Successful Electronic Distance Collaboration: The Importance of Social Negotiation

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Abstract: The emergence of the Internet has allowed us to initiate electronic distance collaborations with all parts of the world. However, our experience and understanding of what factors bring success to such collaborations is limited. This article describes an electronic distance collaboration between students at three universities, as well as the introductory research conducted by this article's author. Results suggest that success in such an academic exercise might be best determined by problems found and corrected. That predicting success for an electronic distance collaboration cannot be reduced to formulae but should instead be considered highly complicated intersubjective communicative interactions.

Résumé: L'arrivée de l'Internet nous a permis d'établir des relations de collaboration dans tous les coins du monde. Toutefois, notre expérience et nos connaissances sont limitées quant aux facteurs qui peuvent influencer la réusitte de ses relations. Le présent article décrit une relation de collaboration par le biais du courrier électronique entre des étudiants de trois universités. L'article présente aussi les résultats d'une recherche exploratrice faite par l'auteur. Ces résultats suggèrent que la réussite d'un tel exercice académique aurait plus de chance d'être établie si il y avait une remédiation des problèmes identifiés. Prédire la réussite d'une relation de collaboration par le courrier électronique ne peut être réduit à de simple formule. La prédiction d'une réussite de ce type de communication devrait plutôt considérer la complexité de l'interaction intersubjective.

> Where the hell are You? Today is Wednesday and we have to turn something in on Friday. haven't heard s-t from you since the very first time you sent me something. You're f-king smoking if you think that I'm going to do it by myself. My teacher said that Ishould kick your a-s. (From one student to another student in an electronic distance collaboration.)

No matter what I say to students as they enter into electronic distance collaborations, I am always surprised, often unpleasantly. The student who sent the above message was not from my class. Nonetheless, his instructor and 1, involving our students in an inter-university electronic distance collaboration, worked closely together in an attempt teach students to think before

they press the key that sends off electronic-mail messages. Obviously our in-struction in this regard was somewhat lacking.

For the purposes of this article I am defining Electronic Distance Collabo-ration, or EDC, as any kind of collaborative effort done over distance, using computer networks such as the Internet. Though electronic mail (e-mail) is just one method of communication employing computers and computer net-works, it is the primary method used in the collaborations I discuss in this ar-ticle.

After some four years of conducting electronic distance collaborations be-tween my students and students in other parts of the world, as well as stu-dents in the same university, I have learned to expect the unexpected. I have also learned that rather than concentrating on teaching how to be successful in these electronic distance collaborations, I am further ahead if I approach these projects as opportunities for the students (and, of course, the instruc-tors) to experience EDC, complete with successes and failures, and, hope-fully, for the participants to become better collaborators as social negotiators in computer mediated communication in general, and specifically is using an apparently simple medium — electronic mail.

In this article I ask:

1. how success in electronic distance collaborations should be defined
2. what factors are related to success?

In answering these questions I rely upon my recent research which in-cludes a text analysis done on the collaborative work of my students and their collaborators at the University of Missouri at Kansas City and the Uni-versity of Nebraska at Lincoln in the fall of 1994, as well as a survey I con-ducted of my students of the same period.

THE PROBLEMS INHERENT IN ELECTRONIC DISTANCE COLLABORATION (EDC)

Since the beginning of the use of language we have amassed significant common communicative experience. However, even in the best of times when we share many of the same experiences with our interlocutors we can never absolutely predict the outcome. Wittgenstein suggests "If language is to be a means of communication there must be agreement not only in defini-tions but also (queer as this may sound) in judgments" (Wittgenstein 88e). Factors such as motivation, intention, mood, experience, and so on, are diffi-cult to predict. Our communication is at best a guess, or a really, really good guess. Kent maintains that "we put language to use - language does not use

us" (Kent 16). When we have known someone for years we may feel that the words we use are perfectly clear to both parties when in fact we are not only guessing, but are probably making more incorrect guesses than we realize. On the other hand, when we don't know that person, we may be more conscious of our guessing and we adjust, or "shift" in the words of Kent, as we predict the other person's communicative strategy.

In an electronic distance collaboration students often assume that just because they send an electronic mail message that the message is completely clear and will invoke the intended response. Students fail to realize that collaborating with another student face-to-face requires a certain amount of shifting, or what I am calling social negotiation, and that using e-mail to communicate with participants makes the need for social negotiation even more imperative. This is all further complicated when participants, new or experienced, to electronic mail, or any computer mediated communication medium for that matter, tend to apply the wrong experiences to it (Willis 17); that is to say, they are applying experiences of face-to-face communication or letter writing or something else which results in behaviors of respondents that often surprise the initiators (Goode 61). To use Kent's terms, the students are making bad guesses.

Porter argues that we should think of electronic mail "from a broad perspective: as an environment in which a diverse range of writing and research practices can be exercised and studied." His argument suggests that e-mail should not be considered simply as a medium for writing memos (Porter 41). Too often, the advice we receive for using electronic mail tends to follow the lines of etiquette (Updegrove 37) which, though useful, still tends to ignore the rhetoric of electronic mail (or more broadly, computer mediated communication) and pay attention to more stylistic issues.

I argue here that electronic distance collaboration, specifically where electronic mail is used, requires attendance to social negotiation in a new and different way. As a means of communication electronic mail is distinct and separate from other media, such as print or oral media. I further believe that it is a mistake to assume that theories which apply to face-to-face communication are applicable in an electronic distance collaboration.

THE RESEARCH

I conducted the research in this project in the hope of locating some direction for future research rather than to gain conclusive evidence. For example, the number of students I use for my statistical population (24) is simply too low to be statistically revealing. However, the research does give me some direction for future research.

Settings and Participants

In the fall of 1994 Julie Bukovich, a technical writing instructor at the University of Missouri at Kansas City, and I set up an electronic distance collaboration between our students. We brought in a third class, taught by Jerry Parsons, Assoc. Professor at the University of Nebraska in Lincoln. I was teaching Business Communication; Julie and Jerry were both teaching Technical Writing. The plan was to have students at all three campuses jointly write some sort of report. We set up eight groups in each class. with at least two and at most three students from each university in each group. Group One in my class would work with the corresponding Groups One in each of the other two classes, and so on.

We decided that a good topic for students to report on would be native American tribes, specifically the Shawnee, Pawnee, and Iowa. These tribes were generally of the geographic locations corresponding to the three participating universities. Each student group was assigned one of eight categories ranging from religion to art to economics. For example, Group One in my class was to research the religion of the Iowa Indians while Jerry's students researched the religion of the Pawnee tribe and Julie's students worked on the religion of the Shawnee people.

Native American culture worked well for this project because the students really had no knowledge of the native American peoples. We felt that this lack of experience of native American cultures would provide a more even playing field for all. As to computer literacy, the students, and the teachers, were all over the scale. Some students were completely new at electronic mail while others were computer science majors and had extensive experience.

Research Questions

My goal in conducting this research has been to better understand how success in an electronic distance collaboration can be achieved. Is there a relationship between computer literacy and EDC success? At the time I felt I had some intuitive understanding but I needed some confirmation which would then lead me in a more clear direction. I first needed to decide on a working definition of "success."

HOW SHOULD SUCCESS IN ELECTRONIC DISTANCE COL-LABORATIONS BE DEFINED?

Success in an electronic distance collaboration is not easy to define. Oh, we could say, for example, that success is the generation of a jointly written

proposal. Or one that is accepted. But what about future collaboration? Does the mere fact that the two parties are able to generate jointly written proposal that is accepted suggest that participants will be able to work together in the future?

In our collaboration one particular group experienced significant difficulties and in an attempt to reduce confusion sent the following message to the group members at the other two universities.

Following are some suggestions... for the tri-campus...collaboration:

1. When communicating via e-mail, try not to use personal pronouns (i.e. we, us, you, it, etc.). Attempting to be exact and distinct in what one communicates will hopefully avoid miscommunication and further delays.

2. Rapport has been established; please do not use sarcasm or unnecessary humor when discussing the collaboration project via e-mail. Approaching the collaboration in an unemotional, technical, and business-like manner will aid in reducing wasted time due to miscommunication.

   With time running out for this project to be completed, all three campuses need to communicate effectively and efficiently.
   Unless UMKC or UNL writes ISU and expresses that UMKC or UNL is dissatisfied with the suggestions that ISU has made, it is to be assumed that the previous announcements and guidelines are acceptable and understood.

Thank you for your cooperation.

This communication caused a great deal of upset among the receiving group members at one university. Someone had originally tried to interject some humor in an e-mail message (as in a face-to-face communication) and when the authors of the above message rejected that humor, the rejection was read over and over and over until the recipients were, to say the least, piqued. In the end, the two groups of students cleared up the mess. (The third group remained strangely silent throughout this particular exchange.)

The students involved in the misunderstanding spent enough time straightening out the confusion that their end product suffered somewhat. Yet I would prefer to have them involved in a future collaboration because they know just how misunderstood things can be. The group making the communication errors, I believe, will be most prepared for future electronic distance collaborations because they were forced to negotiate with their collaborators.

METHOD

Text Analysis of Electronic Mail Exchanges between Students

Students were all asked to send copies to their respective instructors of any e-mail they sent . In our Ultrix operating system at Iowa State, students are asked for "carbon copy" addresses before they write the message. I am guessing that this contributes to students "addressing before writing before thinking" in that, I received copies of several electronic messages wherein students actually discussed me with their partners, seemingly oblivious to me as a reader. For this reason, and because I could follow these electronic dialogues throughout the semester, I believe 1 have a fairly complete set of mail exchanges. It is possible that students forgot to include me in the carbon copy section but quite often the e-mail was addressed to a small distribution list students created for their groups. In those, I was a list member, so when mail was addressed to the list, 1 automatically received a copy.

In examining the e-mail exchanges, I first sorted the exchanges by group then by date, thus enabling me to follow the conversations within each group. (I had copies of all electronic mail sent from one of the other two universities and some e-mail from the other university. I used e-mail from the other universities to help me make sense of the messages my students sent.) I then looked for two specific instances: misunderstandings followed by clarification.

Under misunderstanding I lumped disagreements, arguments, or dialog with no apparent understanding at all. I also included questions for clarification such as, "Where are you? We haven't heard from you in a week!" My justification for such an approach was that I was not as interested in students producing an end product as 1 was in students learning to negotiate electronically over distance.

Student Analysis Reports

At the end of the semester, and as part of their portfolio, students were each to write an analysis of what they felt would make a successful collaboration. I specifically asked them to include examples from that semester's collaboration in support of their claims. This approach, I believe, allowed students to reflect upon the collaboration just conducted and apply their experiences to the future. Students were told that the reports should be based primarily on their insights into electronic distance collaboration. What experiences would best serve them if future employers ask them collaborate electronically with someone in another office, province, or country? Students were also told that the reports would weigh heavily in their final grades.

Instructor's Rating of Success for Each Group Overall

I had hoped that the thoroughness of the students' answers would give me some indication of what the students learned about electronic distance collaboration. Students' insights and the experiences combined with the text analyses of student e-mail exchanges provided sufficient material for me to give a success rating overall for each group's participation in the electronic distance collaboration.

I devised the following scale to take into account both the text analysis of student electronic mail exchanges and the student analysis reports which together might allow me to determine the success of each student group in my class.

Beginning with Unsuccessful, the obvious total failure then in an electronic distance collaboration is having total misunderstanding. Moving toward the Successful end but still on the Unsuccessful half of the scale is the scenario where students have no misunderstanding at all , therefore no clarification is needed.

If there was one misunderstanding which resulted in clarification groups were rated in the middle. More than one misunderstanding/clarification gave me some indication that the participants had not achieved clarification purely by accident. And finally, I have decided that EDCs which included substantial misunderstanding and proportionate clarification were the most successful in terms of the goals I have as an instructor.

Table 1

Unsuccessful			Successful
Total misunderstanding No clarification No insight		One misunderstanding One clarification Some insight	Misunderstanding Clarification Insight
	No misunderstanding No clarification No insight	More misunderstanding More clarification More insight	

WHAT FACTORS ARE RELATED TO SUCCESS?

Gauging the success of an electronic distance collaboration, or to some extent any collaboration, is difficult. And once you think you have seen success it is equally difficult to determine just what caused the EDC to work. Stylistic figures employed, the number of words written and phrases used, or other

structural devices may be insufficient for getting at the elements essential for a successful EDC.

While there could be a myriad of factors which in some way affect the success of electronic distance collaboration, I employed the following questionnaire to answer the question of computer experience.

Method

Questionnaire

I asked the students in my class to fill out a questionnaire (see Appendix) at the beginning of the semester. My purpose was to find out if students' familiarity with computers as writing tools affected students' successes in an electronic distance collaboration. My idea was to compare the results of the questionnaires with the groups I had rated as successful in the EDC and see if there existed any correlations. One might easily suppose that students having no prior computer experience might experience greater difficulty in an electronic distance collaboration and I wanted some verification of this myself.

The questionnaire was based on a similar questionnaire written and conducted by Mike Markel, Boise State University. The twenty questions are divided into three unmarked areas: experience in using the computer, using the computer as part of the writing process, and using the computer to replace traditional tools when writing in the classroom. The twenty-four students filled out the questionnaires at the beginning of the semester.

RESEARCH RESULTS

HOW SHOULD SUCCESS IN ELECTRONIC DISTANCE COLLABORATIONS BE DEFINED?

Text Analysis of Electronic Mail Exchanges between Students

With an examination of e-mail exchanges I had hoped to spot misunderstandings (or confusions, complete lack of understanding) each group. Surprisingly, I found little which was of great help. You'll recall that students were locating sources of information. Electronic mail conversations rarely included any of the information found or sought; rather, students often wrote "we're getting together tomorrow at the library." Some lengthy exchanges turned out to be descriptions of how to use a distribution list within that group. Sometimes the conversations seemed not to take place at all, that is,

student A would say something, a few days later student B would write back but not respond directly to what student A said. In this sense it was almost as though students were posting announcements rather than interacting. It was, at best, difficult to know if their was a complete lack of understanding or a lack of intent to communicate.

It was my impression that students had no reasons for communicating with their partners, or that they were communicating only because they knew they were supposed to. However, students may have simply used the telephone or a "talk" utility on the computer system, neither possibility having occurred to me. As a result of examining the electronic mail exchanges I was unable to determine the success of the electronic distance collaborations.

In spite of these problems, I was able to identify some instances of misunderstandings. There were also instances of few apparent misunderstandings in the e-mail while the student analysis reports suggested otherwise. There were also a few misunderstandings not clarified via e-mail but I learned later, were clarified by telephone or by using a "talk" utility over the Internet.

Student Analysis Reports

Students who experienced major difficulties in understanding and in being understood, and who were also able to clear up the confusions, gleaned strong insights and made good cases for approaches to future collaborations in their analyses. The one earlier who advocated humorless writing wrote in his analysis that third person, emotionless writing might communicate well in the medium of the scientific research journal but in an electronic distance collaboration, it may not. It is in the student analyses that I was able to see a relationship between what I considered successful collaborations and students' insights gained through misunderstandings and subsequent clarification.

Table 2

Group	Misunderstanding/Clarification	
1	1	1
2	0	0
3	5	5
4	2	0
5	3	1
6	2	2
7	2	0
8	0	0

Instructor's Rating of Success for Each Group Overall

Having a report from each of the three individual members of all eight groups allowed me to compare the experiences and insights of each group to the electronic mail texts and to then assign a rating of each group according to the scale of success. The results are as follows:

Table 3

Group	Success Rating Overall
	(1 =Most Unsuccessful, 5=Most Successful)
1	3 = (one misunderstanding, one clarification]
2	2
3	5
4	1
5	4
6	4
7	1
8	2

WHAT FACTORS ARE RELATED TO SUCCESS?

Questionnaire

When comparing the collaborations which I deemed successful to the results of the questionnaire I found absolutely nothing which would suggest relationship exists between EDC success and computer literacy. Students who were successful in the EDC did not necessarily rate highly in the questionnaire, nor did the participants in unsuccessful EDCs necessarily score low on the literacy questionnaire. Combined with the small sample (21 students), I don't believe I can accurately point to a relationship between computer literacy and success in an EDC.

Below are the results of the questionnaire (see Appendix for questionnaire), along with my success rating for each group. The answers to the questionnaire are grouped into the three categories: experience in using the computer, using the computer as part of the writing process, and using the computer to replace traditional tools when writing in the classroom.

The data were analyzed using SPSS-X mainframe software. Inter-item consistency (i.e. reliability) was assessed using Cronbach's alpha. The reliability of the was quite good (_=.8510).

Table 4

Group/ Student	Computer Attitudes: Prior Experience (Mean)	Computer Attitudes: Process (Mean)	Computer Attitudes: Replacement (Mean)	Instructors Success Rating
1	2	3. 3	2. 8	3
IA	1.5	3	1.8	
IB	1.8	3. 5	2.7	
IC	2. 7	3. 5	4. 2	
2	1. 7	2. 9	3	3
IA	1.3	3. 5	3. 5	
IB	1.8	2	1.5	
IC	2	3. 3	4	
3	2. 7	3. 1	3. 7	5
IA	3. 3	2. 9	3. 5	
/B	3. 7	3. 5	4. 8	
/C	1. 2	3	2. 7	
4	2. 2	3. 5	4. 2	1
IA	2. 3	3. 1	4. 3	
IB	2. 5	4. 4	3. 7	
IC	1. 7	3. 1	4. 7	
5	2. 4	3. 4	3. 6	4
IA	3	3. 5	3. 8	
IB	2. 3	3. 5	2. 8	
IC	1.8	3. 1	4. 2	
6	2. 7	3	3. 6	4
IA	1.8	3	2.7	
IB	1.8	3	2.7	
IC	3	2. 8	3. 7	
7	2	3. 4	3. 6	1
IA	2	3. 4	3. 6	
IB	2	3. 3	4. 3	
IC	1.3	3. 6	2. 5	
8	3. 2	3. 5	4. 1	2
IA	2. 2	2. 6	3. 7	
IB	3. 5	4	4. 8	
	3. 8	3. 8	3. 8	

A flaw in the above data is that there were only 24 students used, therefore, I do not feel safe drawing any conclusions. Nonetheless, I did find it interesting that there were no obvious correlations between the success ratings I issued and the group means for computer experience. For future research I think I might be more inclined to test for previous skills in social negotiation than for computer experience.

THE IMPORTANCE OF SOCIAL NEGOTIATION

It has been my claim throughout this article that students, in order to understand what it takes to conduct a successful electronic distance collaboration, must experience at least limited failure which can then be corrected with an accompanying understanding of what went wrong and how it should be avoided in the future. I now base this claim on the misunderstandings my students experienced in the EDC and upon their newly gained insights.

In "social negotiation," the electronic distance collaboration is similar to any other situation where negotiation takes place. Each party, each negotiator, brings forward theories and experiences which she believes to be appropriate at the moment, based on her assessment of the person with whom she is negotiating (Kent). The difference is that the experiences students, and all of us really, bring forward in computer mediated communication are limited or, if we aren't careful, of the wrong medium.

I do not believe that there is an easy, formulaic approach will somehow predict success. However, recognition of this combined with more experience and further research will make electronic distance collaboration more predictable and, hopefully, more successful.

Computer Use Questionnaire

The information requested on the following questionnaire will be used for statistical purposes only. Your answers will not affect your grade.
For the following items, please circle the appropriate number.

1. I have had substantial experience word processing on a computer.
   strongly disagree   1   2   3   4   5   strongly agree
2. I have had substantial experience using electronic mail (e-mail).
   strongly disagree   1   2   3   4   5   strongly agree
3. I have had substantial experience using computers for communication (other than e-mail).
   strongly disagree   1   2   3   4   5   strongly agree
4. I have had substantial experience programming a computer.
   strongly disagree   1   2   3   4   5   strongly agree

5. I have had substantial experience in data management using a computer.
   strongly   disagree   1   2   3   4   5   strongly agree
6. I have had substantial experience playing games on a computer.
   strongly   disagree   1   2   3   4   5   strongly agree
7. When you write a paper or lab report of more than a few pages, how
   often do you write an outline of some sort on a computer?
   Never   1   2   3   4   5   always
8. When you write a paper or a lab report of more than a few pages, how
   often do you write on some sort of paper?
   Never   1   2   3   4   5   always
9. When you write a paper or a lab report of more than a few pages, how
   often do you write your initial draft on a computer?
   Never   1   2   3   4   5   always
10. When you write a paper or a lab report of more than a few pages, how
    often do you write your initial draft on some sort of paper?
    Never   1   2   3   4   5   always
11. When you write a paper or lab report of more than a few pages, how
    often do you   revise the document on a computer screen
    (instead of using a print-out)?
    Never   1   2   3   4   5   always
12. When you write a paper or lab report of more than a few pages, how
    often do you revise the document on paper, including a print-out?
    Never   **1 2** 3   4   5   always
13. When you write a paper or lab report on a computer, how often do you
    use a spell-checker program?
    Never   1   2   3   4   5   always
14. When you write a paper or lab report on a computer, how often do
    you use a thesaurus?
    Never   1   2   3   4   5   always
15. I feel that using a computer makes writing easier for me.
    strongly   disagree   1   2   3   4   5   strongly agree
16. I feel that I write more quickly using a computer.
    strongly   disagree   1   2   3   4   5   strongly agree
17. I feel that I write better using a computer.
    strongly   disagree   1   2   3   4   5   strongly agree
18. I am very comfortable using a computer to do an in-class writing as-
    signment.
    strongly   disagree   1   2   3   4   5   strongly agree
19. I am very comfortable writing on paper for an in-class writing assign-
    ment.
    strongly   disagree   1   2   3   4   5   strongly agree

20. I find it easier to use a computer than writing on paper for an in-class writing assignment.

   strongly   disagree   1   2   3   4   5   strongly agree

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