1-3-1999

North and South Meet through Computer Collaboration: A Learning Experience for Preservice Teachers

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Literacy teachers often are drawn to the information highway because of its potential in encouraging real world literate behavior, characterized by Heath (1990) as collaborative talk, problem solving, and story telling. Such was our motivation in launching two cross-college computer collaborations between preservice teacher-education classes at two state universities, one located in the North (College-N), the other in the South (College-S). For two consecutive years we extended students' learning through discussions about writing theory in the context of their English Education courses.

For Mary Ann, it was a first-time introduction to using e-mail in her classes. At her small-town university of 5,000 students, technology had not been a priority. Though Marion had experienced electronic collaboration in distance education classes at another college, she too was now located at a college of similar size and mission to Mary Ann's. English majors in particular were still new to electronic mail. When a national English conference brought us together, we readily seized the opportunity to link our students from the North and South. Furthermore, we recognized along with Cummins and Sayers (1995) the benefits of being open to diverse cultures. We ourselves had experienced the diversity of these regions: in our formative years, Mary Ann had lived in the North and Marion in the South; yet in our professional lives we had changed places. Thus began our two-year collaboration in initiating our students to the information highway and extending their learning through interactions with diverse students.

Though naive in technological expertise, we entered the project aware of the complicating influences of technology noted by Barton (1994) and Selfe and Hilligoss (1994), and we agreed with Hawisher and Selfe (1992) that "it takes teachers who are educated both as technology critics and technology users to accomplish productive change" (p.4). Indeed, contradictory conclusions about the use of computers in the classroom are common. Some researchers report interactions through computer collaboration projects that lead to caring relationships (Fey, 1994a; Fey & Widrick, 1995; Flores, 1990; Handa, 1990) and to positive learning (Cummins & Sayers, 1995; Fey 1994b, 1998; Myers, 1994; Tornow, 1997). Other studies (Fey, 1997; Graves & Haller, 1994; LeBlanc, 1994; Takayoshi, 1993) report the tension found in this space, particularly in women's experience. In studying real-time computer collaboration in the writing classroom, Day, Crump, and Ricky (1996) describe electronic spaces as "wonderful" and "horrific."

In initiating the project, we wondered whether the "horrific" would outweigh the "wonderful" as we set forth the following goals for our preservice teachers:

- to increase diversity by extending the borders of the classroom through computer collaboration,
- to develop expertise in the teaching of writing through constructing knowledge with peers from another university,
- to explore computer collaboration as a possible tool for the English classroom.

These goals shaped our research questions when the projects were completed and, as teacher researchers, we began to evaluate the collaborations. We decided to look more carefully at the students' experiences of interacting with students from a different region, the types of pedagogical knowledge constructed with these different partners, and the ways computers facilitated or hindered the collaboration.

In telling our story of North and South meeting through computer collaboration, we first describe the contexts for collaboration in our respective colleges and then the method for our reflection on the project. We then present our findings by illustrating the three themes that emerged from the study: experiencing diversity, constructing knowledge as future teachers of English, and experiencing technical problems. We conclude with a reflection on students' learning through these collaborations and suggestions for future investigations of similar projects.

The Context for Collaboration

Though the future teachers who participated in the collaborations hailed from contrasting areas of the country-the deep South and the far North, in some ways the educational environments were similar. Both institutions, reputed to have strong teacher education programs, were part of a state university system and were attended by approximately 5000 traditional age students who, in most cases, lived on or near the campus while at college. Students came from large and small towns throughout the state. Students at Marion's competitive Northern college were predominantly White, middle-class students, though some came from working-class families. Marion's two classes had only two minority students, typical for teacher-education classes at the College. Of the 60 students in the two classes from College-N, only 16 were male. Students in Mary Ann's institution included a small population of minority and international students, but the students enrolled in English Education classes were predominantly White females. Of the 27 students involved in the two projects at College-S, 6 were male and 1 female was a minority student.

Despite the similarities of the two institutions, academic calendars of the colleges differed, with Marion's college on the semester system and Mary Ann's on the quarter system. To accommodate the different calendars, both six-week computer collaborations took place near the end of successive academic years. Marion's students-29 the first year and 31 the second year-were enrolled in two 3-credit English Education methods courses related to the teaching of writing and literature. Mary Ann's students-14 the first year and 13 the second year-were enrolled in a Composition and Theory class. Because of the variability in the size of classes, in most cases two of Marion's students wrote to one of Mary Ann's. The first year students wrote to

individual partners; the second year, to a small group consisting of four of Marion's students and two of Mary Ann's.

For the first collaboration Marion's students launched the discussion by responding to an article about response styles for evaluating student writing. Mary Ann instructed her students with the following assignment:

You will be corresponding via Internet with one or two preservice teachers at College-N. They too are studying composition theory. In their first letter, they will introduce themselves and talk about their class and their assigned readings. After reading your mail, respond by introducing yourself, acknowledging, in some way, their comments, and talking about your readings and/or class discussion/activities.

The second year we assigned common readings relating to grammar, language, and response to writing so that students could discuss and react to various theories and research in the teaching of writing.

At Marion's college only a small minority of students owned their computers, and dormitories at that time were not wired for the Internet. Many of the students in her classes were unaccustomed to e-mail. Mary Ann's students and college were taking their first tentative steps into cyberspace as well. As the collaborations unfolded, we soon discovered that though the almost instant computer communication appeared easy, much could and did happen to intervene in our plans. Despite numerous computer glitches, however, we completed both projects. We were sufficiently enthusiastic about our work when the second collaboration ended that we formalized our analysis of the project in order to share with others the significance of our collaborative efforts. The following section describes the method of that analysis.

Method

Data for the telling of our story of collaboration derive from our own experience as teacher researchers, from study of the computer transcripts, and from questionnaires completed by students. As teacher researchers, we had numerous occasions to become familiar with the content of the collaborations. Both of us asked students to bring printouts of their messages and those of their partners to class in order to share highlights with all of us. Marion also had a computer transcript of her students' messages during the first collaboration and of all the small groups (including messages from both campuses) during the second collaboration. When the projects were in progress, we consulted by e-mail with each other. Though much of the conversation was taken up with trouble shooting the many problems that occurred because of imperfect computer connections, we also reflected informally on the substance and organization of the collaboration. For example, after evaluating that first collaboration, we decided to include common readings in the next project in order to encourage more interactions about course content. Also, under Mary Ann's guidance, we constructed a questionnaire for students to complete about their impressions of the experience (see appendix).

When the second collaboration ended the following year, we examined the work of our own students and their responses to the questionnaire in order to structure a presentation for a

conference of the National Council of Teachers of English. We exchanged scripts (by e-mail), all the while becoming more familiar with the data. For the research article, we reviewed the data still once more, deriving research questions from our stated goals for the collaborations. From these questions emerged three themes: diversity as experienced by the participants, issues in English Education, and computer confusions. Further analysis provided subthemes that guided the coding of data. Marion looked first at the diversity issue and identified subthemes in terms of geography of place, the life of the area, and characteristics of the people including their language. Mary Ann developed subthemes for issues in English Education: summarizing professional journal articles, talking about class experiences, and generalizing and drawing conclusions. We both derived the subthemes that led to the computer "story." To assure reliability, we each studied the data in terms of these categories. We then wrote our agreed-upon sections of the paper and shared our sections with the other author who responded in light of her own coding.

E-mail was the life-line that kept us in touch during planning and implementing the collaborations, evaluating and interpreting the data, and finally writing the joint paper. Though e-mail was the life-line, the collaboration prospered and indeed flourished because of several mutual circumstances-our shared interest in English Education and computer collaboration, our similar work habits (a conscientious attitude toward deadlines and a commitment to the task at hand despite the fact that we each experienced the great loss of our mothers during this time period), and finally, our unique experiences with both cultures in the study.

This latter interest in the cultures of the North and South emerged as a topic of conversation in our students' e-mail messages as well. For most of our students, this was the first time to communicate directly with students from these areas of the country, since, as middle-and working-class students, most of them did not represent the well-traveled students who often attend private colleges. Thus, they had a genuine interest in understanding the differences of these regions. Our story proceeds with a look at their interests in these regional differences that influence the diverse cultures of the North and South.

Experiencing Diversity

Though collaborating through the new medium of computer communication drew students into the project, meeting diverse students from a distant part of the country also peeked their interest. In authentic, honest voices and in informal and breezy tones, these future teachers questioned each other about the region's geography and weather, the life of its residents, and, most importantly, the people themselves. Even when we expected academic responses, we found personal responses interspersed throughout the transcripts.

Most of the students in College-N had lived in their state all of their lives, and a number of them recognized the beauty of the region. Debra (students' names have been changed to preserve anonymity) wrote:

I live next to two lakes. It really is a beautiful place to live. Last week I saw three bald eagles. One of these lakes used to be the sight of the only nesting pair of bald eagles in our state.

Ben, who lived six hours away, pointed to "beautiful qualities" of the landscape but added, "It is cold though-very cold. Right now it is thirty degrees--and I am waiting for spring!" And thus began a barrage of comments about the weather. Diane set College-S students straight:

I just want to let all of you down South know that I am envious of the weather that you must be having. Our area has approximately seven months of winter, one month of spring, and two months of summer-the rest is just crap (that's the pessimist's view half way through April with a forecast for snow). Enjoy the sun.

Ellen was more descriptive: "Let me just start by reiterating how cold it is here. My hands are numb thus the horrible misspellings! It is April.. shouldn't it at least break 30 degrees????? " Tina, who grew up in this region, was accustomed to the weather and felt "right at home" in the College's small town.

Mary Ann's students in the South sympathized with College-N students' impatience with the weather and then described their quite different circumstances. Meg answered, " I can't believe it's so cold up there. For the past two weeks it's been close to 80 everyday. This weekend the temperature was almost 90. I love the summer, but here it usually gets too hot." Billy, who had lived in a nearby state, said he now had to "toil...[his] days away in the hot...sun." Most students seemed to agree with Theresa, who explained, "I love..[my state]." She, like most of the students, had lived in this state her whole life and seemed to appreciate the loveliness of the area, described by Sara as "full of trees, flowers. and restored ante-bellum houses." Students envied Jack when he wrote, "I'll be at the beach this weekend again."

Conversations about the diverse weather conditions led to the more significant question of the culture of these two diverse areas. What was life like and just who were these people who seemed, according to Stacy, "to live far away from...[each other's] own isolated world"? She went on to inquire:

Do you find any differences in language? People always talk about accents. Does it make any difference in what you write and read, or is it close enough to the way we write and speak in the North? Do we sound weird to you?

Though this shy young woman had traveled to England, the Southern part of her own country seemed foreign. She learned that this Southern college was the "backbone" of the town, that its people were "relatively laid back," and that these future teachers were concerned about how they would be perceived in the North. For example, Amy, a student from College-S, seemed hesitant: "When my professor told us we would be corresponding with y'all (I had to throw that in), I was really scared because people from the South aren't looked very highly upon."

The students from College-S joked about the Southern dialect and made fun of Southern stereotypes. They seemed to be making fun before someone else could do so:

Theresa: Hey, what are y'all doing? Ha Ha. Is that what you expected? I am always interested in the stigmas that are placed on Southerners. Just to clarify a few, we all wear shoes, we all have

teeth, we don't all live in trailers, and most of us can read. I am curious about whether any of you have preconceived notions about us, and if so, what they are. Talk to you guys later.

Billy: I do go to [College-S] but I am not a hick. It seems we have a surplus of hicks here but do not worry about me. I am from...[another Southern state].

Penny: I am sure y'all up north love to make fun of Southerners. I guess we do have a lifestyle all of our own.

Other students from College-S indicated that they too had stereotypes about Northerners, mainly that they were more open-minded and progressive:

Mary: The part of the country that I live in is even less responsive than your area may be. You will probably better be able to use her ideas [the author of a progressive theory] because your area seems more open-minded. Mine, on the other hand, will question anything new.

Gayle: I understand at College-N you have quite a computer lab. Here we are not funded well enough to have the nice labs like you do. We're not in the Stone Age but we are behind.

Faith understood the Southerners' differences but acknowledged the common human traits of each group:

Of course there are differences in cultures and society between the North and South. On the whole, Southerners are friendly, open, and easy-going. We are not all backward and country do-do's like pictured on the Beverly Hill Billies.We have good, bad, rude, caring, delightful and boring people just like you do.

College-N student Chris joked with his partner about the stereotypes: "I hope you are managing well and that swarming locusts do not attack you in your sleep." Patrick, on the other hand, hoped to teach in the South and worried about interactions with Southerners: "I have been getting mixed messages from people about how well a Northerner would be accepted." College-N student Bill assumed the Northern ways were "standard":

I have been brought up in a place where standard English is pretty much a natural dialect for us. The people who do the national news-we sound just like that. So, I was wondering if there is much of a difference between the preferred dialect in the South and standard English, or am I just being incredibly naive?

Some partners wrote lengthy messages about these differences, and such sharing led to relationships. Melinda, from College-S, informed her partner Betty-Ann of the inaccuracy of television's portrayal of Southern women as subordinate to men. For her, "Most women, or at least the ones I know, are more like Julia Sugarbaker on 'Designing Women.' I find myself acting a lot like her-I am very strong-willed, outspoken, and I won't hesitate to tell you what I think about something." Melinda's description coincided with characteristics of her partner Betty-Ann, a woman track expert in the Northeast. Betty-Ann responded, "I spend my afternoons and Saturday on the oval track practicing for 3000 meter and 5000 meter races. Running remains a

big part of my life from which I learn discipline, responsibility, time management and hard work." (These qualities led Betty-Ann to be an outstanding student as well.) She shared that she wished Northerners would adopt the friendly and patient ways of the people of the South that her brother had reported when he was stationed in the army there-"Strange the way the people are in different parts of the country!" After Betty-Ann questioned Melinda, "Do you like grits?" one more stereotype was broken when Melinda confessed, "I hate grits. I prefer Belgian waffles with powdered sugar and strawberries." Interested in regional differences yet finding common attitudes between one another, the two future teachers planned to continue the correspondence over the summer.

Cultural differences within College-N groups also became apparent through the computer collaboration and were communicated to Southern partners. Marie, who in the classroom developed a unit on multicultural literature, indicated the language problems that stem from such differences:

My grandmother speaks "spanglis," a hybrid of Spanish and English. For this reason, she has never bothered to pick up "proper" or conventional English. Grandma can't write a phrase in complete English that makes any sense at all! Embarrassed by this fact, my grandmother refuses to write anymore.

With a Greek father and a Puerto Rican mother, Tony encouraged respect for diverse cultures: "If the class is going to be mainstreamed with different culture groups, it is important to keep the class open minded and use as many books and authors from different cultures as possible." In his student-teaching practicum in an urban city, Marion observed Tony dramatize this awareness by including Spanish poets in a unit on poetry and also reading the poetry in his native Spanish language-a gesture much appreciated by several of his students whose first language was Spanish.

Though personal reports about cultural differences were often lighthearted, sharing these diverse attitudes toward place, life, and language added to students' learning and enabled them to connect with their student counterparts more comfortably. These connections set the stage for the academic pursuits of these future teachers of English as together they constructed knowledge about the teaching of English in secondary schools.

Constructing Knowledge as Future Teachers of English

Interwoven throughout the discussion of cultural diversity were three themes focusing on issues of concern in English Education. These three strands show the future English teachers constructing knowledge as they prepared to enter the secondary classroom. They summarized the professional journal articles they were reading as part of their course requirements, they talked about their experiences with various class assignments, and they generalized and drew conclusions based upon both their readings and experiences.

Summarizing Professional Journal Articles

Many students from Marion's class reported on Chris Anson's "Response Styles and Ways of Knowing" which all were required to read. Jean explained that Anson discussed three major types of response to student's writing and then continued her message with a clear and concise account of the three ways of responding. Nicole, in contrast, promised a brief summary, but followed with a complete and detailed report. Carole introduced Anson's article in her first message and continued the discussion in her second:

I was telling you in the last message that Anson was concerned with the growth of student writing. Anson's question is that since we all have different ways of knowing, as teachers, what beliefs about learning do we convey through our responses to students writing?

Mary Ann's class, however, in this first collaboration independently selected articles on various topics. Some took a light-hearted approach while summarizing what they had read. Bob presented the author's point of view when he discussed an article on computers and the writing process: "The devil's instrument is how the author described it. With the stroke of a key, all revisions, rewrites, and possibilities are gone." Dan took a more objective approach in summarizing an article which identified ten ways the computer has changed classroom instruction:

According to the author, the computer has allowed students to become better writers because the editing process is so much quicker and easier on a computer that students have more time to make their papers better.

Other students such as Ruth commented only briefly on their current reading: "I am reading an article now on multicultural teaching."

Students from both North and South conscientiously reported on their assigned readings. They shared without comment or question what the experts were saying in professional journals and scholarly texts. But their messages were not limited to a simplistic recording of what others had written. They were also anxious to share the various classroom activities and out-of-class assignments which they were completing.

Relaying Experiences with Class Activities and Assignments

Bob, a student at College-S, introduced his topic for an in-class activity in a formal manner: "Let me take this time to tell you about what I am doing in class." He then provided a detailed description of a prewriting activity in which one student described an object which other students tried to draw. After Patty explained that one of the College-S requirements was to teach a freshman 101 class, Amy (College-N) responded that her student teaching was the only practical experience they got. (In reality, the course began with a 20-hour field experience.)

Several students in Marion's class talked about a group presentation focusing on the teaching of traditional literature. Brenda wrote, "I have an idea to write an introductory statement in a talk

show as the author of the book, Harper Lee, using music to emphasize my points." Ann (College-S), responded that her class concentrated on the writing process itself and explained:

We don't really discuss literature as far as novels are concerned. Lately, we have practiced the steps of the writing process. Prewriting activities like journal entries, sensory exercises, and prompt drills have proven effective for generating ideas for papers.

John offered an overview of the College-S class:

We begin with an emphasis on writing as a process and proceed to study the function of the rhetorical process. We have discussed various methods of evaluating student papers and seen first hand some innovative prewriting/brainstorming methods.

Both groups of students not only described their assignments; they also compared and contrasted them and began to consider their value. As the dialogues continued, as well as reporting and evaluating, they began to synthesize what they were learning from each other and report what they were learning about themselves as professional educators.

Drawing Conclusions and Offering Generalizations

College-N students not only summarized the Anson article; they analyzed and evaluated it and applied it to their own teaching and learning styles. Beverly identified with the three response styles because she sensed this pattern of development in herself:

As a freshman, I was scared and leaned on every word of the professors. My sophomore year saw me opening up more and trusting what I knew. Now, I realize that my views are just as important and meaningful as others.

Mary focused entirely on her own evaluation of the three response styles:

I was appalled at the teachers who responded using a dualistic response, focusing only on mechanical mistakes. The relativistic responses were too much the other way, responding only to the person not concerning their writing. Reflective responders seemed to be most responsive to the writer and the writing giving feedback about the writing while responding emotionally to the subject matter.

Likewise, College-S students moved beyond summary and report. Students evaluated what they read and experienced, and they reflected upon their role as English teachers. Terry read an article which examined the research on teaching grammar. He was surprised to discover that it was not an effective way to improve students' writing. Terry, like most preservice teachers, was struggling to understand the implications for his classroom:

The article was full of ideas, but I think the author failed to address the parents' response. If a student took home a draft without the mechanical errors marked in it, the parents are going to question the teacher's proficiency in the classroom.

Catherine, having read the same article, evaluated her own experience as a student and recognized the role standardized tests play in supporting the teaching of grammar:

I guess I am still not sure if I believe teaching grammar is a lost cause. I know all of the research but I am one of the few people who learned (and liked) grammar and wrote pretty good papers. Another problem I have with throwing strictly grammar lessons out the window is that it probably won't ever happen. The schools are so concerned with test scores that they are forcing teachers to teach grammar. If it doesn't work, the principals need to get a clue!

It was when students began to analyze and synthesize what they had learned and to offer opinions and conclusions that a real dialogue began to occur. Harry (College-S) corresponded with Evelyn from College-N. She provided an overview of the Anson article on response styles and reported that "the dualistic approach focusing on the correction of surface features is used by teachers who need to gain authority. They feel threatened by students." She then continued the discussion by analyzing her own teaching style:

This was interesting to me because I also share in these same insecurities. Because I am so young, I need to establish that I DO have more knowledge than the students do. This dualism is so easy to slip into, but we have to remember that it is detrimental to the students.

She concluded that "the reflective approach has a foundation AND walls for the building blocks of a truly good student/teacher assessed paper."

In his response to Evelyn, Harry acknowledged her comments:

Right now if I was to begin teaching English I would probably use the dualistic approach. I would have to rely on grading papers using correction in spelling, grammar, etc. I hope that as I become more secure with my teaching abilities, I can branch out. I would like to think that my class would be able to write and not always worry about a grade. I would love to allow my students to be as creative as possible and not always worry about getting an A or being corrected for shift in tense.

As he prepared for his internship, Harry admitted that he felt more confident about teaching literature than grammar: "Although grammar is important, I need to know it a lot better than I do right now. I would not want to go into a classroom and cheat my students because I don't know grammar well enough to teach."

Evelyn tried in her response to encourage Harry by sharing a discovery she had made. She admitted that she was "horrible with grammar, but really mastered, at least, one part of it when...[she] had to do a lesson plan on active/passive voice. It was amazing how much you learn from just teaching it." In Harry's next message he critiqued his own teaching experiences. He explained in detail a lesson he had taught to his peers, based upon an article in the English Journal. He was pleased that his peers had responded so well to his lesson on metaphors but admitted, "I don't think it would have been so smooth in a real ninth grade class."

Nancy (College-S) and Jane (College-N) made connections between the experiences and readings in their two courses. Nancy responded to Jane's evaluation of the three response styles. They both agreed that the reflective style was best. Then Nancy connected this article to her composition theory class: "That idea ties into the overall theme of our class-writing as a process. One of the most important aspects of the process is feedback, but only after the final evaluation." Jane agreed with this conclusion:

I am interested by what you are learning in your class about writing as a process. I agree that this theory is demonstrated by the reflective response style. I believe that it is crucial to treat writing as an ongoing process-it seems useless to simply correct drafts of student writing.

Jane then connected their discussion of theory to a presentation by a guest speaker who came to their class, a teacher whose classroom was set up as a reading/writing workshop. She stressed the importance of evaluating drafts and an entire body of work. Jane concluded, "Our speaker was great; she seemed very enthusiastic and very willing to keep learning herself."

The responses of both North and South did not progress in a direct line from report to analysis to evaluation and generalization. Responses on various levels were intermingled throughout their discussions. However, these dialogues with other preservice teachers did cause students to reflect upon their learning experiences and to consider the implications for their own classrooms. They recognized connections between the two classes, analyzed the differences, synthesized the similarities, and evaluated the process of learning to become an English teacher.

Experiencing Technical Problems

Technical problems continued throughout the two computer collaboration projects and, indeed, limited some of the possibilities for constructing knowledge about becoming an English teacher and understanding diversity between these two regions of the country. Student messages were peppered with comments on their frustrations; they sent apologies to their e-mail partners and complaints and excuses to their instructors.

Students at College-S had no experience with sending e-mail and were required to follow a cumbersome procedure to access the Internet. With only three computers available for sending e-mail, they were also hindered by a lack of technical equipment. Although College-N had a computer lab, students complained that they often had to wait in lines at the computer labs and, on occasion, found the computers down which, as one student explained, "kind of messed things up!" It was not unusual to lose mail somewhere in cyberspace. Bob, a College-S student, acknowledged his own lack of computer skills: "You would not believe this but I no longer have your last letter in my electric noodle." Gary, College-N, decided to give up on his lost mail: "Thanks for trying to get my message back. I asked my teacher today what I should do about the first message I sent you and she said it's okay if I just call it lost."

Perhaps the most frustrating experiences were the times the system or the equipment just did not work. Faye (College-S) submitted a note which was signed and dated by the college librarian: "The printer was not working properly, but I did send my letter. I have the verification of the librarian." Lynn (College-S) sent an apology to her partner: "I am sorry you are receiving this

message late, but our system was down until this afternoon." When Amanda (College-N) responded to Patty, she ended with an apology: " I am sorry this computer is so poor. Hope you can read it."

During the second collaboration, when we worked with peer groups, Mitch, a College-N student and a computer science minor, assured us he would organize the technological aspects of the project. However, when the first messages from College-S did not reach their peer groups at College-N, both groups fell behind schedule. Much to our relief, Mitch finally solved the problem and sent the following message to Mary Ann:

I found the problem. in% is tagged on by our computer system. You probably don't need it at all. Have your students write to me at that account, just as you would enter it. I am sorry. I hadn't considered the differences in our systems.

The importance of audience response was evident in both phases of the project. When students did not receive a message as scheduled, they were upset and were tempted to withhold their next message until they did get the awaited response. As a result, the number of messages sent from both universities tended to dwindle as each phase drew to a close. John (College-S) sent a follow-up letter to his partner, hoping for a response: "I haven't received anything just yet (I'm guessing that's due to some computer mishap along the line somewhere; I hear there's been a lot of trouble with lines going out and that sort of thing.)" However, Faye's handwritten note to Mary Ann was the typical reaction of most students: "My partner never returned a response to my 2nd letter. So I waited till today to write him back (hoping he would send me some mail)."

Despite the frustrations both groups of students encountered in the two collaborative projects, they acknowledged their accomplishments and remained positive about the value of educational technology and cross-cultural correspondence. Lynn (College-S) began one of her letters by announcing that she had learned "a little something about the VAX today in class: how to get a directory of all the mail you've received and forward any mail." John (College-S) was excited about this new experience: "I see a lot of possibilities for the net! Too bad I haven't tried this before! " Harry (College-S) sent a message to Dan agreeing that "this Internet conference will be a good learning tool for both of us." Eve's response (College-S) was typical of most of the college students. She wanted her students to have the same opportunity that she had to engage in one-to-one correspondence and to participate in discussion groups. "Electronic mail is especially valuable for students in rural areas who have limited access to varied information and to culturally diverse voices. It gives them a real-life writing project."

Though students encountered technical problems, their final course evaluations were generally positive. The students were grateful for the opportunity to work with technology in an educational setting, for, as future teachers, they would be more at ease in assisting their own students with computers and designing similar projects. Projects with their students might lead city to meet suburb, East to meet West, or North America to meet Eastern Europe. Now they were able to envision the many possibilities for their students to construct knowledge through e-mail.

Final Reflections and Topics for Further Study
Student Learning

In reflecting on the experiences of our students and ourselves and in reviewing the transcript data of all communications, we interpret the two collaborations as worthwhile. Students learned the benefits of an authentic audience for writing in terms of motivation, particularly when that authentic audience extends students' experiences of diversity. Their natural curiosity about another part of the country, which seemed quite foreign to them, prompted them to ask many questions of each other. Their queries suggested that they expected not only life styles but also teacher education classes to be quite different. Through their written conversation, students were made aware of the influence of culture on literacy perspectives when they heard from the two students in Marion's classes whose parents and grandparents spoke English as a second language and from a student in Mary Ann's class who revered the tradition of direct grammar instruction. They also learned that individuals are often quite different from their cultural stereotypes. They discovered that, despite differences in geography, people often have much in common, as was the case of these future teachers who shared similar concerns about their common career goals.

The two classes also learned from one another as they shared their own individual experiences with reading and writing, reactions to assigned journal articles in the different classes, and learnings from different classroom projects and activities. In constructing knowledge about issues outlined in their readings, they began to understand the complexity of making curricular and pedagogical decisions in the presence of multiple perspectives on a single topic. In observing other students like themselves struggling to come to terms with the complex issues that influence approaches to teaching English, they came to realize that preservice teachers, no matter where the location of their college, share insecurities about their future roles as teachers.

Though many of these issues can be discussed in a single classroom, the computer technology extended the construction of knowledge by enabling communication with students from a different region of the country and thereby opening up the possibility of learning from more diverse views and for confirmation of ideas by a larger population of students. Furthermore, the anonymity of e-mail correspondence may have allowed students to be more honest and open in their evaluations of their own strengths and weaknesses. They could admit failures without embarrassment and they could talk about successful experiences without seeming proud because they were talking to an e-mail partner rather than a peer in the classroom. In addition, the written medium of e-mail allowed each student to be active in the construction of ideas, and it also encouraged written reflection that is often more lasting than classroom discussion (Fey, 1994a).

Besides the power of extending the classroom to a different region of the country, students left the collaboration more able to bring a critical perspective to the use of educational technology, a medium which will inevitably play an expanding role in twenty-first century classrooms. We were all reminded that teachers must insist on user friendly software and computer support in order to receive full benefit of the computer's potential. The "horrific" moments described by Day et al. (1996) were there, but so were the "wonderful" moments when students made connections and shared insights with future teachers far away.

Topics for Further Study

Our story of a college collaboration between North and South suggests a number of topics for future exploration:

- cross-college computer collaboration through small-group organization with software designed for group collaboration (e.g. listproc)
- the responsibility of technical personnel (school or college) in supporting online classroom projects
- different models for integrating school-college computer collaborations into classroom curriculum
- ways to compensate for variable responsibility among students in partner-or small-group computer collaborations

An understanding of these topics will enable teachers to integrate computer collaboration into classroom curricula and offer the possibility of extensive learning on the part of students.

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Appendix

Survey: E-mail Correspondence between College-N and College-S

This e-mail project involved several goals. Were they achieved? To what degree? Please check your response "yes," "somewhat," or "no" and clarify with comments.

1. To learn the basic procedures for communicating via e-mail.
2. To learn about a pre-service program for English teachers in another part of the country.
3. To be introduced to additional readings and concepts in regard to the teaching of English.
4. To develop a contact with a colleague which would continue beyond the project.
5. To learn, through participation, the value of an authentic writing situation.
6. To consider the implications of the project for your own classroom.
7. To broaden perspectives by interacting with students from diverse regions and cultures
8. Other outcomes? Please identify and explain.
9. What were the major problems you encountered in completing the project?