This paper presents a case study of an "e-pal" experiment which suggests that negative assumptions and orientations toward computer technology for communication purposes can be altered through one-to-one peer relationships. The experiment was conducted through a communication seminar at a small private university in the Northwest. Necessary characteristics for the success of this experiment included little structuring, little or no professional intervention, individual selection of in-depth partners, an offline community meeting to discuss the experiment in process, and willingness to be open to the experience on the part of the subjects. Findings suggest changes in personal computer-use patterns were most noticeable in students originally more techno-phobic. The value of personal influence in interpersonal and organizational worlds and the effectiveness of group learning, feedback, and constant reinforcement are supported by this study. Contains 17 references and two tables. Appendixes contain post-experiment survey questions and examples of individual profiles. (EF)
"E-Pals: An Exercise in the Seduction of Student Technophobes"

By

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National Communication Association
Chicago, IL
"E-Pals: An Exercise in the Seduction of Student Technophobes"

Introduction

Coupling the ideas of seduction and technophobia may seem abnormal at the outset. Both terms connote negativity, which was certainly not the intent or design of this study. Technophobia has been defined by Drs. Weil and Rosen (Bollentin, 1995) as "any kind of mild to moderate to severe discomfort with one or more forms of technology" (p. 1). This phobia may be divided into two sophisticated forms – cognitive technophobia and anxious technophobia with the former using negative self-talk to feed the aversion and the latter manifesting physical symptoms of anxiety when confronted with technology (Bollentin, 1995). Seduction is defined by Webster (1970) in the following ways:

1. to persuade to do something disloyal, disobedient, etc.

2. to persuade to do wrong, as by offering something, to tempt. . . .

Technophobes, in general, fear, hate, loathe, or agonize about using technology and its invasion into their lives (Oskamp & Spacapan, 1990). Thus, putting the two terms together in the context of this paper demonstrates how the e-pal exercise as a part of a computer-mediated seminar persuades student technophobes to be disloyal to their aversion to computers. Offering traditionally-aged university students an

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1 E-pal is a neologism taken from the pen-pal term of former decades. Electronic pen pals is an expanded version of what is intended with this shortened term.
opportunity to meet and converse with other unknown students at a distance tempted them with the appropriate experiential activity that defused the computer anxiety and opened windows onto the world of computer-mediated communication.

Electronic technology, specifically computers, has invaded every sector of higher education since the late 1960's when computers filled the basements of buildings with their massive hardware, cumbersome library tapes, and key punch cards. With the downsizing of hardware and the advent of the personal computer in the early 1980's, professors and students alike have been confronted with what many have viewed as the "opportunity" to learn about and use computers to extend and enhance capabilities as researchers, educators, and students. Early adopters and the majority of conservative adopters (Rogers, 1995) have long since become technophiles and computer-literate. Though it may be hard to comprehend, many (termed laggards, avoiders or reluctant adopters) also viewed this "opportunity" for computer learning (Rogers, 1995; Heitzel, 1997) as a crisis, an onus, or an unnecessary intrusion. As late as 1997 (Rothberg) surveys estimated that as many as 70% of consumers were avoiding technological adoptions, as indicated by their buying patterns. Surveys and studies over the past decade have hinted at reasons for this lagging behavior, suggesting that income level, race, or just plain lack of access contribute to lack of adoption. In higher education where every student has been issued a free on-campus
account for most of the past decade, it is hard to explain technophobic behavior regarding computer use. In such cases as in the business world, individuals refuse to use that which is available (Ostkamp & Spacapan, 1990.) Reasons for this refusal include lack of time to learn, lack of understanding of the capabilities of the device, a preference for the "low tech" option, and the view that performance is not improved with this technological addition (Ostkamp & Spacapan, 1990)(Tuman, 1992). Performance anxiety may also be a contributing element to technophobia (Dimayuga, 1996). Thus, attempting to understand what motivates traditionally-aged university students to avoid using computers when access is free and discovering a means of "seducing" them to abandon these avoidance preferences poses an interesting challenge.

This paper reports a case study of technophobic behavior and its alteration during the course of an upper level computer-mediated communication seminar at a small private university in the Northwest. Case studies are a valuable means of examining research topics. "A case study is both the process of learning about the case and the product of our learning" (Stake, 1994, p. 237). When objects of study are specific, unique and bounded, the usefulness of this epistemological rationale is great. In the case of an intrinsic case study (Stake, 1994) such as this one, the purpose is not to build theory, but to understand the particulars of this setting, this situation. Coupling intrinsic interests with the
E-PALS and TECHNOPHOBES

opportunity to offer something important for instruction (Kennedy, 1979), this project seeks to examine a seminar as the case in hopes of understanding and explaining an instructional element, the e-pal assignment. The intent of this qualitative research design is to use human investigators as the primary research instruments with a concern for studying the social situation for computer-mediated human communication (Lindlof, 1995). The social setting of a seminar is supported as the optimal context for examining people's interaction and reaction to technology (Kiesler & Finholt, 1988). Philosophically as well, the spoken language function of linking humans (Dance & Larson, 1976) supports the experiment with e-pals. The language that is traded across computer screens may be viewed as intrapersonally-sounded spoken language (Johnson, 1994). The primary question driving this research was:

Would the power of interpersonal contact, even with unknown peers, influence students to abandon their technophobia, level of skepticism, or current computer-use patterns?

Methods

This case study incorporates qualitative data collected both during and at the conclusion of a semester-long seminar (15 weeks) in computer-mediated communication at a private religiously-affiliated university in the Northwest. Ethnographic observations by the researcher, student response essays, and a 10-question survey (see
Appendix A) with open-ended questions comprise the “data” for this research. Nine students enrolled in this seminar in the spring prior to the course’s offering. Eight of the students qualified for participation in this project – two males and six females. All students were traditionally-aged (18 to 21 years old) except one returning student who was in her 40’s. One student failed to participate in the course completely, ignored his e-pal assignment, and thus neglected to meet the requirements for inclusion in the project. This seminar was a new course for the department offering it, and a professor new to the university was teaching the course. The course met one night a week for three hours with class time being equally divided between lecture/discussion and experiential computer lab work. Lecture topics covered in the course included defining cyberspace, media ecology, researching on the Internet, the future of the Internet, privacy and property rights, viruses and their impact, international cyberspace, standards of conduct, flaming, concept of communities online, and notables/digerati online. Lab exercises complemented each topic, and the e-pal experience was a semester-long assignment begun the second week. In this way, an overlay experience with interpersonal communication with strangers was added to the course content.

The e-pal experience was a cooperative effort with a professor at a large Midwestern university teaching a CMC course online. The students varied widely from school to school as well as the context of the course
offering. The students in the Midwest were more technologically adept, forced to use the computer to participate in the class, and often were older, more world-wise, and employed. The students at the Northwest university were traditionally-aged, taking the course in the traditional classroom format, encouraged to use the computer in a group in the lab, and not routinely employed. The universities themselves differed in their adoption of technology in the classrooms. The Midwest university would be considered an enthusiastic adopter of computers, offering online courses regularly with a majority of faculty computer-literate and involved in the technology. The Northwest university could be viewed as a conservative adopter of technology, having little high-tech equipment in the classrooms with professors often not utilizing the equipment that was available. Not only were different regional and cultural strata mixed here, but different types of adopters of technology were mixed as well.

The assignment was begun with individual personal profile exchanges (see Appendix B for a sample profile) from the Northwest university being matched by the Midwest professor with as many of his students as possible. With a much larger class in the Midwest, most Northwest students received multiple e-pals — as many as 6 in some instances! The criteria for profile matching was random. Specific demographics were not noted for purposes of anonymity. As well, often personae developed online do not reflect knowledge of demographic information or even accurate knowledge of demographic information.
Each student submitting a profile was told to just "tell what you want the other person to know about you" in a short e-mail. The total words per profile ranged from the least disclosive with 24 words to the most disclosive with 191 words. The average number of words per profile was 134.5. The individual with the shortest profile was excluded from the project as this person failed to participate fully in the seminar. Profile contents reflected physical descriptions, hobbies, majors, domicile outside of school attendance and future plans. One particularly phobic student mentioned the phobia in the profile, noting that she found the whole experiment "strange."

Once begun, students were encouraged to discuss their experiences with their e-pals in class discussion or in their weekly response papers. Response paper commentary focused on acknowledging that the e-pal(s) were communicating, the frequency of communication, and general topics from the seminar presentations of interest.

The post-seminar survey asked students to evaluate the e-pal experience from their own perceptions. Questions focused on their expectations at the beginning, the contents of their profiles, how many e-pals they were assigned. Secondly, they were asked to comment upon any changes they may have undergone during the experience, their perception of the missing nonverbal component of communication and how they compensated. Some technically-oriented questions addressed
their self-report classification of their computer skills before and after this experience, the amount of time spent online for e-pal communication, the use of additional media for e-pal communication, and future plans to continue the e-pal relationships.

Results

The results of this case study focus primarily on four students who completed all parts of the project. One male and three females completed the e-pal experience and the post-seminar survey. With half of the total seminar providing "data", the results are hardly generalizable, but do pinpoint some potential trends. Table 1.1 below lists a summary of the nominal and interval responses to the post-seminar survey questions dealing with the technically-oriented questions about computer usage and efficacy.

Table 1.1 Survey Results – Post-seminar: Technical questions (n = 4)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Classification as user</th>
<th>Time spent on CMC</th>
<th>Other media?</th>
</tr>
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<tbody>
<tr>
<td>Female</td>
<td>Techno-curious</td>
<td>3 hrs/ week</td>
<td>No</td>
</tr>
<tr>
<td>Female</td>
<td>Technically able</td>
<td>Over 160 messages exchanged in total</td>
<td>No</td>
</tr>
<tr>
<td>Male</td>
<td>Experienced and adequate</td>
<td>2-3 hrs./week</td>
<td>No</td>
</tr>
<tr>
<td>Female</td>
<td>Techno-whiz and techno-average</td>
<td>4 – 5 hrs./week</td>
<td>No</td>
</tr>
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</table>

Overall, the students did not use other media such as telephones, faxes, or FTF communication to augment their computer-mediated communication. None of the students described themselves as computer
illiterates. Professor observations, though, would contradict these self-reports of computer abilities. Most students were viewed as technonubbies with minimal skills, often demonstrating a lack of computer skill and prowess. Time spent on the computer lab experiences (e-pal communication) ranged from 2 to 5 hours a week. The average number of hours spent per week was 3. The particularly techno-phobic student reported a very early transition from one message per day to 7/8 messages per day.

The questions on the survey addressing the e-pal experience specifically elicited the responses collated and presented in Table 1.2 below.

Table 1.2. Survey Results: E-pal experience commentary. (n = 4)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Expectations at the outset</th>
<th># of e-pals</th>
<th>Missed Nonverbal?</th>
<th>Future plans?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>Open</td>
<td>3</td>
<td>Missed, used smiley faces and !!!</td>
<td>No, not my forte</td>
</tr>
<tr>
<td>Female</td>
<td>Paranoid, cynical</td>
<td>5</td>
<td>Missed, emoticons, !!! and intuition</td>
<td>Retain contact!</td>
</tr>
<tr>
<td>Male</td>
<td>Guarded, but compliant</td>
<td>5</td>
<td>Didn’t miss</td>
<td>Yes, but less contact</td>
</tr>
<tr>
<td>Female</td>
<td>Open</td>
<td>3</td>
<td>Missed; smiley faces, written witty phrases</td>
<td>No!</td>
</tr>
</tbody>
</table>

Overall, the students who were either paranoid at the outset or somewhat guarded (tending toward technophobia) ended up making
greater changes in their view of technology and becoming more involved in the e-pal experience. Every female student missed the nonverbal components in communication and compensated by using emoticons, exclamation points, and "written, witty phrases." The male student reported NOT missing the nonverbal elements at all. The students were assigned from 3 to 5 e-pals with genders mixed and sometimes matched. Future plans for contact with specific e-pals was reported in this case study ONLY by the students who were paranoid or guarded at the outset. Students reporting an open-minded attitude toward the assignment were not inclined to retain e-pal contact.

The techno-phobic student's weekly response essay in the 12th week evidenced significant support for the depth and quality of the e-pal relationship that meant so much to her. The following quote demonstrates this relationship:

"Now to your (my) favorite topic: Jack! I just received an e-mail from him and in it he said that he sometimes finds himself thinking about me and wondering what I am doing, because we e-mail each other so much. We were having a discussion that was related to this, so it wasn't anything strange to say .... He said how much he likes e-mailing me and how he appreciates all of the honesty and advice. He also told me that he has told me things that he has not told anyone else! I think that Jack and I have the same opinions on a lot of issues. I say this because he said that he felt that he could tell me anything and I would give him my honest opinion because I don't know any of his friends or anything. This is exactly the reason I gave in my last essay about why we felt so comfortable sharing so many things. It appears that I know my e-pal quite well!"

This paranoid student was converted to a technophile easily by mid-semester, and her commitment to the e-pal program continues to this
day! Class discussions often focused around the development of this "relationship," and students teased the phobic individual about her now "philic" interaction with the computer. Two other students discussed their e-pals in class or in their papers with the remainder merely fulfilling the assignment.

One female student became scared when her male e-pal suggested that they "get crazy" online. She thought he wanted cybersex, reported this in her weekly essay, and then came to talk to the professor about the incident. Both professors using this e-pal assignment became involved in troubleshooting (or clarifying) this situation as university policies stress the proper use of the technology. Professor intervention resulted in an explanation quite different than that which was assumed, and apologies between students were exchanged. However, the relationship suffered, and the students in question did not exchange messages as frequently nor as openly as before the incident.

Professor observations on both campuses involved somewhat different content. The professor at the Northwest university saw firsthand the transformation from techno-phobic and guarded to techno-philic among the students in the computer lab and in the weekly response essays. Free-wheeling conversation in the computer labs often dealt with e-pal relationships, frequency of interchanges, and questions about the future of these relationships. With a more traditionally-
formatted classroom situation at this university, a closer monitoring of the experiment was feasible.

At the Midwest university with the course being taught online, the professor's observations (exchanged in an email with the professor in the Northwest) were based upon student reports and online conversations with students regarding the experiment. The Midwest professor saw the e-pal experiment as a replication of making friends in the FTF world . . . some work and some don't. The whole experiment was received in the Midwest with responses varying from immersion to resistiveness to disinterest. Disclosure varied and often didn't match between e-pal partners. One Northwest student became quite disclosive to a more resistive Midwest student. The result was a sort of negative "strangers on a train" effect that affronted the Midwest student. A concern over response latency was noted by the Midwest students as well. With the mismatch between a highly technologically-engaged university campus and a mildly technologically-resistant university campus, the response latency was to be expected given the different levels of computer literacy and acceptance. The online students were much more likely to be on the computer, feel more comfortable using the different computer functions, and be speedier in using the keyboard when replying to e-mail.

Perceptions noted by the Midwest students regarding the Northwest students also focused on differences, not similarities. For example, one of the brighter students in the Midwest reported to the professor that the
Northwest student with whom she corresponded evidenced a "distant conceitedness." Based solely upon textual messaging, this student perceived the socio-economic disparity between the two student groups without direct comment to that effect!

Qualitative results from the post-seminar survey produced some intriguing comments that seek to characterize and explain the penchant of some students to get involved online while others retain a distance. One student stated that "it [the e-pal experience] changed my perception of email because I was receiving a euphoria from words"... words that provided a "timely and more precise measurement of the moment."

Scholars such as Mumford have described writing as "the mere breath of... mind" (1966, p. 74), which may explain why screen text on the computer may appear to be more current and precise when it is actually one's mind breathing! Oddly enough, this student did not seek to continue communication post-experiment and described it as not really her forte. The experiment's effect was noted, however, in making her more interested "in talking to computer strangers."

Though nonverbal communication has been viewed as singularly limited in the online environment even with the use of emoticons and textual variations, one student applied intuition in the following way to help her understand her e-pal:
"I suppose that I miss the nonverbal up to a point, but Jack and I compensate for it by using emoticons (just happy and sad faces) and exclamation points, etc. Other things I have picked up on, such as if he is really excited or mad he will spell a lot of words wrong."

This student classified herself as a big fan at the conclusion of the experiment, noting that she had been able "to get to know someone quite intimately over e-mail," viewing this connection as a "safe relationship."

The level of intimacy in this relationship defies immediate understanding as the student writes in her survey responses:

"We both have had to send people we are dating out of the room when we are checking e-mail b/c we know each other will write back about them."

The male student classified his exchanges with his e-pals as "formally open", and he expected to retain contact with only one e-pal following the conclusion of the experiment. With the e-pals where correspondence lagged, the male student described the initial exchanges as "dry" and dissuasive. "Because the medium is so impersonal, it was easy to stop communicating with no strings attached." In this situation, it is apparent that the "breathing of one's mind" entrancement did not occur, and relationships online were not totally engaging.

A somewhat reticent female student drew conclusions from the textual exchanges with her e-pals that discouraged her. FTF impressions are important to students when they decide to communicate or exchange disclosive messages. Without the FTF nonverbal information, this
particular student was freely drawing assumptions based upon textual input alone. For example, she found one e-pal "extremely co-dependent" because he was indecisive about life’s fundamentals and forgetful. Commentary from this male student about helping his friends all the time and the importance of having friends was interpreted further as supporting this co-dependent orientation. She took offense as well when he described one of his friends as “bi-sexual”, noting that he could just as easily have described the person as a friend, leaving off the bi-sexual clarification. Thus, singular words and phrases in messages were sometimes the focus of the interaction, and the total message or picture of the individual was lost in the process.

In general, the students who participated in this e-pal experiment were thoughtful, willing though guarded, and processed the experiment in depth as a major moment in their lives. The whole group of students in the traditional class bonded and formed a supportive, interactive community. Often in the computer lab portion of the class, the professor saw the hypertext-like immediacy of online communication replicated between the students offline. Suggestions, comments, jokes, and the normal bonding type of communication kept the computer lab work lively and engaging . . . just as lively and engaging as the online interchanges were for many of the e-pal connections! Normal classroom rituals seemed to be suspended without anyone noting or caring that they were
gone. This openness and immediacy effect was carried over to the student evaluations, which were glowing and complimentary.

Conclusions

This experiment in interpersonal communication provided a small window onto the world of computer-mediated communication. Though case studies do not seek to offer generalized findings about the phenomenon that they investigate, an understanding of the seminar's interactions and the e-pal experience can be reached through application of several theories of human communication, human learning processes, and relationship building. The question that guided this study at the outset was: Would the power of interpersonal contact, even with unknown peers, influence students to abandon their technophobia, level of skepticism, or current computer-use patterns? The data from this study reveal that indeed this change was possible, though most noticeable in students who were openly guarded or techno-phobic at the start. Students who by self-report described themselves as "open" did not evidence any changes in their computer communication behaviors during the 15-week experiment. Persuasion theory suggests that a hostile or negative audience is easier to convert than one that is neutral (Trenholm, 1989). What did change overall for the students in the Northwest was their bonding to one another throughout the semester AND the development of a community that focused on a common interest
in computer communication. The spoken language function of linking (Dance & Larson, 1976) was borne out in this experiment, reinforcing the belief that humans seek to link and bond, reducing the chaos in their surroundings conjunctively.

The growing understanding of the value of personal influence both in the interpersonal world and in the world of organizations is supported in this study. Personal influence, as a developing model for public relations, is not a new concept on the research landscape. Katz and Lazarsfeld (1955) in researching voting choices by women discovered that personal contact (e.g., with husbands or friends) and this input had a greater impact than any media messaging. In this current research, the impact of perceived interpersonal contact and messaging influenced the students more than any professorial mandate, syllabus requirement, or graded exercise. Given the freedom to interact or not to interact via the computer with peers at a distance, the majority of students chose to interact and analyze the process. Though risks were taken and recognized as such, any difficulties that arose were dealt with through more in-depth communication between those involved. Personae may have been adopted that were dissimilar to the real personae, but no student mentioned this as a concern or problem. The "real connections" or "real relationships" that developed appear to develop around honest, open communication that fostered trust and was viewed as sincerity. Micro-analyzing word messages at the start of the experiment led to
dissatisfied communicants and fizzled relationship overtures. Personal biases toward specific phrasing existed in the online world which amounted to personal stereotyping. This predilection toward stereotyping given the only evidence one can have of an "online other" inhibited relationship development in one case. . . much as stereotyping would inhibit FTF relationship building. In another case, a resident fear was awakened by a particular phrasing that was suggestive, and this relationship suffered as well. Thus the power of spoken language (Dance & Larson, 1976) is demonstrated in this experiment, where the screen text of online messaging accounts for words spoken in one's mind.

Bandura's social learning theory is aptly tested in this experiment, stressing again the effectiveness of group learning, appropriate feedback, and constant reinforcement for new behaviors. Experiential learning in this technologically-rich environment seems to be almost a mandate, especially for reticent or less technologically literate individuals. Minimal structuring of this experiment contributed to the outcome, providing room for creativity and intuition.

Overall, this case study of an e-pal experiment suggests that negative assumptions and orientations toward computer technology for communication purposes can be allayed or altered in a one-to-one peer relationship experiment. Necessary characteristics for the success of this experiment included little structuring, little to no professorial intervention or constraints, individual selection of in-depth partners, an
offline community that meets to discuss and review the experiment in process, and willingness on the part of the subjects to just "see what happens." Often in university students who have a medium to low tolerance for ambiguity (Cook, 1997) in the online world, this last characteristic may be the most difficult to find. So it may seem that in promising to introduce students to virtual friendships, the computer as surrogate introducer may by association become the friend of previous technophobes.
References


Appendix A

Post-Experiment Survey Questions

1. What were your expectations at the outset of the e-pal project?

2. What did you say in your profile about yourself that was sent to the *** for matching purposes? Was it disclosive, terse, guarded, etc?

3. How many students were you matched with? Did they all continue communication throughout the e-pal project?

4. Did your expectations change during the e-pal experience? If so, how? Why (or why not) would you suppose this happened?

5. Did you miss the nonverbal communication in this medium? Did you compensate for this missing element? If so, how?

6. Relate here any pertinent experiences you had with your e-pals that shaped your feelings or impressions of this medium.


8. How much time did you spend communicating with your e-pals? What topics did you cover?

9. How well do you feel that you know your e-pal? Did you make contact outside of the computer communication, e.g., phone calls, etc?

10. Will you stay in touch with your e-pals now that class is over? Why or why not?
Appendix B

Sample of Individual Profiles from the Northwest students

"My name is *******. I'm 22 years old and am a 2\textsuperscript{nd} year senior at Gonzaga University. I will be graduating this December with a degree in Public Relations and Journalism and I hope to go on to law school next fall. I enjoy various outdoor activities and many other things. To find out more contact me again."

"my name is *******, I am 21 years old. I am an art major and that is about all I can think of."

"My name is ********** and I am a senior at Gonzaga majoring in Public Relations with a double minor in psychology and advertising. I work at a small PR agency in Spokane and I really like it. I have lived in Spokane for all of my life, but I have travelled [sic] a lot and that is something I like to do. I usually like to get to know people first and then disclose information about myself. I am trying to decide what to do with my life after graduation so I am looking into graduate schools. I actually keep in touch with quite a few people over e-mail, but I have always met them first, so it will be kind of strange totally getting to know someone over e-mail."
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