse is written work that is interactional, displaying characteristics of oral discourse. It bridges written and oral communication (Pusack and Otto 1990, Murray 1991, Beauvois 1992). Bridging the two forms of communication offers advantages not normally found in the writing class. The writing on a synchronized network is interactional; that is, utterances are submitted with the expectation of immediate feedback from the other members of the network. This differs from the paper submitted in the traditional writing class, where students either perceive their audience as the teacher, or neglect to perceive an audience at all. On the network, students learn to write and make a personal connection with their audience (Esling 1991, Handa 1990a).

Not only are students writing for an audience, but they are also reading quickly with the expectation that they will respond to comments that appear on their screen. In this way, students improve their receptive skills (Pusack & Otto 1990, Handa 1990a).

Synchronized discussions move quickly. The student is forced to learn how to read and synthesize the class utterances as rapidly as possible in order not to fall behind (Beauvois 1992, Kelm 1992). Students are more inclined to forget that they are using their foreign language and jump into the conversation that appears on their screens. Beauvois (1992) found that this lowered her students' writing apprehensions in a second language. Pressured by the desire to communicate, language development is promoted (Pusack and Otto 1990, Kelm 1992).

Students also learn how to negotiate the outcome of conversations, whether in English composition class or in the foreign language class (Young 1988, Handa 1990a), though the amount of time needed to arrive to a decision can be lengthy (Wilkins 1991). In some foreign language classes, students learned to use their dictionary more in order to converse more skillfully on the network (Handa 1990a, Kelm 1992). Faigley (1992) found that his English composition students revised more on the network. However, Beauvois (1992) found that her foreign language students tended to have a lot of grammatical errors on the synchronized network.

Asynchronized networks

Asynchronized networks on the LAN are beneficial in managing classroom administrative tasks and facilitating group communication. Susser (1992) handles daily communications with his EFL students by e-mail. Corio (1994b) prefers to set up a class-wide BBS so that all messages are accessible to his entire ESL class. He uses class BBS's to post homework assignments, leave notes and hints on quizzes and tests, discuss the material gone over in class, or leave supplementary materials for students to access.

Both students and the teacher can ask questions and leave questions on the BBS. Corio (1994b) also found that the BBS facilitates out-of-class discussion. A BBS may be more beneficial for the teacher who would otherwise have to answer repetitive student questions individually in an e-mail format.

One change that computer networking has brought to our schools is that teachers are more accessible to students (Hawisher 1992, Moran 1992). E-mail messages can be accessed any time of day, not just during office hours. Some teachers may find it overwhelming to have office hours in addition to having to correspond with students via the computer. Others are pleased with the new freedom they find by being able to work from home with their correspondence (Corio 1994b).

Students use asynchronized networks to find BBS's on the Internet. There are hosts of BBS's that are available worldwide for students to access. Cononelos and Olivia (1993) describe how their students use USENET, a BBS on the Internet, to practice their Italian. There are over 2000 BBS's on USENET, organized by subject, some of which are in languages other than English. Their students read and post messages on an Italian language BBS as part of their language practice. A great number of BBS lists are in English. They offer a number of subjects that could be useful for the ESOL student to practice English in an authentic context. Other BBS's are available by dialing directly to a computer that houses the BBS. Usually the way to find these phone numbers is by hearsay, or by searching through special interest magazines. One such BBS is Scrapbook USA, a library database project where students contribute articles, poems, or stories.

The community over BBS's and e-mail is different. The e-mail community

usually consists of two persons or a small group, the one who sends the message, and the one, or group, who receives it. Received messages are confidential; they cannot be accessed by another person. In contrast, a BBS is an open, public forum.

E-mail is used to facilitate distance education for those college students who cannot physically reach a college campus (Johnstone, Zuniga, and Markwood 1994). The New York Institute of Technology takes advantage of computer conferencing to increase accessibility of students and teachers. Students are more able to converse with the teacher when they would not otherwise be able to due to outside time constraints (Spitzer 1989). Teachers who implement technology may better meet the needs of students who find it difficult to get to school. While distance education is used generally in American universities and community colleges, it provides new potential for EFL students overseas to participate in U.S.-based classes as well as for ESL students who live in remote rural areas in the U.S.

Orillas is a distance education project that is used to help acculturate future university students to American academic culture before their arrival to the States (Goodwin et al. 1993). Students prepare research papers in their home countries and then submit them over the network to their future teachers in the U.S. The project not only provides some practice in the U.S. academic culture, but links the students with mentors. Other ESL programs take advantage of being able to communicate over great distances, encouraging students to link their personal life to the world around them (McCourtney 1994b, Sayers 1993). For example, McCourtney (1994b) sent a computer with her husband to a site hit by Hurricane Andrew so that children there could send

messages out to students in other parts of the state and the world. There are also established e-mail networks, such as Kidsphere, which link K-12 students together on a global scale, in both an e-mail format and a BBS.

Within the class, asynchronized networks are used to collaborate on writing projects among peers in English composition (Eldred 1989, Herrmann 1989, Spitzer 1989, Barker and Elder 1990, Cyganowski 1990, Spitzer 1990, Hartman 1991, Esling 1991, Handa 1990a, Hawisher 1992, Moran 1992, Slatin 1992). Susser (1992) maintains that the computer is not necessary for collaborative writing, but it facilitates exchanging papers for peer review. Peer review and collaboration cause students to write for an audience (Eldred 1989, Langston and Batson 1990). Cyganowski (1990) found that collaboration among English composition students leads to substantial revision. Students should learn to evaluate not only each other, but themselves, rather than depending on the teacher (Barker and Elder 1990).

There has been a great deal of research on the value of collaborative writing in English composition. Collaboration creates a working environment where students can learn and develop as good writers together (Herrmann 1989, Slatin 1992). By working together, students create a community of knowledgeable and able writers (Spitzer 1989) and become more "self-directed and involved" (Herrmann 1989, 119-120). Students produce their writing more for themselves than the teacher (Langston and Batson 1990). Flores (1990) points out that the value of collaborative writing lies in shared experiences, where students learn to value their own experiences and to share them with others. Students help each other develop their ideas, rather than develop them alone

(Handa 1990b). Longhand writing is careful, detached, and logical, but networked writing reflects a genuine change in the thought process. The text is fluid, internalized, and personal (Skubikowski and Elder 1990). The quality of student work on a network becomes more deep and personal when students write for each other (Esling 1991, Spitzer 1989). Students learn to value, trust and depend on the networked community in their writing projects (Skubikowski and Elder 1990). The quality of interaction between the teacher and student also improves over the network (Johnstone, Zuniga, and Markwood 1994). Teachers of English composition find that relationships between the teacher and student change when the class is networked. Traditional hierarchical boundaries break down between the student and teacher and among students (Cyganowski 1990, Hawisher 1992, Moran 1992). Tella (1991) points out that, in a networked environment, activities in the EFL class center upon the student, and the teacher becomes a co-learner.

ESOL teachers use e-mail to coordinate projects with other classes. Two or more teachers can work together to create collaborative projects between their classes. Stanislava and Blaber (1994) found that their project that entailed writing simple research papers in collaboration with two other classes (one in Finland and one in the U.S.) were motivating and highly successful in getting the students to produce large amounts of fluency-based writing. Lapp (1992) partnered her graduate level ESL students with a class of elementary students. She found that this partnership raised the self-esteem and lowered writing apprehension for both the graduate students and elementary-aged writing partners. McCourtney (1994b) also used e-mail exchanges, allowing the students to write

freely to each other. Pen-pal exchanges as well as structured projects create deep, meaningful, and authentic communication.

Distance communication enhances the role play over a network. It is exciting for the student to create simulations or conduct research with a partner class over a distance. Role play simulates real situations, where two different "camps" work together to complete a project. This is a skill that U.S. companies require of their employees. By working with collaborative projects over the network, students interact very realistically with their partners for a real goal. We know from communicative language teaching that realistic role plays enhance the language learning process. In a distance team teaching project, two or more teachers work together to create a structured curriculum. One student from each class must work on a joint project with one student from each of the other classes (Stanislava and Blaber 1994).

For example, the University of Michigan has a program called The Global Classroom. There are several different projects coordinated here such as The Arab-Israeli Conflict Simulation and The Earth Odyssey. The former is a conflict negotiation simulation, where the students act as foreign ambassadors and try to find a peaceful solution to the Arab-Israeli problem. The latter is a project which "takes" students on adventure trips with a "mentor" who has actually been there. Experiences of the mentor's travel are shared with the students. In this way, cross-cultural communication, geography, and ecological issues are explored. Another project, World Forum, is an adventure simulation, where students role-play a trip to an "exotic part of the world" (Stanzler 1994), such as the Arctic. Participants take on the role of a famous figure and

simulate his or her travels. This project is aimed at developing "a broader and deeper understanding of the world" (Stanzler 1994). The Global Classroom is made up mostly of, but is not limited to, K-12 American students. ESL students who participate in this program not only have the opportunity to practice with and model their English after native English speakers, but they also have a unique perspective of their own cultures to bring into the forum.

There are other projects that may be more applicable for different classroom communities or more comfortable for some English teachers to direct. For example, students from different countries can document local histories, legends and folktales and send them to their partner class. The International Poetry Guild of the University of Michigan promotes collaborative poetry writing and subsequent discussions of "poetics and the creative projects" (Stanzler 1994). If the students are given responsibility to choose their own tales, they may well find vocabulary that is more interesting or personal and therefore acquire that vocabulary more readily.

Networking has fostered many advantages in different types of classrooms. Students are stimulated by a networked environment, both in the English Composition class and in the ESL class (Bernhardt, Wohahn, and Edwards 1990, Shaver 1991, Corio 1994b). They spend more time reading and writing on an asynchronized network (Corio 1994b, Stanislava and Blaber 1994). Bernhardt, Wohahn, and Edwards (1990) report that student participation also increases.

ESL teachers find that communication on a synchronous network is authentic, deep, and meaningful (Goodwin et al. 1993, McCourtney 1994b). Emotional

involvement in the current subject brings a new level of insight. Slatin (1992) also found his English Literature students explored the assigned poetry more deeply over a network than he had ever seen before in class. The interactive context of communicating over the network seemed to bring the poetry alive to the students, creating an ongoing discussion between the literature and the students.

Much of the research thus far is based on observation. Research in English composition is far more extensive than in the ESOL field, particularly with respect to the kinds of writing produced. Research in English composition has shown that the writing displays characteristics of both written and spoken English. Does this happen in the ESL classroom? Is it conducive to language study?

Research that should be extended to the ESOL field would address how different cultures respond to learning on computer networks. Are students from all cultures empowered by the use of the computer, or do some students do better in a traditional classroom setting? At what language level should students begin to use the network? Should we save our technologically enhanced classrooms for only the advanced student, or would a network help the lower level student as well?

The computer brings new activities to the language class. However, Garret (1991) points out that in a foreign language class, the actual use of the computer in the classroom does not constitute a teaching method in itself. When searching for new uses of the computer, Curtis and Kelm (1992) found that their English composition students were not as encumbered by traditional dogma as trained teachers are and, therefore, are more able to see potential uses of the computer. Students then, not teachers, should be

the focus of research if we are to realize greater potential with the computer. Skubikowski and Elder (1990) found that their students in the English Composition class set a standard for networked discussions, implemented innovative ways to use the computer, suggested interesting supplemental readings, and set their own goals in student/teacher networked discussions.

The educational use of computers in the ESOL field is far behind the computer's potential. In order to effectively utilize technology, ESOL teachers should be aware of how innovative uses of the computer can be tied to what we know about second language learning and language teaching methodologies (Murison-Bowie 1993). It is from this point of view that we should examine current teaching methodologies in relation to technology.

CHAPTER 3

General Advantages of Networks

Networks allow the student to access resources previously unavailable in a classroom setting. BBS's and e-mail lists provide an opportunity to converse with an unlimited number of English speakers on a infinite number of topics. Classroom collaborative projects permit teachers to design projects that are geared to meet specific goals while increasing the amount of intereaction available to students. It is possible to conduct research using ERIC over the Internet and to download articles from thousands of scholarly journals using UNCOVER. There is an ever increasing number of literary works available on electronic libraries to download. There are many other resources available on the Internet such as news services, weather stations, governmental agencies, and universities. In this way, students are provided with unlimited opportunity to explore resources and converse with others in English.

Krashen's Integrative Motivation theory is defined as "the desire to be valued members of the community that speak the second language" (Krashen 1981, 22). 'Receptive learning' is more likely to take place when students have the opportunity to participate in and become members of a community of native speakers. Computer networks provide students with the unprecedented opportunity to correspond with a vast number of people who speak English through the Internet. By logging into a networked discussion, students are automatically members of the Internet community that exists within the system.

Discourse on computerized networks, whether synchronized or asynchronized, is real and meaningful. Networking over a distance offers the students an opportunity to discuss topics with other students and people who speak English. Communicative teaching methodology strives to "give students an opportunity to develop strategies for understanding language as it is actually used by native speakers" (Larsen-Freeman 1986, 132). Networking makes it possible to communicate outside of the classroom context. As one student commented from my ESL networked writing class:

> I think this project was interesting because it gives you the opportunity to communicate with people who under different circumstances you couldn't communicate with. (Student X. Final Evaluation. Fall I 1994.)

There are hundreds of e-mail lists and BBS's covering virtually any topic that you can think of available on the Internet. Students can participate in a variety of BBS's or e-mail lists based on their professional or personal interests such, as computer engineering, English teaching, karate, or women's studies. They can explore their subject and enter into real, meaningful discourse with people who have similar interests. "The replies and contacts with leading professionals gave my students a sense of importance and maturity" (Shneiderman 1992, 19).

In one of my networked classes, my students browsed through NETNEWS, a BBS system composed of hundreds of different subjects. They accessed a subject of their choice and then proceeded to read and respond to those messages which interested them. One of my students from Zaire discussed apartheid with people in South Africa and the United States.

> In the Netnews I found many different things. The story write from another country, culture, career and I even talked to a guy from South

> Africa. By the news of S.Africa I learned a little about actual politics, economics and social problems. I took a glimpse to the news of France and Japan too. (Student N. 11 Oct. 94.)

Cononelos (1993) describes how her foreign language students work with a BBS on Italian culture. The students read and contribute to the BBS on a regular basis to supplement their language studies. She found that there "is less need for teacher feedback since there is interaction with readers of NEWS." Her students report that they felt they improved their writing from the project. The students worked well with the BBS because language should be used within personal experience and "direct language use with the target community" (Tella 1992, 8-9). "The purpose of learning is not to store facts in the students' head, but to engage with people" (Shneiderman 1992, 18). One of my students sent me a note describing her reactions to the possibility of the Internet:

> Although sometimes I have some problem with the computer, I am happy to study new thing that I have never known. I think this e-mail class will let me contact with the other people in any part of the world. (Student Y. "Welcome!" to Kirstin. 5 July 94.)

She quickly learned how to contact people in her home country, and regularly keeps up with events there. The Internet offers an unlimited opportunity to communicate with other people in a meaningful context. "Contextualized, appropriate, meaningful communication in the second language seems to be the best possible practice the second language learner could engage in" (Brown 1987, 56).

E-mail projects can encompass the interests of students because computers can individualize classroom study. Students, each on their own computer, can choose their own course of study from the vast resources on the Internet. "Students will be more

motivated to study a foreign language since they will feel they are learning to do something useful with the language they study" (Larsen-Freeman 1986, 133). The students in my ESL networked writing class found their topics of research interesting:

> Even though seven week wasn't enough but I learn and discover from e-mail class how to expend my knowledge and to know about other things that are important to the recent discovers in the sciences and to communicate with the world. (Student N. 11 Oct. 94.)

During the summer of 1994, I taught a class of ESL graduate students who participated in e-mail lists related to their academic fields. They were highly motivated to stay on task and correspond with professionals and/or students who participated on the lists, while I was free to walk around and monitor their writing. They were working with subjects that were important to them and learning vocabulary they would need for their graduate studies. The potential for them to retain material that is important for their academic careers was greater than any textbook assignment could be. There is, however, danger that the discussions on some e-mail lists are too broad or non-directive:

> This class has revealed a wide possibility to participate in professional, academic and personal interaction among people. I'd have wanted to learn more information according to my major. But I found that sometimes the topics of discussions were senseless and uninteresting. I would not like to waste time reading such things and cleaning my mail-box out. (Student X. Final Evaluation. Summer II 1994.)

One of my classes participated on an e-mail chat list for ESL students from all over the world, CHAT-SL. There are corresponding special interest lists that students can subscribe to, such as Music-SL and Rights-SL, which are forums for discussing music and human rights respectively. The diversity of subjects allows students to specialize in their interests. In this fashion, students can discuss topics that interest them

while working in a low-stress environment by corresponding with other ESL students who make similar grammatical and lexical errors. This takes away the added stress of corresponding with native speakers and participating on e-mail lists for the first time. Students can "lurk," become accustomed to the discourse and decorum of an e-mail list before participating fully in e-mail discussion.

More advanced students can participate on regular professional or academic e-mail lists. For example, a few of my ESL students who were preparing for graduate school subscribed to a law school list.

> My specialty is Law. Therefore I'm interested in communication by e-mail with other lawyers. I eager to know more about the U.S legislation system. (Student A. 5 July 94.)

One disadvantage of chat lists is that they are not structured projects. Students are not corresponding to reach the goal of creating a collaborative project, so there is less purpose to their writing. The lack of purpose may lead students to find that there is "nothing interesting going on" and lose interest or discontinue participating. "Pen-pals. I'm not so keen on this. Students tend to list possessions, likes/dislikes and often fail to communicate beyond this" (Tella 1991, 97).

Chat lists also take away the control that the teacher has in designing structured projects. The advantage of e-mail lists is they take very little dedication and preparation on the teacher's part for projects to work successfully in contrast to collaborative class projects that demand a great deal of administrative work and planning. Corio and Meloni (1994) mentioned that about 120 messages were exchanged among the three teachers in order to determine what their collaborative project would be.

Many teachers choose to create structured projects on which the entire class collaborates. Usually, one or two partner classes are set up so that the students can work with partners from other classes. Corio and Meloni (1994) worked on a collaborative project among three classes, one each in New York, Washington D.C., and Richmond. Each class developed a tour guide for their city. The classes were divided into committees, for example the "restaurant committee" or the "transportation committee." Like committees collaborated on ideas and reviewed each other's work over the Internet. The resulting project was a tri-city tour guide.

If students are from a single academic field, the projects can be geared to suit their academic needs. For example, business students could simulate negotiating a business transaction. One class could act as supplier, creating their company, merchandise, and prices. The partner class may act as retailer, setting up a chain of functional stores that they need to supply. Students could research their products and prices in correlation with real market trends. This would offer valuable language practice for their academic studies and future professional lives. Bridging the gap between their language studies and their academic disciplines raises the interest and motivation needed to effectively learn a new language.

Collaborative classroom projects require that the teachers remain dedicated to the project. During one unsuccessful collaborative project, my students attempted to correspond with an American high school class. The project did not succeed because we teachers did not invest the time and energy to structure the project well. As a result, a great deal of time elapsed before my students received a response to their letters,

allowing time for only one exchange of mail in the class session. This proved to be frustrating for them:

> I also think that the other teachers were...well, maybe everybody was not very organized...
> It would be a lot (more) interesting if someone wrote me back. (Student X. "Class evaluation." Fall I, 1994.)

The Internet offers a tremendous potential for research and study in English. It is advantageous when the student lives in a country where few English language sources may be available. There are thousands of resources on the Internet, such as federal and university libraries, such as carl.org, government departments, such as the U.S. Geological Society, and professional organizations, such as TESOL.

Telnet site csi.carl.org is a library service that allows one to search resources using ERIC and Encyclopedia, to download journal articles using UnCover, and to search and read articles posted on electronic journals. Electronic journals model the format of professional journals in the library, only they are published expressly for on-line access. The electronic library also allows you to download writings in the public domain, such as those of Shakespeare and Milton, a good resource for the EFL teacher overseas. Students need these skills not only for on-line research; it is now almost impossible to locate sources in most libraries without using computerized systems.

E-mail archives are also a good place to conduct research. The student can locate an e-mail list that discusses a given subject, and then research the archives to discover what professionals have discussed on that subject. For example, the TESL-L file list offers a tremendous number of resources, articles, and discussions for teacher training.

Telnet site enews.com is an online news service. This service allows the user to

read the day's news. I used the service with my EFL students who had completed their in-class assignments before the end of class time. They always wanted to know what the news was at home. This service allowed them to read about it in English in the class time they had left.

Browsing is looking for resources on the Internet without having any exact idea on how to find or exactly what resources you are looking for. I like to compare the Internet to the unfinished Gaudí cathedral in Barcelona. It has two majestic spires that reach up to the heavens and some walls to give it shape, but is missing a ceiling and an interior. The Internet resembles the cathedral in that it is a fantastic creation that seems to stretch on for eternity. It is possible to see its basic shape, but the Internet is constantly under construction. As a result, it is not feasible to tell exactly what you will find when you browse the Internet. Traditional teaching involves giving students a set curriculum, with a prescribed body of knowledge. The teacher knows exactly how to lead the students through a problem and a predetermined curriculum. But networking on the Internet involves a new set of factors. There is so much available on the Internet: new e-mail lists, new BBS's, new bodies of knowledge input into various mainframes, that it is impossible to know at any one time precisely what the students will discover. Managing resources effectively requires collaboration between the students and the teacher and among the students.

It is sometimes frustrating for both my students and me when I cannot give them explicit instructions on how to find information that is most useful for them. I have some students who are very frustrated and lost with the prospect of looking for subjects

in NETNEWS alone. NETNEWS has more than 200 topics that can be located either by searching by keyword or by browsing. CARL (Colorado Alliance of Research Libraries) makes available over 10,500 multi-disciplinary journals using UNCOVER2 (Gibbs and Smith 1993, 89). As of 1993, there were an estimated one million computers connected to the Internet, with a thousand added every day (Gibbs and Smith 1993, 9). Students inevitably ask me for a resource that I have never attempted to locate, which can be very challenging for me. My students are usually much more forgiving and willing to help me find the resource than I am to myself. They often provide a source of inspiration and excitement to the class when they learn about interesting things that they can find on the Internet.

> Help! Would you please give me any more complicated task? (Reed-Perez. Teachers Log. 7 July 94.)

Authentic resources are motivating. They are real and interesting, providing a much more interesting context than the textbook readings. Networking is authentic; it is a stimulating environment where real people, ideas, thoughts, and feelings converge on a single platform that the student manipulates both physically and mentally. This kind of stimulation provokes the inner motivation needed to successfully tackle and learn a new language (Brown 1987).

> I asked about [the student's] motivation, [I wanted to know] if they were still eager. Everybody *confirmed* that they were enthusiastic. It was taken for granted. I told them *everybody* was expected to write on a diskette and send e-mail. Again, *everybody* nodded their heads, of course, why ask. (Teacher's log) [emphasis in original] (Tella 1991, 122).

Students arrive early and stay late, reluctant to sign off from their computers when they are participating in a networked activity (Gerrard 1989, Bernhardt, Wohahn,

and Edwards 1990, Beauvois 1992, Stanislava and Blaber 1994). In one observation, Beauvois (1992) noted that her foreign language students didn't watch the time pass and that she had trouble getting students to log off. "There is so much to say!" (Beauvois 1992, 459). In my class, I usually had to remind the students to begin logging off fifteen minutes before the end of the class session. They invariably left at least fifteen minutes *after* class is over, even with constant prodding. McCourtney (1994b) taught a combined class of high school ESL and special education students. One night, she returned to her lab to do some work and found a group of her students in the lab working on a project. They had talked a janitor into letting them into the lab late that night so they could complete a project. Another ESL teacher reports, "I've had students who would not stop writing on e-mail. This never happened with pen and paper" (Tillyer 1994).

Student participation is usually greater in computerized classes than in traditional classes. Fewer students drop out of university classes that incorporate computer conferencing (Spitzer 1989) than in traditional classes. McCourtney (1994b) reported that students dropped other classes to enter hers so that they could work with computers. We know from language acquisition theory that language learning is enhanced when students are enthusiastic about their studies.

The students' attention spans and levels of interest are heightened during networked sessions (Bernhardt, Wohahn, and Edwards 1990, Esling 1991, Beauvois 1992, Corio 1994b, Stanislava and Blaber 1994, Tillyer 1994). Students work more, and often surpass the minimum requirements of the course. For example, Stanislava and Blaber (1994) required their EFL students to produce only 200 words for a long distance

collaborative writing project with another class using e-mail. Corio (1994b) found that some of his ESL students spent a great deal of their own time in the computer lab participating on BBS's. My ESL students regularly went to the computer lab outside class to correspond with their writing partners and other friends. They also spent a great deal of time working on their letters, producing several pages of written text to send to their writing partners. This was surprising to me, as I had witnessed them struggling with only a half-page essay on a word processor for another class. The writing flowed more easily in the networked class.

Authentic resources are used by many teachers in their classes because they are interesting and motivating for their students. Authentic resources, such as newspapers and videos, are used extensively in Communicative teaching methodology to develop communicative competence. Computer networks offer something more than other authentic materials do--they offer the student a chance to respond and interact with the text they read. Electronic communication systems offer an opportunity for an ongoing dialogue to occur between the student and the authentic resource--the community of users and resources on the Internet.

CHAPTER 4

Initial Difficulties

There are a variety of difficulties that teachers and students may encounter in the networked classroom. Students who are unfamiliar with computers and networked technology may initially be apprehensive when introduced to them, impeding their chances of success. Teachers, too, must consider their own apprehension and determine whether they can surmount inherent difficulties that technology brings. Technology is constantly changing and requires a constant dedication to continually educate oneself in the current technology. Computers sometime break down and so demand great flexibility in the class curriculum. And when working with the ever-expanding Internet, students often have questions about resources or novel uses of the technology that the teacher may not be able to respond to.

Though using computers in the classroom is becoming more and more common, students and teachers may be inhibited and lose the full benefits that computers offer (Susser 1992). Students may not be able to participate fully in classroom activities when teachers aren't knowledgeable about the use of the technology or when students are too apprehensive to work comfortably with the computer. In order for users to benefit most from computers, they need to become familiar with them, and in so doing, overcome their apprehension of them.

Though the tasks involved in using a computer are fairly simple, people who are not accustomed to it often feel overwhelmed and anxious when faced with a computer

for the first time. One study of American students, who participated in a technologically enhanced class, felt apprehensive about using the computer. "Two of ten said either that they were not proficient or had difficulty learning e-mail, even though they eventually mastered its use" (Johnstone, Zuniga, and Markwood 1994, 12). Older people are more often inhibited by computers and take longer to become comfortable with their use than younger students. Conversely, many younger students have grown up with computers and are more experienced using them. Students who are skilled with the computer offer a valuable resource in the classroom. I usually have these students sit in the middle of rows to act as designated consultants to assist the students around them. Most students, however, regardless of age, eventually become adept at using the computer.

> (...) when writing the on-line letter, [Teacher C1's] head was quite blank, he suddenly couldn't think of anything clever to write, because he still had to concentrate on the technical side of the matter. This is understandable, and will soon vanish when the technical points are no longer so essential as they are in the very beginning (Tella 1991, 118-119).

Submitting messages to a computer network for the first time may be as threatening as learning the computer. Students may be reluctant to submit a message to the network out of shyness or fear about how their messages may be received. "New users are almost always reluctant to send notes or messages (during computer conferencing)" (Spitzer 1989, 192). "Communication anxiety" is grounded in fear, where silence may mean failure and contributions demand response (Hawisher 1992). Networked communications incorporate a new set of etiquette, or "netiquette," that new users are unfamiliar with. This can be frightening. The first step to become comfortable with e-mail lists is to "lurk," or read the letters sent to the list but not respond to them.

After new users become familiar with how people respond to each other and how topics are addressed, they are more at ease to begin actively participating.

There are other obstacles to overcome in addition to accustoming the student to using the computer in the class--the culture of communicating by e-mail. If the students are involved in an e-mail list or a BBS, they may be reluctant to participate. One of my Russian students asked me if it was polite to submit messages to a student e-mail list that the class was participating on because he was concerned that it was rude to "interrupt" others' conversations. After I assured him that the conversations were "open" and that he should feel free to participate in any topic that he wished, he became less apprehensive submitting to the network.

Students should have assignments that gently encourage them to concentrate on their work and become accustomed to using the computer. Projects should build on technological sophistication slowly throughout the class term. In this way, students are eased slowly into using the computer and may find the experience less stressful.

For some, the idea of using technology for the first time can be so frightening that new users may fail to realize their ability to manipulate computer networks. After students use the computer network once or twice, it becomes easier. One of my ESL students in an e-mail class was an English teacher from Brazil who was older than the other students. During the first week of classes, his progress in learning how to use e-mail was slow relative to the rest of the class. His frustration level became high enough to make it necessary for me to offer him some additional help outside class. However, during the second week, he managed to work out the process himself and declined my

offer. The following week, I noticed that he was sent a message on CHAT-SL, on which all of my students were participating. His entire message was hidden in the subject line. I was worried that he would not be able to find it hidden within the mass of lines in the header, but he had no problem locating his message. In fact, he found the error humorous. Many new users will put their first message in the subject line of the header rather than in the message space. This error usually occurs only once, when the student is working through the process of sending mail for the first time. Johnstone, Zuniga, and Markwood (1994) found similar results from their survey of American university students. "Seven of ten (students) were strongly positive about computer conferencing/e-mail" (11).

However, some students may take more time than just one semester to work through their apprehensions. Another student in one of my networked ESL classes was very apprehensive, and this kept him from participating in the class activities. In my field notes (July 14, 1994), I recorded:

> E. is feeling frustrated with the projects (that I have assigned thus far)... (he) has been spending a great deal of time in class with his arms folded and with a frustrated, maybe angry look on his face. He is also very concerned about the workings of the technology; the computer, the Internet. It seems that he does not want to use them at all until he understands everything. (Reed-Perez. Field Notes. Summer II, 1994.)

As the seven-week session progressed, the student worked better with the network, but still remained fairly withdrawn and apprehensive.

Another way to lower computer apprehension is to use software that is user friendly, if possible. Icon-driven software is engaging and requires little training to use. It entails using pictures, or icons, and key words to direct the computer's functions. This

type of software saves students from needing to learn a list of commands to manipulate the computer (McCourtney 1994a). Other software programs that do not use the windows format force the user to memorize commands and keystrokes. The Icon-driven "Windows" format that has been the characteristic of the Macintosh is now becoming the standard with DOS applications. With the development of the Power PC that runs both Macintosh and DOS formatted software, Icon-driven software will probably eventually become the standard.

Unfortunately, my school's software is not icon driven. Instead, I translate useable information from the standard software documents into a form that my students can easily read and follow. Important, basic commands are put on colored strips of paper with the commands in bold to make them easy to read. During the semester, when my students ask me to repeat how to perform a simple task such as logging on, I hold up the colored strip of paper to remind them how to complete the task.

Enthusiasm for the networked classroom and the technology it entails can assuage apprehension that students may first feel about using a computer or participating on a network:

"All right! All difficulties will be overcomed!" (Student E. 30 June 94.)

Using technology requires that teachers instruct its use to the students and invest the time needed to continually update themselves in the technology. Spending classtime to work with students on the technology will be well worth the effort, for using the technology helps to build the confidence that students will need in working with a foreign language. "Proud that they (English composition students) can operate the computer, they begin to

think they can succeed as writers. They feel less stigmatized by their presence in basic composition and more confident of their writing" (Gerrard 1989, 97). Networked classes are enjoyable; they encompass the technological entertainment that grips society today. When used to educate, computers can be hypnotic and exciting to our students, which may help overcome or eliminate any apprehension that the student feels.

Some class time is required in teaching the use of computers, though most students are fairly proficient after about three weeks. The benefits of using the computer outweigh the time spent teaching students its use. Using computer networks in the class also entails a dependence on the technology. There is often little forewarning when the network goes down. Using computers demands a great deal of flexibility and organization on the teacher's part to overcome these inconveniences. Finally, good use of the technology requires teachers to constantly update their knowledge about the use of and advances in technology in education.

CHAPTER 5

Specific Adaptations of Networked Technology

Student learning styles are influenced by synchronized and asynchronized networks. Students who self-monitor their errors very strictly are so apprehensive about their grammar and using the correct vocabulary that they are unable to effectively communicate in any type of spontaneous, communicative situation. Synchronized networking is effective in addressing the difficulties that students with high language monitors have. Because the discourse that occurs on the computer screen is very rapid, students do not have time to worry so much about their grammar and lexicon. Instead, they learn to jump into the discourse and communicate. On the other hand, students, who do not self-monitor language errors, converse freely and do very well on synchronized networks, though their language is filled with often fossilized errors. With asynchronized networks, students have the time to monitor their language errors. Because student writing on the network involves communicating with an audience, students are pressured to correct their errors to the best of their ability before they send their mail out to the network. These are two different types of networked technologies that bring previously unseen benefits to the classroom.

Krashen's Monitor theory (Krashen 1981) explains how students can impede or enhance their success in developing their second language. The Monitor is a function that the "performer," or the student, uses to track errors in language production. The higher the Monitor, the more the performer concentrates on language form. Monitor

overusers are those who apply grammatical rules to their language production too severely and Monitor underusers are those who do not correct enough (Krashen 1981). When the language Monitor is too high, grammar is too severely checked for effective communication. When the Monitor is too low, the language is filled with errors and errors become fossilized. Different types of networking can raise or lower Monitors, thus enhancing the student's chances for success. "Successful Monitor users edit their second language output when it does not interfere with communication" (Krashen 1981, 12).

Language students must have the time needed to successfully monitor their language production (Krashen 1981, 3). The task of asynchronous networking provides adequate time. E-mail correspondence with individuals, e-mail lists, and BBS's all allow respondents the leisure to compose messages at their own pace before submitting them. The computer enables students to work individually, yet intensely, within a network. Unlike synchronized networks, which demand immediate response, students can take more time to compose a message not pressured by the pace of other students who may be more advanced in the language.

Asynchronized networking can be carefully geared to benefit Monitor underusers by developing projects that promote formal language production. Tammelin (1994) and Stanislava and Blaber (1994) reported that their EFL students spent a great deal of time perfecting their letters before they sent them out on the network. Some students worked for hours. Some of my students also spend a great deal of extra time on their own in the computer lab, perfecting their letters before sending them to their writing partners.

Often the lack of a text editor will cause students to work extra hard to create a perfect letter before sending it out over the network. For example, Tammelin's (1994) students were involved in a project called ICONS, which is an international political simulation. ICONS, International Communication and Negotiation Simulation, is organized each semester by the University of Maryland. ICONS is divided into two programs geared for high school or university students. Classes from all over the world participate in a negotiation simulation by assuming "the roles of foreign policy makers" in negotiating an international issue. Each class represents a country, researches its position, and submits its case to the SYSOP and other country teams. Classes then continue to update their position over a four-week period by negotiating with other classes. Tammelin (1994) found that her students took their roles very seriously, carefully editing their writing before they submitted it to the network.

Messages on asynchronous networks can be under-monitored when it is more important to communicate quickly than to spend time creating a perfect utterance. The following is an example of a student who composed a quick message before class:

> Good morning! How is your feeling today? Before I tell you about the subject, let me tell you something, I have not time, 8:55 A.M, I should go grammar class 5 minutes later, could you explain that how I can connect with my friend who lives in other city and other state I really want to know those commands before I leave St. Michael's College. If you see this massage, could you explain this afternoon. Also I want to see you after class because of those guestions. See you later ... (Student S. "Picnic." chat-sl@latrobe.edu.au. 13 Jul 1994.)

This student is a member of an ESL student pen-pal list, CHAT-SL. I imagine that she probably wanted to address the question to her teacher, but the message was sent out to the entire membership instead. Compare this message with one written by the

same student a week later:

> One day I read a interesting article that indicated about death rate of businessmen. Over 50% of businessmen, who are working at companies in the Industry countries which are Hong Kong, Taiwan, Korea, etc. struggled with severe stress that came from their positions. What's purpose of their works? I am very curious about those kinds of modern abuses . We need take a break such as picnic that gives to us new power or energy...
> Catch later !!! (Student S. Jul 12 mail, "picnic." CHAT-SL@latrobe.edu.au. 15 July 94.)

The student's punctuation and spelling are much better in the second note and the sentence strings are longer. She has significantly fewer errors in her writing in the second piece than in the first, probably because she took more time to carefully compose her message.

Unlike asynchronized networks, synchronized networks occur in real time. Synchronized networked conversations generally move very quickly, forcing participants to read the discourse at the same time as they compose a message. The hectic pace of simultaneous reading and writing provides students with little time to monitor their errors. Synchronous networking appears to be advantageous for those who may be unable to effectively communicate in traditional situations because they monitor their language structures too severely. Synchronized networks force students to lower their Monitors and accept faulty utterances in order to "get them out" on the network. The ideal computer classroom set-up would allow teachers exposure to both synchronized and asynchronized networks. This would allow teachers to individualize instruction and provide the needed technology for each type of language learner.

The speed of synchronized discussions produces a great amount of writing.

Tammelin (1994) reported that her EFL class produced 200 messages on a synchronized network in one hour. According to Kelm (1992), his foreign language students wrote and read about 120 comments each 50-minute session of a synchronized session. Slatin (1992) found that his English composition students produced over 600 pages of text by the end of the semester. Beauvois (1992) reported that her foreign language students worked very quickly on the synchronized network. "Within five minutes student messages were scrolling on the screen almost as rapidly as one could read them" (457).

Tammelin (1994) reported that her Finnish students had to learn the new skill of fast language production to keep up with their American counterparts and therefore had little time to monitor errors and language construction. On the other hand, Beauvois (1992) found that her foreign language students monitored during synchronized sessions. The software program that she used, Daedelus InterChange, allowed the students to phrase and rephrase their sentences before sending them out for the class to read. However, the pressure to respond quickly and the speed of the networked discourse was great enough to check excessive monitoring. Nevertheless, the flow of discourse can be overwhelming at times, thus raising the level of apprehension. Sometimes students cope by resorting to using their first language. Kelm (1992) found that his foreign language students usually attempted the utterance in the L2 first and then paraphrased in their L1 in parentheses.

Networked communication, whether synchronized or asynchronized, takes place over networks visually. Students can use each other's messages to model their responses. The phrases they model, however, may not always be accurate. When a single ESL

class is networked synchronously, for example, students may perpetrate errors by modeling incorrect language constructions. On the other hand, if an ESL class is corresponding with a class of students whose native language is English, then students will have a better, more authentic model to follow. One of my classes corresponded with a class of American high school students. When they received letters from their penpals, they would print them and model the language from the letters in their responses.

It is difficult for the teacher to supervise on a daily basis without giving formal feedback to the student. Transcripts of synchronized sessions can be used to correct errors and to teach idiomatic expressions, new lexicon, and language structures. Teachers can monitor the students' progress by having various discussions forwarded to her electronically or printed up for review at the end of the semester. Corio described how his students forward their work (Corio and Meloni 1994). At the beginning of each semester, the students set up an address book so that each time mail was sent by one of the students, a copy was automatically forwarded to him. In this way, he could keep track of the students' progress as well as provide feedback. These portfolios, whether in print form or in electronic form, offer a valuable synopsis of the student's progress. Many teachers report that transcripts are useful tools because the "conversation" on the network can be printed up into a hard copy, thus providing proof of student errors for review (Kelm 1992, Sullivan 1993, Beauvois 1992).

Students work harder to fully express their ideas in order to communicate more effectively on a network. Kelm (1992) found that when his foreign language students were engaged in interactive projects on the computer, they attempted to integrate new

vocabulary. He found that every student used a dictionary by the seventh week of classes. Kelm (1992) also found that his students experimented with shaky grammatical expressions rather than avoiding them: "Albeit difficult to quantify, language instructors generally agree that interlanguage speakers frequently avoid certain specific speech patterns" (450). But Kelm (1992) found that his students were actually comfortable enough to try grammatical structures they would otherwise avoid in order to present points more clearly. However, Tella (1992) found that in his e-mail classroom, EFL students did not work to improve their language:

> Another point perhaps worth mentioning, was the relatively little use of dictionaries, grammars and, actually, any reference material be it linguistic or related to the topic--contrary to my expectations. On the whole my goals, aims and expectations were pinned a bit too high. (99)

Perhaps the differences between the two classes and degree of success that teachers found in their students' initiative to work on their language lie in the age groups. Kelm's (1992) students were university students who were voluntarily working on their third language, but Tella's (1992) were grade school students in a required class. Further research is needed in this area to determine if students actually work harder on their vocabulary and syntax in the networked class, and if so why.

Peer pressure affects L2 learning. When people are pushed into producing error-free utterances, they will acquire a language much faster than those who are allowed to "get by" with minimal accuracy (Brown, 1987). On a network, the writing and the author are "accessible and public" (Eldred 1989) to all participants on a network. Students learn to write for an audience since contributions to the network are read by all of the students and the teacher. In e-mail lists, contributions are also read by an

unlimited number of "strangers." As a result, students monitor their own writing errors more than in traditional writing assignments, which are usually written for the teacher's eyes only. Kelm (1992) found that his foreign language students were very critical of one another during synchronous networked sessions. They corrected each other's utterances on the screen. He did, however, find that when one student attempted to correct mistakes that she saw, she was eventually silenced by the other students. Susser (1992) found that his EFL students did not like to correct each other on the computer, especially with letter writing projects. While correcting others on the computer screen can be constructive, because the "conversation" is visual and corrections are easily perceived, peer criticism of errors on the screen is not always successful.

Sometimes students criticize each other in more than just language errors. Corio and Meloni (1994) coordinated a project where students worked collaboratively in groups within each class and communicated across classes on group progress and review. The groups were to review the language and content of their projects. One student went further to remark on a co-group's methods in organizing the project, which differed from his own:

> I received from somebody some of the restaurants information. I think we should be organize and we shouldn't send particularly information about restaurants. As GWU restaurant group we have been collecting the informations and we are preparing now the introduction and the introduction plan (outline) of Washington's restaurants. In a few days we will send you our study. My advice - you can prepare your study like us because that way is more clear and more organize. (Corio and Meloni 1994)

This students shows great pride in his group's collaborative efforts. This sense of ownership carries into the writing process and helps to stimulate student synergy in

writing.

Students discuss revisions in writing, providing further written exercise (Spitzer 1990). Transcripts of student discussions can be printed for later reference (Spitzer 1990) to be incorporated into the final essay (Williams 1991). Students can exchange ideas about and improve word choice, grammar, punctuation, and spelling (Curtis and Kelm 1992, Williams 1991). Error correction serves to raise the Monitor and improve language production. Peer revisions are used in collaborative writing. Students correct errors and suggest changes in content and language construction. Collaborative writing produces a community of able writers that write for each other and with each other to produce a quality piece of writing (Susser 1992, 69). By working together, students can create a body of knowledge (Susser 1992, 68) where deficiencies in one author can be made up by the strengths of another (Williams 1991). Corio and Meloni (1994) found that their students seemed receptive to peer review and evaluation:

> Thank you very much for your opinion it made me feel good. How about your museums? Are you having any problems with your assignments? Please tell me, maybe my group can help you. I'll talk to you later. (conference handout)

Corio (1994a) uses peer evaluation effectively within the class as well:

> The essay sound very good to me. Its organization is very in order. It focuses directly on the main ideas. It makes the reader easy to understand what the writer is trying to say by using simple words and simple sentences. Although it is well organized, I feel that there are not enough information to know about Michael Bolton. For example: she did not use examples to support for her ideas. All she did was jut using words to support for it. (conference handout)

Peer review works when it is assigned by the teacher. If students attempt to criticize each other freely, their advice is often resented by the other students.

Computer networks benefit the student by helping adjust their language Monitor so that language learning is more efficient. The speed of synchronized networks often serves to lower the language Monitor. Conversely, asynchronous networks can raise the Monitor because students have time to work on their writing. Whatever the type of networking, students are pressured to monitor because the student writing is public; there is a genuine need to communicate ideas accurately. In addition, peer evaluation is a valuable tool in collaborative networked classes to monitor errors and provide feedback to each other.

CHAPTER 6

Specific Advantages of Computer Networks

Computer networks naturally create a context that is conducive to language learning. Students have fun when they work with the computer, making language learning fun, too. The computer creates a context which provides anonymity for the student. Students feel safe and comfortable because they don't need to worry about how their pronunciation is being perceived; they can't see how people react to their syntax or language. Thus, langauge production is removed from students' self-esteem and ego. It gives students the strength to relax and work or play with the language without risk of being embarrassed in front of others.

Technology and computers bring to mind images of hard, cold machinery and complex algorithms. How can the computer possibly address the emotional and psychological variables that affect language learning--the whole person? In actuality, the computer provides a new forum that protects the whole person and creates a context in which learning can take place. It is associated with video games and television, technology which is entertaining and fun. Computers can be manipulated and told what to do, placing into the user's hands its awesome power. They are a forum for communication, a translator between two conversants. Students can hide behind the computer screen, creating with it a shield that can protect students from visual or aural contact with those they communicate with. Computers act as an environment that protects language learners and facilitates the learning process.

Apprehension is inherent in language learning. One of the goals of methodologies such as Suggestopedia is to overcome apprehension by creating a context that is positive and fun. The emotional well-being of the student is just as important as the cognitive achievement (Stevick 1980, Larsen-Freeman 1986). Like Suggestopedia, TPR, or Total Physical Response, also serves to lower learning apprehensions by creating physical activities that are enjoyable.

This philosophy of lowering apprehension translates easily into computer use. Students who enjoy working with computers are more relaxed. Successful use of the computer is fun, and working with networks is exciting. The following is a note from an American graduate student to her penpal in Mexico:

> Maria, your message came so fast! It's great to see you are into E-Mail like I am. Isn't it so much better to see what goodies are waiting on the computer than do homework? (Student S to Student M. "New Penpal!" 17 March 94.)

Computer networking is more often seen as a toy than work, as was expressed by a Turkish student to the American graduate student:

> Your other question was how come, I find time to participate in the list Well, I joined the list last month. I have a computer in my house, and because my workload requires lots of computer work, I use my brakes to fiddle around. I believe, this is more fun then play silly computer games :-) (Student B. "Hi Sabine." KORAMAN RIDER. 4 April 94.)

Playful activities such as games, comic strips, video tapes, and role playing are popular in ESL classes. Suggestopedia uses fantasy and role play to activate the learner's imagination and reduce learning barriers (Larsen-Freeman 1986). Role plays and fantasy are common activities on networks. Often people adopt child-like behavior with very little encouragement. For example, there is a chat list on America On-Line where

participants simulate imaginary Star Trek battle scenes. On a different e-mail list, an ESL student chat list, CHAT-SL, students pretended to go picnicking together:

> I have an idea about picnic. We had better go to the picnic around the river or lake. Summer is good swimming and fishing season for us. We had better bring some foods, drinks, swimming wear, and a fishing rod. Surely, we will have a good time. But, We have a small problem. Some rivers or lakes are very dangerous. We must go to safety river or lake in the picnic place. Then, we can enjoy our picnic. (Student K. "Picnic." CHAT-SL@LATROBE.EDU. 19 July 94.)

Self-esteem and self-expression are interdependent; who and what a person is may be expressed to others through language. When students use their second language in the early stages of the learning process, their self-esteem is threatened because they cannot adequately express themselves as they would in their first language. When a student learns a foreign language, "the preservation of the self-image is the first law of psychological survival" (Stevick 1980, 7). In order to successfully work with the second language, students should have a degree of self-confidence to protect the ego (Stevick 1980, Krashen 1981, Brown 1987). Methodologies such as Suggestopedia and Community Language Learning are geared to help students feel more at ease in experimenting with a new language, thus protecting students' self-esteem (Stevick 1980, Larsen-Freeman 1986, Brown 1987). Classroom activities are geared so that students do not feel threatened or vulnerable.

Successful use of the computers is empowering. Students feel good when they can manipulate a computer. "A special sense of pride" is created "when students produce...(a) laser-printed report, or collect/disseminate data through the networks" (Shneiderman 1992, 20). The more confident and relaxed students feel, the better they

will learn (Larsen-Freeman 1986). I found this true in my class as well. For example, one of my Russian women students was empowered by the computer, even though her culture did not allow her to recognize that in herself:

> I like our classes very much.They are great!!! I'd like to tell you a little bit about myself.I received education in Applied Mathematics and Mechanics.After graduation I worked as a programmist so I know a little about computers. I used to work with Word, Quattro, and Windows 3.1. Programming is rather a complicated subject for women but interesting anyway. Do you agree with me? (Student L. "My first letter." 30 June 94.)

Sometimes the creation of a new ego, or identity, helps to protect the self-esteem (Brown 1987). Suggestopedia enhances language acquisition by creating a context which causes students to relax and assume a new identity, thus enhancing the feeling of security. Students become more open, lowering inhibitions since language performance becomes that of the "new" person, the alternate identity (Larsen-Freeman 1986).

Networking with the computer also helps students to produce an alternative language ego. Students can be anonymous by hiding behind the computer screen. They don't see the people with whom they correspond, nor does the computer portray students' physical appearances. Students can communicate anonymously, not needing to worry about how their pronunciation or fluency is perceived, concentrating instead on language production and communication. Students, especially "mature adults" can be "highly inhibited," thus impeding abilities that stimulate successful language learning (Brown 1987, 51). The more language teachers can break down inhibitions, the better the chances their students have to learn language.

Pseudonyms can further enhance the protective anonymity of the computer screen.

Pseudonyms are alternate names that users choose when communicating on the network. They range from nicknames such as "Gichin," to strings of numbers such as "X3279410," to names that the user wants to be identified with, such as "Mr. Pumpkin." Pseudonyms ensure anonymity, giving greater security and freedom of expression. For example, one of my Russian students was anxious to use pseudonyms on his e-mail list so that "no one could see" his writing.

Students readily contribute comments in synchronized networked discussion. Those who normally feel uncomfortable about contributing to the class discussion can be empowered by the anonymity of the net. Networking may also be very comforting for ESL students who come from cultures that are normally reticent (Sullivan 1993, McCourtney 1994a). Beauvois (1992) reports that in her foreign language classroom, "(The) typically reticent student i.e. women, minority students, and anxious or shy learners tend to participate in the discussion more readily and more often than in the regular classroom" (456). An Hispanic male student reports on his experience in his English composition class, "Something that the InterChange did do that is sometimes not done in conversation is that it made everyone equal. One comment had no more impact than another because the computer has only one color and the same print" (Faigley 1992, 182). A classroom of native English speakers who participated on a synchronous network reacted positively to the interaction created by synchronous nets. Commenting about his English Composition student, Faigley (1992) reports, "Several of the women agreed that they never would have talked so much if the class had depended exclusively on oral discussion" (181). One of the male students added that "Everyone was allowed

an equal chance to participate and ask questions to anyone in the room" (Faigley 1992, 181). The anonymity of the computer screen provides an opportunity for more equal participation by students in the classroom.

Because of the anonymity of the computer, members of a network are usually not able to distinguish gender, social class, or educational level of other participants on the network. As a result, we should find that all students have an equal opportunity to submit to the networked discourse and to be responded to in an egalitarian manner, without any bias. Slatin (1992) observed of his English composition class that most of the messages were from and to women. However, Herring (1992) maintains that women are marginalized when they correspond on a network, similar to the way they are in traditional discourse (Herring 1992). She ascertains that participants on the network can determine gender by the choice of lexicon, grammar, and stylistic register that a user submits. Thus, participants usually respond to each other much the same way on a network as they would in person.

Herring's studies are based on members who are native speakers of English. Can our international students tell the gender, age, or socioeconomic background of those they correspond with by their use of their L2? It may be difficult for non-native speakers of English to identify or re-create these personal rhetorical devices. There is some proof that ESL students on asynchronous networks often do not know the gender of their partner. For example, Lapp (1992) and Stanislava and Blaber (1994) found that because students were unfamiliar with the "foreign" names, they took several weeks before they discovered the gender of their partners, either from conversational clues or by asking the

teacher. It is possible that the absence of gender cues will encourage shy female students to participate more.

The communicative method gives students a chance to discuss their feelings and views with other students. As a result, when students become emotionally involved in the topic of conversation, language acquisition is promoted over learning and memorization (Stevick 1980). When students discuss topics that are emotionally compelling and interesting to them, they are more likely to integrate and remember the language that they are learning. Honest group discussions are more likely to achieve a greater depth and meaning in conversations.

Students achieve a deep cognitive level in their discussions on networked computers. They tend to be more honest on computer networks than in traditional class settings. Kelm (1992) remarks of his foreign language class, "At times it appeared that some of the comments were so open and candid that even the students were surprised" (446-447). Kelm (1992) claims, "The honesty and openness of our (foreign language) students' interlanguage messages during sessions of Interchange supersede anything I personally have ever witnessed in a language classroom" (442). Spitzer (1989) was equally impressed by the honesty he found in his poetry class, feeling that it gave a new level of understanding of poetry in this context. "I was attracted by . . . the emotional rather than intellectual quality of the discussion" (196). In Beauvois' (1992) foreign language class, one student received special tutoring through synchronized discussion to improve his language studies. The student seemed willing to "explore the subject matter," unlike his prior behavior in the classroom (463). Self-revelation creates an

aura of intimacy over the network and creates emotional bonds among participants. They discuss deeply personal subjects, as seen by this note from an ESL student to an American graduate student:

> Your message touched a nerve, as mine did with you. It is usually difficult for me to talk about this subject. Yet your openness and honesty demand nothing less. (Student A. 7 Apr 94.)

A Turkish male to another American graduate student is able to shed some cultural constraints and speak honestly on the network:

> The funniest thing is I consider myself feminist. I know, a Turkish feminist sounds like an oxymoron but that is true. I believe in equality, but I also belive that we are different. I believe sometimes women are superior to men. (please don't tell this to my friends!!) (Student K. "Hi Sabine." 4 Apr 94.)

Members of FREETALK-L list, an asynchronized chat list made up of mostly Americans, often remind each other how much they enjoy and value the participants on the list. The expressed intimacy of the participants could be witnessed by their topics of conversation. For example, many participants wished a man well whose wife was having surgery. Others were mourning over the death of one of the list members:

> Remember her, and whatever is was she had that you loved so much, try to emulate for yourself . . . maybe that way she can live on in your actions.
> Thinking of you . . . . . .
> XXX, Road Kill on the Information Highway
> (owner-fr BROWNVM. Reply from Charles Hazlett, 7/18/94 to Multiple recipients. 18 July 94.)

Intimate and honest revelations are manifested on synchronous networks as well. Near the end of 1993, the Surgeon General proposed to Congress that research should be done regarding the legalization of marijuana. I noticed a public outcry against the

motion, but suspected that people were displaying a public face rather than being honest. I decided to ask a synchronized discussion group on America OnLine about the issue. Out of a group of about twelve or fifteen participants, all agreed the marijuana should be legalized. The ages and genders ranged from sixteen to 62, and there were about an even number of males and females. I was not surprised about the response because my experience with networking has led me to believe that participants are much more honest than they would be in face-to-face discussions. Anonymity and the relative impermanence of electronic text create a context where a person can interact honestly and openly.

Teachers and students can become emotionally involved with each other on asynchronized networks. During one semester, I was waiting tables at a Thai restaurant to supplement my education expenses. One night, three Thai students from my e-mail class came into the restaurant. I wound up waiting on my students, which was an embarrassing situation for everyone concerned, though I suspected that it was more embarrassing for my Thai students. The following class session, one of my students from the group sent me a message telling me how she felt:

> I was so surprise when I saw you at Thai restaurant. First time I saw you walk directly to me but I can't see you clearly. So I wonder who you are and why you smiled a lot to me. But when you came closer, I could see you clearly. What a big surprise! I can't believe it. Do you know I felt strange when you served food for us because you are my teacher. In my country we admire our teacher and the teacher have never do this with their students. So I feel ashame a little bit. Do you think it's crazy? (Student Y. Fall II, 1994.)

This message shows how honest the Thai student was with me over the network, something that she was unable to be with me in class. It was the first of a series of

honest messages that never occurred face-to-face.

Networking generates honesty in the class because the students have no restriction on what they say. A level of honesty is created not characteristic of other modes of communication in the classroom. Herring (1993) attributes this honesty to lack of conventional etiquette. There is not a set register or code of decorum that would prohibit people from refraining from addressing certain topics. Kelm (1992) feels that the autonomy of the computer screen causes students to feel inhibited and therefore "speak" honestly and openly. Perhaps it is the "shock of being granted total freedom of expression" (qtd. in Faigley: 190) that causes students to reveal the ideas and feelings that they would normally suppress. In any case, it is generally agreed that student communication lies closer to the heart than is generally found in normal classroom discourse.

Unfortunately, there exists a kind of abuse of this type of freedom called flaming. Flaming is easily found in unmoderated e-mail lists.

> this is precisely the danger of fundamentalistic, self-righteous, and politically corect subjugation - attempted censorship! i like to call it the thought police. this is not only "your" list jack! it is a public list, unmoderated and fortunately uncensored! get a real life and come down off your high horse.
> Can something be done about Michael P. Saunder's poor use of our list? It is very offensive to me.. This is the first childish use of this list that I have seen! I do have my children read with me at times. They do not need to see grown people (if he is) communicating in this immature manner!
> I'M ANGRY!
> (owner-penpal UNCCVM. Reply to "Foul Language From Michael" from Terri L. High, 7/16/94 to multiple recipients. 16 July 94.)

Many teachers report that they have never seen an incidence of flaming in their

synchronized or asynchronized networked classrooms. This is probably because classroom contexts are relatively structured and command a certain level of decorum. Ferrera et al. (1991) found no flaming in the English composition class, but that students were very polite. I have yet to discover any flaming on ESL student chat lists or in my classes. However, it is possible that flaming may occur in the classroom and might disrupt or demoralize the classroom community. Flaming can be incredibly easy to do; the computer does not have any paralinguistic cues, such as facial expression or tone of voice, to help to soften what one says or to provide nonverbal feedback when one flames. Students should be made aware how easy it can be to offend someone and taught how to avoid it. Careful monitoring and goal-oriented tasks that keep student writing on task should avoid any possibilities of flaming (Hawisher 1992).

Computer networks bring a new context for learning into the language classroom. It is almost as if the computer lifts students out of the class and places them in a new setting, one which allows them a greater freedom of expression. While protecting their ego, students can experiment with language structures and engage in deep and thoughtful conversations.

CHAPTER 7

Long Range Implications

The introduction of technology to the classroom is creating a social shift away from the traditional classroom setting. The relationship between teachers and students changes. The student is in control of his own learning process, determining the topic of discourse on synchronized networks, the subject of research on the Internet, or the quality of communication with a distant writing partner in a classroom collaborative project. The teacher is subordinated to the learning process, acting as advisor and facilitator of the writing process. In this way, teachers and students are more egalitarian in the learning process; they collaborate together to create a written product.

Students should be given the opportunity for maximum language production. Active participation in classroom activities promotes language acquisition because the student is involved in both language production and perception. In more traditional, teacher-centered classrooms, students tend to engage mostly in reception and less in production. Methodologies such as Communicative Language Teaching and the Audio-Lingual method attempt to draw maximum language output from the student. "Students should be given an opportunity to express their ideas and opinions [in Communicative language teaching]" (Larsen-Freeman 1986, 130). Computer networks offer a convenient transition from the teacher-centered class to a student-centered class. Synchronized computer discussions offer a written alternative to oral discussion in the reading or writing class. Each member of the network can produce as much writing as possible on

his or her own individual terminal while discussing the day's assignment. With synchronized classroom discussions, class time is dedicated to student interaction. There is intensive language reception and production as students read and respond to comments that appear on a rapidly scrolling text. When students are involved in a class collaborative project, classroom time is dedicated to student writing and collaboration. The writing process is intensified by collaboration because it creates a synergy of student thoughts and creativity.

International students participate in class discussion more actively on synchronized networks (Susser 1992) than in traditional classes. In one assessment by Sullivan (1993) of her EFL class, it was found that teachers spoke 81% of the time in a traditional oral classroom. Out of 590 oral sequences, 480 were uttered by the teacher and 110 by students. During one 40-minute synchronized period on the LAN, there were 181 messages, 14 of which were from the instructor, 167 from students. Students contributed 92% of class utterances on the LAN. During the ICONS project, Tammelin's (1994) students exchanged about 200 messages an hour. Kelm (1992) also confirmed increased student participation in his foreign language class. During each 50-minute session, Kelm found that students generated 100-130 written messages. One student in Kelm's class claimed that he participated "100 times more" during the LAN sessions than in the oral class (444). In an English composition class, students wrote more during a synchronized classroom session. During the computerized class, they wrote 46% of the class discourse, against an average 3% of student participation in the oral class (Bernhardt, Wohahn, and Edwards 1990). Students learn to become more interactive in class discussion as they

become accustomed to conversing on the network. Slatin (1992) found that his English composition students initiated 80% of "message traffic" at the beginning of the semester, where 20% of student messages were addressed to the teacher. Later in the semester, students initiated 90% of the messages, 96% of which were addressed to other students. Students from all disciplines benefit from their increased accessibility to classroom participation. In English composition, Slatin (1992) found that teacher participation is markedly reduced to usually less than 10% of classroom discourse.

A truly collaborative classroom involves the decentralization of authority. As in Communicative Language Teaching methodology (Larsen-Freeman 1986, Ellis 1990), the teacher becomes an informant, the person in the room with more education and experience and not the "owner" of the activities that take place in the classroom. That responsibility is shared between the students and the teacher. The teacher is a language resource and counselor in Community Language Learning and Counseling-Learning methodologies, where students are considered as "whole persons" in need of assistance until their fears in producing their L2 are put to rest (Stevick 1980, Larsen-Freeman 1986).

Student-centered classrooms take away some of the authority that teachers enjoy in a teacher-centered class. The teacher cannot stand at the front of the class and call on students to contribute to classroom discussion or steer the topic in a predetermined direction. All utterances in a synchronized discussion appear equal on the computer screen, including the teacher's. Students read and submit messages freely, directing the conversation by using feedback and tag questions. Aside from proposing the first

question of the discussion and structuring homework assignments to enhance the classroom discourse, the teacher has no more control of class discussion than the students do. When teachers learn to relinquish control of the class to the students and to the learning process, they create a context constructive to foreign language learning because language "acquisition is facilitated if the learner is able to nominate and control the topic of a conversation" (Ellis 1990, 124).

Just as it is impossible for the teacher to dominate the floor, it is likewise equally difficult for any one student to dominate the class. Nothing guarantees that comments will be read or answered (Kelm 1992; Eldred 1989). What differs between networked and oral conversation is that no one person can control the flow of discussion. The nature of networking frees students to contribute to class discussion during synchronized networked sessions at any time they choose, allowing an unprecedented access to the floor (Slatin 1992).

In my experience as a language student, I participated in a long-distance synchronously networked Spanish class. I was trying to achieve a long-standing goal of learning a third language. There were two other students, a seventeen-year-old high school student and a doctor who needed to learn the language in order to work in South America. Our teacher was trying the synchronized networked format for the first time. We met once a week for one hour. We all logged onto our computers at the same time, accessed a predetermined location in our Internet accounts and effectively "met" each other there. At first the project was exciting to me; I brought my dictionary with me to every class, set it on my lap, and happily typed away, responding to every question the

teacher and other students posed. I would quickly look up words that I didn't understand, as they flashed up on the screen or saved the transcript to review after class.

While I planned to review the transcripts after class in search of new language constructions and to look up words missed during the session, I quickly became discouraged because class transcripts were so short. We did not generate as many utterances as other teachers suggested we would. How could this have happened? Perhaps it was due to the fact that the teacher tried to keep the classroom teacher-centered. She would direct questions to each of us, and then we would patiently (usually) wait for each student to laboriously type in the response. I noticed the huge amount of time that took. So I began to respond to her prompts by answering her questions and then adding a tag question to the next student. However, the conversation quickly deteriorated, partly because the other students took so long to type in their responses, partly because the teacher would jump in and take control of the conversation again. Perhaps this class would have worked better if the teacher had allowed it to become student-centered. However, she didn't, and I dropped the class at mid-term.

Beauvois' (1992) synchronized foreign language classroom differed from my experience. Students were in control of the topic and turn taking of the class discussion. Students readily contributed to the discussion, sending a constant stream of comments and creating, in effect, a very rapid conversational pace. Even though the stream of student comments on the screen was extremely fast, the quick pace usually did not hinder the slower students from fully participating. She found that because student responses did not flash up on the screen until students sent them, the students had ample time to review

their messages or quickly look up a word. With smaller groups, however, it is usually the faster typists who dominate the discussion, as I found with my experience in the Spanish class. Because that class was teacher-centered, the teachers expected only one response to her questions. My quick typing negated any attempts of the other students to participate.

Asynchronized classes are student-centered as well. If students are engaged in research or classroom collaborative projects, work is centered upon the student and the learning process. The teacher acts as advisor in project work, language construction, and computer-oriented questions. Selfe and Wahlstrom (1986) found that "both teachers and students indicated that the traditional boundaries existing between the two groups began to break down when the individuals cram together to compose in a computer lab or workplace" (290). Relationships among members of the class change. Collaboration creates an interdepdency among teachers, students, and the material. "We are all there to construct" (Slatin 1992, 34). My students ask me for assistance when they try to find resources on the Internet. Sometimes, when I do not know where to find a given resource, we work together to locate it. It can be uncomfortable for the teacher who is accustomed to readily giving answers to student questions.

The loss of the traditional classroom structure may be threatening to teachers who are more comfortable with the teacher-centered or teacher-controlled classroom. As one male teacher reported on TESLCA-L:

> For me, I think the hardest thing to get used to was the loss of control I frequently felt in the computer classroom. Students paid too much attention to the screen; students knew much more than I. Eventually, I came to see both as positive things: students are engaged in language

> production and I could use the students' knowledge to encourage a peer-support atmosphere in class. (Tim Rushing. "Beginning teachers." TESLCA-L: Computer Assisted Language Learning branch of TESL-L. 14 Jun 1994.)

Just as teachers may feel uncomfortable with student-controlled classes, students may also feel lost or uneasy by the lack of traditional student/teacher roles. A Japanese student was enrolled in my asynchronized networked writing class in the fall of 1994. The students were usually given their day's assignment on the computer terminal. Each student had to log onto his e-mail account and access my message to find out what the day's assignment was. My Japanese student would always come into class and patiently wait for me to verbally coach him in each step as he logged on. I would then show him the message that contained his assignment. He would access the message and then wait for me to verbally instruct him in what to do instead of reading the assignment himself. If I was busy with other students, he would wait quietly until I discovered that he was waiting for his next verbal instruction. He eventually dropped the course.

Computer networking provides students with a forum in which they control the topic and turn taking of conversation. Teachers act as facilitators of the writing process. They monitor student writing from behind the students as they work, providing help and advice on an individual basis. The shift in power in the classroom is productive and necessary in a networked environment, though it may feel threatening to more traditional teachers and students.

CHAPTER 8

Conclusion

The 1994 TESOL Convention in Baltimore had its full share of papers and demonstrations concerning the use of computers and technology in the ESL classroom. Talks centered mostly around different projects that teachers use or what new technologies are available for those who work at schools that can afford to upgrade. Very few people discussed the impact that technology has had on our students--is it worth it? How do computers, and computer networks in particular, affect second language acquisition?

There has been some preliminary written research in the ESL field concerning the benefits and effects of computer networks. More has been done in the fields of foreign language teaching and English composition. Based on existing written research and results found from my own ESL networked classes, I have found that computer networks are naturally conducive to language study. They bring a context into the classroom that we have been trying to create with different methodologies, such as Community Language Learning, Suggestopedia, Total Physical Response, and Communicative Language Learning. They create an atmosphere where the student can relax and converse freely with others in English, eliminating fears that students will be judged by their pronunciation or appearances. Students feel comfortable conversing on computers. They learn to reach deep inside themselves and discover who they are in their second language. Networks are student-centered. Students generate maximum language

production in the class, while teachers are able to leave the front of the class and tend to each student's individual writing needs. The new classroom organization causes students to become more self-reliant while teachers act as supporter and advisor to the writing process. As a result, students are empowered and their self-esteem is raised.

Networks enhance language teaching and learning in ways unseen before in the traditional classroom. The Internet is a tremendous resource for language practice by connecting people from around the world onto a single forum. It brings the world into the classroom and take the student's mind out into the world. Computer telecommunications is a huge developed network. The following are a few facts that demonstrate the size and complexity of the Internet, according to Gibbs and Smith (1993):

- The Internet connects over 6,000 networks.
- More than 1,000 computers are added to the Internet a day.
- The amount of data crossing the Internet grows by 10 percent per month, or 214 percent per annum.
- About 10 million people use the Internet a day to directly send and receive e-mail, 25 million indirectly.

Educational systems are recognizing the need to teach our students how to use computers effectively so that they can be productive citizens in today's world. As a result, educational institutions have initiated mandates to ensure that students are computer proficient. Tidewater Community College has launched an initiative starting in 1996 that will require all students to be able to demonstrate computer proficiency in

order to graduate. The current Presidential administration is committed to developing technology in the public schools, which has been manifested by the development and use of FrEdMail that funds the development of computer networks in the public schools. Technology promises to become more and more widespread as we move into the twenty-first century. We must make sure that technology benefits our students as its use in the classroom becomes integral in the language learning experience.

Works Cited

Barker, Thomas T., and John Elder. 1990. "Computers and the Social Contexts of Writing." Computers and Community: Teaching Composition in the Twenty-First Century. Ed. Carolyn Handa. Portsmouth, NH: Boynton/Cook-Heinemann. 89-104.

Beauvois, Margaret Healy. 1992. "Computer-Assisted Classroom Discussion in the Foreign Languge Classroom: Conversation in Slow Motion." Foreign Language Annals 25.5 : 455-463.

Bernhardt, Stephan A., Patricia G. Wohahn, and Penny R. Edwards. July 1990. "Teaching College Compositions with Computers: A Timed Observation Study." Written Communication 7.3 : 342-374.

Brown, Douglas H. 1987. Principles of Language Learning and Teaching, 2nd ed. Englewood Cliffs, N.J.: Prentice Hall Regents.

Cononelos, Terri, and Maurizio Olivia. 6 Dec 1993. "File: 'NETNEWS USENET'". TESL-L@CUNYVM.BITNET.

Corio, Ronald. 15 Oct. 1994a. "Peer Review in the Computer-Connected Classroom." WATESOL Convention. Washington D.C.

---. 9 Mar. 1994b. "Electronic Bulletin Boards: The Computer-Connected Reading Class." The Twenty-Eighth Annual Convention & Exposition of TESOL. Baltimore.

Corio, Ronald, and Christine Meloni. 15 Oct. 1994. "Authentic Writing on the Internet:

Linking Three Universities Electronically." WATESOL Convention. Washington D.C.

Curtis, Marcia, and Elizabeth Kelm. 1992. "The Virtual Context: Ethnography in the Computer-Equipped Writing Classroom." Re-Imagining Computers and Composition: Teaching and Research in the Virtual Age. Ed. Gail Hawisher and Paul LeBlanc. Portsmouth, NH: Heinemann. 155-172.

Cyganowski, Carol Klimick. 1990. "The Computer Classroom and Collaborative Learning: The Impact on Student Writers." Computers and Community: Teaching Composition in the Twenty-First Century. Ed. Carolyn Handa. Portsmouth, NH: Boynton/Cook-Heinemann. 68-103.

Eldred, Janet M. 1989. "Computers, Composition Pedagogy, and the Social View." Critical Perspectives on Computers and Composition Instruction. Ed. Gail E. Hawisher and Cynthia L Selfe. New York: Columbia Teachers Coll. 201-218.

Ellis, Rod. 1990. Instructed Second Language Acquisition. Cambridge, MA: Blackwell.

Esling, John H. 1991. "Researching the Effects of Networking, Evaluating the Spoken and Written Discourse Generated by Working with CALL." Computer Assisted Language Learning and Testing, Research Issues and Practice, Ed. Patricia Dunkel. New York: Newbury. 111-131.

Faigley, Lester. 1992. Fragments of Rationality: Postmodernity and the Subject of Composition. Pittsburgh: U of Pittsburgh P.

Ferrera, Kathleen, Hans Brunner, and Greg Whittemore. Jan. 1991. "Interactive Written Discourse as an Emergent Register." Written Communication 8.1 : 8-34.

Flores, Mary J. 1990. "Computer Conferencing: Composing a Feminist Community of Writers." Computers and Community: Teaching Composition in the Twenty-First Century. Ed. Carolyn Handa. Portsmouth, NH: Boynton/Cook-Heinemann. 106-133.

Garrett, Nina. 1991. "Technology in the Service of Language Learning: Trends and Issues." Modern Language Journal 75.1 : 74-101.

Gerrard, Lisa. 1989. "Computers and Basic Writers: A Critical View." Critical Perspectives on Computers and Composition Instruction. Ed. Gail E. Hawisher and Cynthia L Selfe. New York: Columbia Teachers Coll. 94-108.

Gibbs, Mark, and Richard Smith. 1993. Navigating the Internet. Indianapolis: SAMS, Prentice Computer.

Goodwin, Alice Ann, et al. Autumn 1993. "Instructional Delivery via Electronic Mail." TESOL Journal, 3.1 : 24-27.

Handa, Carolyn. 1990a. Introduction. Computers and Community: Teaching Composition in the Twenty-First Century. Ed. Carolyn Handa. Portsmouth, NH: Boynton/Cook-Heinemann.

---. 1990b. "Politics, Ideology, and the Strange, Slow Death of the Isolated Composer or Why We Need Community in the Writing Classroom." Computers and Community: Teaching Composition in the Twenty-First Century. Ed. Carolyn Handa. Portsmouth, NH: Boynton/Cook-Heinemann. 160-184.

Hartman, Karen, et al. Jan. 1991. "Patterns of Social Interaction and Learning to Write: Some Effects of Network Technologies." Written Communication. 8.1 :

79-113.

Hawisher, Gail E. 1992. "Electronic Meetings of the Minds: Research, Electronic Conferences, and Composition Studies." Re-Imagining Computers and Composition: Teaching and Research in the Virtual Age. Ed. Gail Hawisher and Paul LeBlanc. Portsmouth, NH: Heinemann. 81-101.

Herring, Susan C. Nov. 22, 1993. "Gender and Democracy in Computer-Mediated Communication." EJC/REC 3.2.

Herrmann, Andrea. 1989. "Computers in Public Schools: Are We Being Realistic?" Critical Perspectives on Computers and Composition Instruction. Ed. Gail E. Hawisher and Cynthia L Selfe. New York: Columbia Teachers Coll. 109-125.

Hiltz, Starr Roxanne. 1992. "The Virtual Classroom: Software for Collaborative Learning." Sociomedia: Multimedia, Hypermedia, and the Social Construction of -Knowledge. Ed. Edward Barrett. Cambridge, MA: MIT P. 347-368.

Johnson, Donna M. 1991. "Second Language and Content Learning with Computers, Research in the Role of Social Factors." Computer-Assisted Language Learning and Testing, Research Issues and Practice. Ed. Patricia Dunkel. New York: Newbury. 61-83.

Johnstone, Sally M., Robin E. Zuniga, and Richard A. Markwood. 1994. "Student and Faculty Survey Reponses and Analysis." New Pathways to a Degree: Technology Opens the College. WICHE. 1-22.

Kelm, Orlando R. 1992. "The Use of Synchronous Computer Networks in Second Language Instruction: A Preliminary Report." Foreign Language Annals 25.5

: 441-454.

Krashen, Stephen D. 1981. Second Language Acquisition and Second Language Learning. New York: Pergamon.

Langston, M. Diane, and Trent W. Batson. 1990. "The Social Shifts Invited by Working Collaborative on Computer Networks: The ENFI Project."Computers and Community: Teaching Composition in the Twenty-First Century. Ed. Carolyn Handa. Portsmouth, NH: Boynton/Cook-Heinemann. 140-159.

Lapp, Susanne I. 9 Mar. 1994. "Cross-Cultural Communication Through Electronic Mail." The Twenty-Eighth Annual Convention & Exposition of TESOL. Baltimore.

LaReau, Paul, and Edward Vockell. 1989. The Computer in the Foreign Language Curriculum. Santa Cruz, CA: Mitchell.

Larsen-Freeman, Diane. 1986. Techniques and Principles in Langauge Teaching. Oxford: Oxford UP.

McCourtney, Sandra. 9 Mar. 1994a. "Local Area Networks Versus Open-Ended Coursework." The Twenty-Eighth Annual Convention & Exposition of TESOL. Baltimore.

---. 11 Mar. 1994b. "E-mail for Language Learning: K-12 Electronic Projects." The Twenty-Eighth Annual Convention & Exposition of TESOL. Baltimore.

Miller, Margaret A. 25 Feb. 1994. "The New Teaching Technologies and the Professoriate." Commonwealth Center for Cultural and Literacy Change.

Moran, Charles. 1992. "Computers and the Writing Classroom: A Look to the Future."

Re-Imaging Computers and Composition: Teaching and Research in the Virtual Age. Ed. Gail Hawisher and Paul LeBlanc. Portsmouth: Heineman. 7-23.

Murison-Bowie, Simon. Autumn 1993. "TESOL Technology: Imposition or Opportunity?" TESOL Journal 3.1 : 6-8.

Murray, Denise E. Jan. 1991. "The Composition Process for Computer Conversation." Written Communcation 8.1 : 35-55.

Murray, Janet. H., et al. 1989. "The Athena Language Learning Project: Design Issues for the Next Generation of Computer-Based Language-Learning Tools." Modern Technology in Foreign Language Education: Application and Projects. Ed. Wm. Flint. Lincolnwood: National Textbook. 97-118.

Otto, Sue E.K. 1989. "The Language Laboratory in the Computer Age." Modern Technology in Foreign Language Education: Application and Projects. Ed. Wm. Flint. Lincolnwood: National Textbook. 13-41.

Pennington, Martha C. 1993. "Exploring the Potential of Word Processing for Non-native Writers." Computers and the Humanties 27.3 : 149-163.

Piper, Alison. 1986. "Conversation and the Computer: A Study of the Conversational Spin-Off Generated Among Learners of English as a Foreign Language Working in Groups." System 14.2 : 187-198.

Pratt, Ellen, and Nancy Sullivan. 11 Mar 1992. "Comparison of ESL Written in Networked and Traditional Classrooms." The Twenty-Eighth Annual Convention & Exposition of TESOL. Baltimore.

Pusack, James P., and Sue K. Otto. 1990. "Priority Instruction, Applying Instructional

Technologies." Foreign Langauge Annals 23.5 : 409-417.

Roswell, Barbara. 5 May 1994. "Integrating Computers into Writing Instruction." Fifteenth Annual Spring Conference on the Teaching of Writing. Old Dominion U.

Rushing, Tim. 14 Jun 1994. "Beginning teachers." TESLCA-L: Computer Assisted Language Learning branch of TESL-L.

Sayers, Dennis. Autumn 1993. "Distance Team Teaching and Computer Learning Networks." TESOL Journal 3.1 : 19-23.

Schroder, Eric James, and John Boe. 1990. "Minimalism, Populism, and Attitude. Transformation: Approaches to Teaching Writing in Computer Classrooms." Computers and Community: Teaching Composition in the Twenty-First Century. Ed. Carolyn Handa. Portsmouth: Boynton/Cook-Heinemann. 29-46.

Selfe, Cynthia L. 1992. "Preparing English Teachers for the Virtual Age: The Case for Technology Critics." Re-Imagining Computers and Composition: Teaching and Research in the Virtual Age. Ed. Gail Hawisher and Paul LeBlanc. Portsmouth: Heinemann. 24-42.

Selfe, C.L., and B.J. Wahlstrom. 1986. "An Emerging Rhetoric of Collaboration: Computers, Collaboration, and the Composing Process." Collegiate Microcomputer 4 : 289-295.

Shaver, James P. Jan. 1991. "Reliability and Validity of Measures of Attitues Toward Writing and Toward Writing with the Computer." Written Communication. 8.1 : 509-532.

Shneiderman, Ben. 1992. "Education by Engagement and Construction: A Strategic Education Initiative for a Multimedia Renewal of American Education." Sociomedia: Multimedia, Hypermedia, and the Social Construction of Knowledge. Ed. Edward Barrett. Cambridge, MA: MIT P. 13-26.

Skubikowski, Kathleen, and John Elder. 1990. "Computers and Social Contexts of Writing." Computers and Community: Teaching Composition in the Twenty-First Century. Ed. Carolyn Handa. Portsmouth: Boynton/Cook-Heinemann. 89-104.

Slatin, John M. 1992. "Is There a Class in This Text? Creating Knowledge in the Electronic Classroom." Sociomedia: Multimedia, Hypermedia, and the Social Construction of Knowledge. Ed. Edward Barrett. Cambridge: MIT P. 27-51.

Snoke, Judith H. 15 Oct. 1994. "Electronic Networking in ESL." WATESOL Convention, Washington D.C.

Spitzer, Michael. 1990. "Local and Global Networking: Implications for the Future." Computers and Writing: Theory, Research and Practice. Ed. D. Holstein. NewYork: MLA. 58-70.

---. 1989. "Computer Conferencing: An Emerging Technology." Critical Perspectives on Computers and Composition Instruction. Ed. Gail E. Hawisher and Cynthia L. Selfe. New York: Columbia Teachers Coll. 187-200.

Stanislava, Kasíková, and Marian E. Blaber. 9 Mar. 1994. "Networking Classrooms: Using E-mail for International Exchanges." The Twenty-Eighth Annual Convention & Exposition of TESOL. Baltimore.

Stanzler, Jeffrey. 27 May 1994. "Say Hi to UCF." Ednet@nic.umass.edu.

Stevick, Earl W. 1980. A Way and Ways. Rowley: Newbury.

Sullivan, Nancy. Autumn 1993. "Teaching Writing on a Computer Network." TESOL Journal 3.1 : 34-35.

Susser, Bernard. 1992. "Networks and Project Work: Alternative Pedagogies for Writing with Computers." Computers and Composition, 10.3 : 63-89.

Susser, Bernard, et al. 1992. Computers and EFL Writing: Basic Principles and Student Reactions. Kyoto: Doshisha Women's Junior College, Institute of Culture Studies. 9 : 27-48.

Tammelin, Maija. 10 March 1994. Personal interview.

Taylor, Paul. 1992. "Social Epistemic Rhetoric and Chaotic Discourse." Re-Imagining Computers and Composition: Teaching and Research in the Virtual Age. Ed. Gail Hawisher and Paul LeBlanc. Portsmouth: Heinemann. 131-148.

Tella, Seppo. 1991. Introducing International Communications Networks and Electronic Mail Into Foreign Language Classrooms: A Case Study in Finnish Senior Secondary Schools. Helsinki: Department of Teacher Education, U of Helsinki.

Tillyer, David. 17 May 1994. E-mail interview. DXTBM@CUNYVM.

Wilkins, Harriot. Jan. 1991. "Computer Talk, Long-Distance Conversations by Computer." Written Communication 8.1 : 56-78.

Williams, Noel. 1991. "Networks and Collaboration." The Computer, the Writer and the Learner. Ed. Noel Williams. Berlin: Springler-Verlag. 173-187.

Young, Richard. March 1988. "Computer-Assisted Language Learning Conversations: Negotiating an Outcome." CALICO Journal 5.3 : 65-83.

Glossary

Address Book

An address book saves names and e-mail addresses that the user inputs. Whenever mail is sent, a keyword or nickname is entered and the computer searches its list of nicknames. It then sends the mail out to the e-mail address(es) that are listed under the nickname. In some software programs, this is also called a **Names file.**

BBS Bulletin Board System

A Bulletin Board System operates just like a bulletin board and is accessible through the LAN. Users can access the BBS through the mainframe, locate a list of topics covered in the BBS, and read only the texts that they choose to read. BBS's do not fill up a user's mailbox and so do not require maintenance by the user.

BITNET

Bitnet is similar to the Internet, except that it is composed of educational institutions around the world.

Browsing

Browsing is the art of searching purposefully or wandering aimlessly through the Internet for resources.

Chatting

Chatting refers to the kind of discussion that occurs on synchronized discussions.

Flaming

Flaming refers to rude or offensive writing on the network.

Gateway

A gateway is a computer used to connet two other networks or computers that operate with different protocols. University mainframes often act as gateways to the Internet (Gibbs and Smith 1993, 7).

Header

The header appears at the top of an e-mail document after it has been sent. It lists the addresses of the sender and receiver, the date and time that the mail was sent, and the subject of the letter.

Icon driven software

All telecommunications systems require a software program to run the system. Icon driven software has pictures and key words. The user takes a mouse and points to either the picture or the key word to send a command to the computer.

internet

"Spelled with a small *i*, internet refers to a collection of interconnected networks" (Gibbs and Smith 1993, 291).

Internet

The Internet is "a web of different, intercommunicating networks funded by both commercial and government organizations" (Gibbs and Smith 1993, 8). The largest networked web in the world, the Internet links LAN's up all over the world for easy and instantaneous communications. All of the networks on the

Internet use the same telecommunications protocol, TCP/IP (Gibbs and Smith 1993, 292).

Keywords

Keywords are specific words used by find certain resources. For example, the newsgroup on Korean culture on NETNEWS might be located by the keyword *Korea.*

LAN Local Area Network

"A local network is created when users in an area, e.g. school, campus, office building, are connected to a central system in order to share computer hardware and software and to be able to communicate with each other. Access to the local network is gained through terminals that are connected to the central computer system" (Corio 1994).

Local Newsgroups

"as opposed to world-wide, can only be read by users of one computer system. e.g. a university. Local newsgroups may be further restricted to a group of users within one system. e.g. members of a class. Thus a class electronic bulletin board. (EBB)" (Corio 1994).

Logon

To log on means to enter into your e-mail account.

Mainframe

A mainframe is a central computer through which communications are sent and received.

Newsgroups

"are a collection of discussions that fall under a broad category" and can range on a broad range of topics, from bonsai to Zimbabwe. The quality of newsgroups can range from superb to worthless. "Subscribers to a newsgroup can read articles posted by other subscribers from around the world, respond to articles with a follow-up article or via e-mail to the author, and post their own articles" (Corio 1994).

Snail Mail

This refers to the traditional type of mail that goes through the post office. "Snail" describes the difference in speed of delivery between traditional mail and e-mail take to deliver.

Surfing

Browsing without any particular goal in mind.

SYSOP

System Operator. This is a person or entity that monitors the activities of an e-mail or BBS project. He or she maintains the integrity of an e-mail project, either deleting unwanted remarks, or sending notes of reprimand to the initiator.

USENET

USENET is "like a giant bulletin board system" (Gibbs and Smith 1993, 194) that contains thousands of newsgroups arranged by topic. It is currently being used "by hundreds of thousands of people internationally every day" (Gibbs and Smith

1993, 194). Articles are posted to the newsgroups by other USENET participants from around the world and can be accessed through a "well-defined hierarchy of subjects" (Gibbs and Smith 1993, 194).

WAN Wide Area Network

Wide area network refers to the internet; networking that occurs between two or more gateways, or mainframes.