Electronic Mail at Carroll College: Factors Which Contribute to Use and Satisfaction

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Electronic Mail at Carroll College:
Factors Which Contribute to
Use and Satisfaction

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This thesis for honors recognition has been approved for the Department of Communication Studies.

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Abstract

This thesis investigates the ways in which electronic mail (e-mail) has affected communication at Carroll College, a small undergraduate institution in Helena, Montana, and the level of satisfaction with this mode of communication among 21 randomly selected employees. The study has three objectives: to determine whether prior research is applicable to the environment at Carroll College; to determine whether the installation of e-mail on the Carroll campus in 1991 has improved the efficiency of communication, providing a greater opportunity for personal involvement, and increasing satisfaction among employees; and to make recommendations for further improvement in communication both on and off campus.

Two major points emerging from the interviews pertain to what factors contribute to e-mail use and how e-mail contributes to user satisfaction at Carroll College. Recommendations are made in six major areas: on-going training; the effect on people who do not have access to e-mail; possible effects of providing e-mail to students; overuse of the system; concerns about personal messages; and system security. Analysis of the responses reveals some important consideration either not identified in or contrary to prior research.
Chapter 1

Introduction and Rationale

Computer-based communication networks have changed the way individuals communicate in and between organizations. As an alternative to sending letters and memos, making telephone calls, or scheduling face-to-face meetings, workers can conduct business from their own offices using a personal computer equipped with communication software. One form of this computer-based communication is known as electronic mail (e-mail). Lewis (1991) defines electronic mail as an "asynchronous (occurring at different times) communication channel allowing instantaneous delivery of messages to distant locations via the computer" (p. 202). While the distance between most message senders and receivers at Carroll College is not great, the asynchronous aspect of e-mail, along with the ability to contact colleagues at locations other than Carroll, has made e-mail a popular form of communication on campus.

Carroll College is a Catholic liberal arts institution located in Helena, Montana. Founded in 1909, the college is a small community of 1400
students, 93 full-time faculty members, 40 adjunct faculty members, and approximately 125 administrators and staff members. Because of the size of the school, students, faculty, and staff members at Carroll are frequently in contact with one another. Carroll prides itself on the feeling of community among students, faculty, and staff, and encourages open communication between all groups on campus.

E-mail has been in place on the Carroll College campus since 1991. Seven buildings on campus (all except the Corette Library, the Physical Education (PE) Center, and the Commons) were linked into the system in the fall of 1991. The library building was tied into the system in the summer of 1993. The PE Center and the Commons are not yet connected by the fiber optic cable network; users in these buildings send and receive their e-mail messages through the use of a computer modem.

Some faculty and staff members do not have computers linked to the e-mail network, either because of the system's limitations or because these people have chosen not to be linked to the system. However, these persons have e-mail addresses and can receive e-mail messages through the campus mail. Their e-mail messages are printed each day and copies are placed in their mailboxes in O'Connell Hall. Other faculty and staff members, primarily
facilities management workers and adjunct faculty members, have no e-mail addresses and receive messages only when someone makes copies for them.

Opinions about e-mail as a communication medium at Carroll College are mixed. Many e-mail users think that this technology enhances communication by reducing the need for time-consuming and unnecessary meetings or repeated telephone calls, as well as by giving them the ability to communicate with others at distant locations. These same individuals indicate that e-mail reinforces a feeling of community by providing one more means of communicating with others in the organization. Other people at Carroll are less enthusiastic about e-mail, saying that this type of communication is not necessary on a campus as small as Carroll. They believe that e-mail eliminates important non-verbal cues and relationship-building which occur when people meet face-to-face or talk on the telephone.

While there are varying opinions regarding the value of e-mail, the fact is that e-mail is a major source of communication at Carroll College. Many people rely on the system to communicate with others quickly and efficiently. In fact, e-mail users at Carroll report receiving between five and 10 e-mail messages a day, many of which they indicate they would not have received before e-mail was installed. As some users assert, those who do not receive
e-mail are at a disadvantage.

To discern the attitudes and opinions of e-mail users at Carroll College, ethnographic interviews were conducted with 21 Carroll College faculty and staff members. Participants were asked to express their thoughts about different aspects of e-mail, guided only by general questions, as opposed to asking them to respond to a structured survey form. This format gave the researcher the opportunity to discover these individual’s viewpoints; this is important because, as Anderson (1987) writes, "If one investigates social action with a preconceived set of interpretive templates, the member’s viewpoint will be lost" (p. 246). Individual participants' input is the essence of this study.

The interviews were conducted to discover whether the attitudes of e-mail users at Carroll and these individual’s use of the system concur with the findings of earlier research. The connection between attitudes and use is important because previous studies have shown that a positive attitude about e-mail leads to increased use of the medium (Hunter & Allen, 1992). Sullivan (1993) finds that "feelings of participation are closely related to the use of the e-mail system" and that "participation in an organization is related to job satisfaction and organizational productivity" (p. 16). Carroll College
employees who were interviewed indicate a strong relationship between attitude and use.

This paper reports on the attitudes of this group of e-mail users, what factors contribute to their use of e-mail, and how use of e-mail affects the user's satisfaction with organizational communication here at Carroll. By recognizing these responses, faculty, administrators, and staff members at Carroll College can gain insights into ways in which the e-mail system can be used to benefit everyone at Carroll.
Chapter 2

Literature Review

In recent years, communication scholars have looked at various ways in which e-mail affects organizational communication. These scholars have addressed various issues including how people learn to use e-mail, whether the participation of others affects a person’s decision to use e-mail, and whether use of e-mail leads to increased satisfaction with communication in the workplace. Other questions addressed in the research concern whether e-mail has a social aspect, how e-mail compares to other forms of communication, and whether students would benefit by having access to e-mail in the college setting.

The Learning Process

In order for e-mail to be an effective communication tool, it is important that workers learn to use and accept this technology. Hunter and Allen (1992) indicate that the quality of the learning experience may predict how easily a person will adapt to the use of e-mail: "A novice with a negative
learning experience describes that experience in terms of 'problems' and 'frustrations' which the novice with a positive experience never notices" (p. 258). In addition, previous computer experience can predict the user's comfort with learning the new technology. Schmitz and Fulk (1991) state that "both keyboard skills and computer experience are significant antecedents to [a user's perception of] electronic mail" (p. 513). According to this research, people with prior computer experience should find it easier to master the skills necessary for using e-mail.

Participation

When previous computer skills are combined with the knowledge that co-workers use e-mail successfully, a person will be more inclined to use it, too. Hunter and Allen (1992) note that the amount of previous computer experience and the influence of others in the workplace "will predict . . . e-mail usefulness and e-mail use" for a new user (p. 271). When e-mail becomes an important aspect of office communication, people are encouraged by their previous knowledge as well as by their co-workers to learn the new technology.

E-mail can give people who are reluctant to speak out in face-to-face
meetings a chance to communicate more openly. According to Hawisher and Moran (1993), "in writing to a screen, writers may at times lose the sense of an audience, become self-absorbed, and lose the constraints and inhibitions that the imagined audience provides" (p. 631). Sproull and Kiesler (1991) note that "people are less shy and more playful in electronic discussions; they also express more opinions and ideas and vent more emotion" (p. 121). Thus, e-mail could enhance the satisfaction of shy or inhibited people by increasing their ability to share ideas and opinions.

However, this ability to express oneself easily can contribute to an excess of messages transmitted by e-mail. According to Hawisher and Moran (1993), e-mail can provide the opportunity for so much communication that the volume can become unmanageable. One person cited in their study "stopped reading his [e-mail] until his correspondents dropped off to a manageable few" (p. 635). This inability to handle a high volume could influence some people to avoid using e-mail.

Satisfaction

For those people to whom the technology is available, e-mail "could increase the likelihood that opinions in groups are sampled more widely"
(Kiesler, Siegel, & McGuire, 1984, p. 1126). Sullivan (1993) states that Members who are lower on the organizational hierarchy will tend to evaluate their use of e-mail as giving them a chance to participate in decisions, even though they make mostly routine decisions. Hence, they will tend to associate their use of the e-mail with having a voice in the general decision making of the department (pp. 6-7).

When people feel they have a voice in organizational activities, their feelings of inclusion are enhanced.

Satisfaction is also increased when people perceive personal benefit from use of the system. According to research by Hunter and Allen (1992), two factors are necessary for personal benefit: enlistment, or "the ability to benefit socially by having friends and significant others using the same system"; and utility, which refers to an individual’s ability to use e-mail "as a tool for successfully completing assignments" (p. 263). If the system enhances each individuals’ opportunities to perform their jobs well, as well as increases their opportunities for contact with friends, e-mail can contribute to satisfaction with communication at Carroll College.
Utility

The technical characteristics of e-mail examined in research by Huff, Sproull, and Kiesler (1989) indicate ways in which e-mail can help people perform their jobs: "computer mail is asynchronous, text based, and fast . . . these characteristics minimize the barriers that time and distance place on communication in an organization and also allow the easy archiving of information sent and received" (pp. 1374-1375). The ability to send and receive information quickly and to be able to retrieve that information easily once it is stored is an important aspect of job performance.

Social Aspects of E-mail

Participation in e-mail may enhance interpersonal relationships, leading to increased satisfaction with the work situation. In Robertson and Armstrong (1993), "Foster and Flynn (1984) reported that General Motors’ implementation of e-mail resulted in more people 'getting to know someone' which indicates that e-mail does have some measure of social presence" (p. 4). A study by Walther, reported in Swanson and Walther (1993), indicates that "since users can contemplate, delay, and edit their replies, [e-mail] groups become more affectionate and sociable than 'traditional' groups" (p. 5). This
ability to consider replies before sending them can lead to fewer misunderstandings in the workplace.

While relaying work-related messages is an important aspect of e-mail, the system is also used to transmit socially-oriented information. Research by Sproull and Kiesler (1986) indicates that "forty percent of all message traffic was totally unrelated to work, e.g., movie reviews, notices about astronomy club meetings, recipes, advice about where to obtain a second mortgage" (p. 1508). Again, those people who use e-mail could experience a greater connection to others in the community because they have another medium (e-mail) with which to communicate, especially on topics which are not related to work.

E-mail Versus Other Forms of Communication

Research suggests that e-mail has several advantages over other forms of communication (Huff, et al., 1989; Swanson & Walther, 1993). As Swanson and Walter (1993) report,

E-mail carries messages fast, traverses distance, and does not require the simultaneous attendance of message senders and receivers (as do the telephone and videoconference). This makes messaging more flexible,
and reduces 'shadow functions'—time lost to redialing, waiting, mail
delivery, etc. (p. 5).

Finding people in their offices can be difficult. E-mail enables people to send
and receive communication when they have the time to attend to the messages
rather than when the telephone rings or a visitor comes to their door.

**Students and E-mail**

Hawisher and Moran (1993) cite the benefits of allowing students
access to campus e-mail systems. Collaborative writing could be facilitated by
"dissolving the temporal and spatial boundaries of the conventional
classroom." In this environment, students would "work with one another,
. . . use e-mail as a research tool," and interact with their instructors (p. 633).
However, these researchers warn that teachers could become overwhelmed by
the amount of correspondence generated by e-mail:

Over the years, [teachers] have developed conventions that limit our
contact with students and make our relationships manageable . . . with
e-mail these conventions simply do not work. [Teachers] may face the
possibility that [they] will be too well connected, and with too many
people (p. 636).
Hawisher and Moran (1993) caution that the volume of e-mail could also be detrimental to students:

Students may be overwhelmed as well. . . a teacher can, with a keystroke or two, send multiple copies of an electronic note to an entire class. . . . Students, who already complain of too much printed reading matter in their traditional classes, will have a hard time keeping up with new demands on their reading time with the addition of e-mail (p. 637).

This research suggests that colleges should carefully consider both the positive and negative aspects of e-mail before making the technology available to students.

In general, this research suggests that e-mail has a positive effect on organizational communication. E-mail allows people an increased opportunity to express ideas and opinions, and can enhance feelings of belonging to a larger community. E-mail also has some distinct advantages over other forms of communication, as well as some limitations. One issue which emerged during the Carroll interviews is not addressed in prior research: whether the lack of access to e-mail negatively affects certain people who are not on the system. This question is addressed in Chapter 4, Discussion of Findings, in this thesis.
Chapter 3

Methods

In order to gain insight into the attitudes and opinions of e-mail users at Carroll College, interviews were conducted with 21 faculty and staff members between January 14 and February 2, 1994. The sample of e-mail users at Carroll was carefully selected using standard random sampling techniques as described below. Interviews were scheduled with the selected persons by sending an e-mail message to each, and following up with telephone calls. Ethnographic interviews were conducted with each person, during which general questions were asked only when necessary to facilitate the conversation. All of the interviews were recorded on audio tape.

After the interviews were conducted, transcripts were typed of each interview. These 301 pages of conversation were organized into two general categories with five subcategories under each. Conclusions and recommendations organized according to these ten divisions are found in Chapter 5. The findings in Chapter 4 are presented according to the issues addressed and questions asked during the interviews.
Sample Selection Methods

Eighteen of these people to be interviewed were chosen by the following method: Using the departmental listing in the back of the Fall 1993 edition of the Carroll College Faculty and Staff Directory, the researcher selected every 10th person. Adjunct faculty members were excluded from the selection because they do not have e-mail addresses and also because the researcher assumed it would be difficult to schedule interviews with these individuals. The departmental listing was used rather than the alphabetical listing so that a number of departments would be represented in the sample. Every tenth person was chosen because the group from which the sample was chosen totalled 197 people and a sample size of around 20 was desired.

This initial selection produced 11 names of administrators or staff persons and nine names of faculty members. At this point, the names of those selected who have no e-mail addresses were eliminated. It is important to note that not everyone who has an e-mail address has a computer. A number of users receive printed e-mail messages through the mail and respond to those messages by means other than e-mail.

After eliminating the names of those with no e-mail addresses, a sample of nine administrators or staff persons and nine faculty members was obtained.
One additional name under each of these two categories was selected by random drawing from the names of the persons with e-mail addresses in each department that was not represented in the initial sampling. The sample then included 10 administrators and staff members and 10 faculty members for a total of 20 persons. The group sampled included 104 staff or administration members and 93 faculty members.

The sample also includes these groups:

- five faculty or staff members who have been at Carroll fewer than two years;
- 10 men and 10 women;
- department chairs as well as professors;
- upper administrators as well as middle managers and clerical workers.

In addition to the initial sample of 20 people, the researcher hoped to interview three other individuals: an employee of the information systems department, a faculty member who is currently on sabbatical, and an employee of the facilities management department.
Scheduling

An e-mail message which briefly explained the project and asked for an interview was sent to each of the 20 people initially chosen. From this initial message and follow-up telephone calls, interviews were scheduled with all but three people. Two of these people declined to be interviewed because of their schedules. The third declined because she does not have e-mail and she had transferred my request to another person in her department who uses e-mail. The interview was then scheduled with the person to whom the request had been routed.

In addition to the initial group, an interview was scheduled with an employee of the information systems department at Carroll to discover the history and the current status of Carroll’s e-mail system. An interview was also scheduled with a faculty member who is currently on sabbatical. This person is using e-mail extensively to maintain communication with Carroll during his absence from the college. An interview was scheduled with an employee of the facilities management department to discover how e-mail messages are disseminated to the people in that department, most of whom have no computers or e-mail addresses. These three people increased the number of interviews scheduled to 21.
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Interview Format

A total of 21 ethnographic interviews were conducted, lasting between 30 and 60 minutes each. Each participant signed a release form granting permission for tape recording the interview as well as for subsequent use of the information gained in preparing the thesis. This release also assured each participant that the data collected would be used anonymously. A copy of the release form is found in Appendix A.

The interviews were conducted at or near the participant’s office or work area. After stating the purpose of the study, and asking specific questions about the person’s status at Carroll College (job title and department, supervisory status, years at the college), the following questions concerning the use of e-mail were asked only when necessary to facilitate the interview.

General Questions

These questions were developed after studying the literature on previous research and considering the issues involved in e-mail use at Carroll College. Care was taken to ensure that questions were phrased as neutrally as possible.

- What was your computer experience prior to using the e-mail
system here at Carroll?

- If you were at Carroll prior to the use of e-mail, what did you think when you heard e-mail was to be installed? If you were not at Carroll prior to the use of e-mail, what did you think when you heard that the system was in place?

- What do you think of e-mail compared to face-to-face encounters?

- What do you think about e-mail compared to using the telephone?

- Do you think e-mail has affected meetings?

- Do you think e-mail has affected the use of notes and memos?

- Do you think the e-mail system has a social aspect?

- Are you required to use e-mail as a part of your job?

- How often do you use it?

- What do you think about the types of messages received on e-mail?

- How did you learn to use the e-mail system?

- Do you think the amount of communication you receive has changed because of e-mail?
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- How does e-mail affect your ability to do your job?
- Should the students have e-mail?
- What about people who are not on the system?
- Is there anything you would change about the system if you could?

Classification of the Responses

Initial analysis of the responses revealed ten areas of discussion which were then grouped into two broader categories. These divisions are summarized here and are discussed in greater detail in Chapter 5, Conclusions and Recommendations.

Factors Which Contribute to E-mail Use

One of the two major categories encompassed factors which contribute to e-mail use at Carroll College. These factors include prior experience, training, ease of use, co-worker use, and utility.

Prior Experience. As seen in the prior research, the responses at Carroll College indicate that prior experience has a major effect on the ease of learning and rate of continued use.
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**Training.** Participants also confirmed prior research that when and how the person learned to use e-mail has affected how much they use the system.

**Ease of use.** The participants’ perceptions of how easy the system is to use affect how often and for what purposes they access the system.

**Co-worker use.** People use the e-mail system at Carroll College because colleagues use it; e-mail messages are a major source of information from others on campus.

**Utility.** People at Carroll College also use e-mail to assist them in doing their jobs by soliciting, contributing, and gaining information. The issue of whether e-mail use is a requirement at Carroll was discussed.

**E-mail’s Effect on User Satisfaction**

The second major category concerned e-mail’s effect on user satisfaction. The factors which affect the participants’ satisfaction included e-mail’s effect on the amount of communication, the social aspect of e-mail, the perception of personal benefit from use of the system, concerns about people who are not included on the system, and the security of the e-mail network.
Amount of Communication. Participants related that the amount of communication they send and receive has changed because of e-mail. These responses indicated both the number of messages and the manner in which they are received (i.e., e-mail as opposed to paper). Many of the Carroll participants indicate that reduction in the use of paper on campus is one of e-mail's greatest benefits.

Social Aspect. Many of the messages placed on the e-mail system at Carroll College are of a social nature. Respondents discussed the social messages which occur on e-mail and the effect of those messages on a feeling of community. User satisfaction varied according to the type of message received (notices of community events, reports of personal concerns, items for sale).

Personal Benefit. The participants' sense of personal benefit affected their satisfaction with e-mail and with communication at Carroll College. Participants talked about their satisfaction with the ability to contact others socially as well as ways in which e-mail helps them perform their jobs.

People not on the system. Participants shared their sense of the effect on people who are not on the system, such as students, faculty, and
staff members who have no access to the system at this time. In some cases, user satisfaction was influenced by whether everyone has equal access to the system.

Security. A number of participants talked about their comfort level with system security. These people discussed how their beliefs about the security of the system affects their satisfaction with e-mail.
Chapter 4

Discussion of Findings

During the interviews, participants discussed a number of issues concerning e-mail. These issues included topics which emerged during the conversation as well as responses to questions asked by the researcher. This chapter summarizes these responses and provides individual comments made during the interviews. Because unstructured interviews were conducted for this study, not all participants discussed the same topics, or, when they did discuss certain topics, their opinions were not conclusive. However, to help provide a broad perspective on the overall attitudes and opinions of the participants in the study, similar responses were grouped together.

How Does E-mail Compare to Other Forms of Communication?

According to Swanson and Walther (1993), e-mail has several advantages over other forms of communication: it is fast, it reduces the time
Discussion of Findings

spent in attempting to reach others in person or by phone, and both parties do not have to be present for the message to be transferred. In order to assess the validity of this research, Carroll participants were asked whether they think the use of e-mail affects face-to-face encounters, use of the telephone, the number of meetings, or the use of paper for notes and memos.

Face-to-Face Encounters

When the opinions of the 19 direct users are sorted into general categories concerning the effect of e-mail on face-to-face encounters, 10 prefer e-mail in many situations, but note that there are times when face-to-face conversations are more appropriate; five prefer talking face-to-face with people when it is possible, but realize that there are times when it is difficult to reach people; two indicated that e-mail has not changed whether they speak with people personally; and two did not address the issue during the interview.

Participants indicate that e-mail is used more appropriately at some times than others. For instance, three people indicate that e-mail saves time when compared with face-to-face or telephone conversations. As one participant says,
A lot of times you do a lot of visiting. You have a message to give somebody but you also want to visit with them a little bit. But sometimes you don’t—you’ve got too much to do and you don’t want to go through the "hi, how are ya, how ya doin, that’s good, what’s new, how was your weekend, bla bla bla bla bla. By the way, I need you to da da da da da da da da da. Ok, well see you later, bye, bye." And you waste five-ten, half an hour, doing this stuff. Here, you type it, you send it, you keep going. So it’s nice to have that option (1). [The numbers 1 through 21 in parentheses following quotations have been assigned to identify individual interviews. This numbering system helps ensure confidentiality while recognizing that the quotations come from different sources.]

Two other participants responded in a similar manner, indicating that e-mail can be a real timesaver because it eliminates the need for social conventions such as small talk.

On a more serious note, five participants indicated a preference for face-to-face meetings, especially when the discussion may be over a sensitive issue:

I think the more delicate the situation, the more I’d definitely want to
talk face-to-face than handle it over e-mail. And I don't want to handle any conflicts over e-mail. I'd rather confront them head-on than use the e-mail system (2).

One reason this group of people preferred face-to-face meetings is that they can read the non-verbal cues which are missing in e-mail messages:

I think that there's a danger in maybe sometimes you can have all kinds of little disputes on e-mail—if people were having to sit down face to face, those disputes would probably be avoided, because there's something that's missing in e-mail, and that is the non-verbal gestures. With e-mail, like any other piece of correspondence, once it's written, it's kind of locked, so some people tend to stand behind their written word rather than in a spoken sense where you can compromise, negotiate, things like that (10).

These participants warn that important aspects of the dialogue may be lost when people cannot look at each other or hear the other person's voice.

An issue emerged during the interviews that was not addressed in the prior research—three participants indicate that there are times when people use e-mail to avoid speaking with someone in person, whether face-to-face or over the telephone. As one person says,
Instead of meeting face to face 'cause you don't want [a] confrontation, you get out of it by doing an e-mail. . . . I'm a feeling person and I know that, especially if somebody catches me off guard, it's really difficult for me to control my emotions, whether they're happy, sad, you name it . . . so sometimes if I know it might be a confrontational issue, I'll choose to ease into it first with e-mail, and I don't know if many people would admit to doing that (7).

Another of these three indicates that e-mail gives them some cooling-off time when they are involved in a dispute:

When you see what's coming out of your mouth you edit it a little bit. I mean it's easier to kind of be a jerk on the phone than it is when you see it in words on the screen and know you're going to send it to somebody. . . . I will admit I've done this, I've typed out e-mail to somebody and been kind of sharp with them and just seeing it on the screen then I feel better and then I can erase it and put it in decent words (12).

The time it takes to compose and edit e-mail can provide a buffer between people in dispute that unexpected conversations over the telephone or in person may not afford.
E-mail can also provide a buffer which makes communication easier for people who are uncomfortable in face-to-face meetings. As research by Sproull and Kiesler (1991) indicates, "people are less shy and more playful in electronic discussions; they also express more opinions and ideas and vent more emotion" (p. 121). This theory is supported by comments from one of the Carroll participants:

I communicate more frequently with people because of e-mail than I would otherwise. I might say, oh, I won't bother to call them, but I will go ahead and send an e-mail message. . . because I'm shy by nature . . . and if I don't know someone well, I can send them an e-mail message much more easily than I can call them up and talk to them or go and see them (3).

This same person also refers to the "playful" aspect of e-mail:

There somehow is a little more personality attached to e-mail than there is when you write it on paper. People have been funny with their messages on e-mail whereas I don't think we would have been as humorous, as light-hearted so to speak, if it had been on paper (3).

Another participant relates how e-mail has provided a forum for expressing opinions that might not be available in a face-to-face situation:
Some of the people have done little essays or maybe you would call them opinion columns through e-mail [to] say this is what I'm thinking and this is how I feel about this particular topic. Perhaps that's a forum that they normally wouldn't have had... they're not going to stand up in the coffee room and read their essay on how they feel about ROTC coming onto the campus (5).

In these cases, e-mail has created opportunities for individuals to express their opinions.

A clerical worker prefers receiving instructions by e-mail rather than relying on memory: "I'd rather have their instructions down in writing and get hard copy of it than have them tell me three or four things and then try to remember that when I get back to the office" (5). E-mail allows this worker to respond to instructions at a time and place which are convenient.

Telephone

On the Carroll College campus, people sometimes find it difficult to reach others by telephone. Of the 19 direct users interviewed, 15 indicate that the ability to leave messages for others is a very positive aspect of e-mail. Two people say they always prefer to use the telephone because they think the
telephone is more "human." Two people did not directly address this issue.

Although some people acknowledge that the recently installed voice mail system may replace some of the e-mail messages they send, for a number of different reasons, participants use the e-mail system in preference to the telephone. One staff person uses e-mail as a matter of courtesy:

I'm always leery to use the phone to call faculty for fear of interrupting them--maybe they have a student in their office--maybe they're rushing off to class or they're trying to prepare for class . . . I don't want to interrupt them. Often it's not something that demands an immediate response --they don't need to be interrupted and I'd rather ask them and they can respond at their leisure (12).

Others echo these feelings and indicated that it is often easier to leave e-mail messages for both faculty and staff people than it is to try to reach them in person or by telephone.

Others prefer e-mail to using the telephone when clarity of the message is an issue or when written documentation is necessary. As an employee who works with the international students states,

Spelling the names from the international community are often misunderstood . . . "s" and "f" all sound the same [over the telephone].
Or sometimes on the phone, to give an address in Japan is very difficult. Whereas if I write it out on e-mail and send it, it's so clear for [those who request the information] (14).

In addition to providing accurate information, the process of writing out requests for information on e-mail promotes accuracy as well. As a participant relates, "if they've got it on an e-mail, they know exactly what I want, and I'm more likely to get a much faster response that way than via the phone" (5).

As noted before, the newly installed voice mail system has changed the amount of e-mail use for some participants. Two people prefer voice mail to e-mail. They explain that voice mail is quicker and easier to use and that the people they communicate with tend to listen to their voice-mail messages more often than they look at their e-mail messages. Another person prefers voice mail because it seems more "human": "It's just one more step in intimacy that we don't have on e-mail. I've got the voice of somebody--I know there's a live person around" (13).

Meetings

Most participants (12 of the 19 direct users) think that nothing has
changed because of e-mail with respect to meetings. Six participants indicated that e-mail’s greatest advantage concerning meetings is in easing the process of setting up a meeting. They remarked that being able to send an e-mail message to committee members to ask about a convenient meeting time rather than placing numerous telephone calls was one of e-mail’s strongest benefits. As one participant noted,

If everyone had to call each other and figure out who couldn’t do what when, it is a joke—five people trying to get together in a meeting. If you do it on e-mail you say, "here’s the time I can do it"; somebody will say, "well I can’t do it at this time but I could do it at this time" and then the rest of us can answer to that. But otherwise, that person has to talk to all five people and that day didn’t work, then you have to go back and find out what date does work and then— it’s a joke, so you don’t do it. You have fewer opportunities to work it out, ’cause you can’t spend that much time trying to make that work. Or someone’s left out because you just couldn’t spend that much time calling everyone (14).

In contrast, one participant suggests that this same e-mail function makes meetings even more difficult to arrange:
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Perhaps it’s made meetings more difficult because, in the old days, you’d check around and get a time and you’d set a meeting and if somebody couldn’t make it, that was their problem. Now there seems to be an effort to have to find a time that everybody can get there and sometimes that just can’t happen. I’ve seen committees get stymied because they can’t get everybody together (16).

Three of the 19 participants also suggest that e-mail can replace or help prepare for meetings when only a single issue needs to be discussed.

Notes and Memos

Eighteen of the 19 direct users indicated that e-mail has had a positive effect on the use of paper for notes and memos for a variety of reasons. The 19th person copies many messages to forward to others in the department, and perceives that the amount of paper has not decreased due to e-mail.

The amount of paper used on campus is a major concern. As one person asserted, "that’s where e-mail really shines" because "we don’t have the printing costs, we don’t have flyers everywhere, we’re saving a tree’s life, hopefully, in the long run" (4). In a similar vein, another participant appreciates that e-mail reduces the amount of paper which is sent to offices
because, "especially in Helena, where there’s so little recycling that goes on, . . . it means that this is all generating garbage and so from that perspective I think e-mail is a very good addition. It means we’re not generating garbage" (18).

Three people believe that filing and retrieving documents is easier on e-mail than with conventional filing methods. As research by Huff, et al. (1989) notes, e-mail "allow[s] the easy archiving of information sent and received" (p. 1375). As one said,

[E-mail] has advantages because paper mail gets filed and placed and lost and not referred back to usually, or thrown away. E-mail is saved, takes no space, and one can review quickly messages of the past, one can review one’s answers to incoming mail that have been given in the past. It’s almost like a bulletin board, go back and see what you need to do. But if it’s on papers, envelopes, and things--it’s gone (11).

E-mail's electronic format allows users to reduce the amount of paper they handle and enables them to find electronically-filed documents quickly.

In addition to reducing the amount of paper they must handle, three participants say that e-mail also promotes staying in touch with friends in other places because, in the words of one person, "when you have to write a letter,
...stamp it, bring it to the post office, you tend to write much less" (10). E-mail provides these people with enhanced opportunities to communicate.

In summary, people at Carroll seem to concur with Swanson and Walther's findings concerning the benefits of e-mail regarding speed and convenience. Another user agrees with Sproull and Kiesler's research which says that e-mail allows people greater opportunities to express opinions. However, some issues Carroll users reported were not mentioned in the prior research, such as how e-mail is used to address sensitive topics, how e-mail can provide greater clarity in some instances, and how e-mail can reduce the amount of paper produced and subsequently turned into garbage.

Has E-mail Changed the Amount of Information Exchanged on Campus?

The research by Hawisher and Moran (1993) briefly addressed the issue of whether e-mail changes the amount of information available to people. Of the 21 Carroll College people interviewed, 10 indicated that e-mail has increased the amount of information exchanged at Carroll. These 10 divided into two groups: six who think the quantity of information has increased and four who believe that the quantity of information has stayed the same but that
e-mail has increased the availability of information. Five believe the amount of communication has not changed due to e-mail. The five participants who have been at Carroll fewer than two years have no basis from which to respond because they came to the college after e-mail was installed. One participant's answer was unclear concerning this issue.

Three of the participants observed that e-mail provides greater awareness of campus activities than when these notices were only posted or printed in the weekly newsletter, perhaps because, as one person relates,

I think some of us were selective in what we read and maybe weren't quite as informed as to what the Carroll community had to offer or what was going on, whereas with e-mail, since there is that responsibility to read it, I think we probably are more informed (4).

Because e-mail is available to most individuals in their work areas, they tend to read their e-mail messages, whereas before they might have failed to read posted or mailed notices.

Another does not think that e-mail has changed the amount of communication, but thinks that "we get it in a lot more timely fashion so that you hear about things and you’re aware of things right away" (12). Another person who thinks the quantity has remained about the same is pleased that
now communication comes in the form of e-mail rather than by paper.

Three people indicate that the amount of e-mail has increased because it is easier to communicate. As one says,

You can talk on the telephone and type an e-mail message at the same time and communicate to that person and get this person taken care of and read your e-mail while you’re talking to somebody or sitting there on hold waiting (15).

However, one of these three asserts that while there is more information being exchanged because of e-mail, very little of it pertains to him personally.

Another person cautions that e-mail can make sending messages too easy:

Now there’s a demand for you to always know--there’s a demand for you to always return. There’s people that call you--you don’t want to return their call and you have a right to do that. But [people say] "I left that message and I put it on e-mail, how is it that you won’t [return my message]?" I feel it’s very demanding (8).

The increase in communication also disturbs a participant who states that, "we’re bombarded with communication . . . I don’t know that it could get much more. If it did, I think I’d be on overload" (21).
No one at Carroll discussed an issue which Hawisher and Moran (1993) address: whether a person would stop using e-mail in order to reduce the amount of communication received. Ten of the 21 people interviewed believe that e-mail has increased communication in a beneficial manner. Five do not think e-mail has changed the amount of communication at all, and five have no experience on which to base a conclusion.

**Does E-mail Affect Your Ability to do Your Job?**

The technical characteristics of e-mail (asynchronous, text-based, and fast) examined in research by Huff, et al., (1989) and Swanson and Walther (1993) relate to responses given by Carroll participants. Of the 21 participants, 15 indicate that e-mail helps them do their jobs more efficiently. Comments on the subject range from "aids tremendously" (2) to "it's a small assistance" (20). Three people say that e-mail does not help them do their jobs. One person's opinion is mixed about this issue and two people did not discuss the matter.

Of the 15 who think that e-mail is of help, six say e-mail enhances their ability to do their jobs because response time is quicker than when a
memorandum is sent, time is not wasted trying to reach someone by telephone, and messages can be sent at times other than during business hours.

Two others indicate that e-mail makes some jobs easier by increasing the clarity of a message over spoken communication. As one participant says, "Sometimes there's that miscommunication--I'm not understanding what you really want from me, so e-mail helps me be more direct and it helps me really formulate what I'm thinking about and what I need" (5).

One person uses e-mail to ask others for more information, "it's easier to poll the faculty about something where if I didn't have e-mail I'd probably make a decision on my own" (12). Another person said e-mail helps because it is easy to scan through large numbers of messages and decide what to act upon first. In addition, e-mail assists professors by allowing them to order texts directly from their offices rather than by completing order forms and delivering or mailing them to the bookstore.

The professor on sabbatical noted that e-mail "is a blessing and a curse at the same time. A blessing because you keep up your contact--the curse is that it means that you're kind of not on sabbatical and you're subject to meetings and information, so it works both ways" (10).

Three professors indicated that e-mail does not help with their primary
responsibility--teaching-- although they thought that e-mail is of some assistance in helping them communicate about other duties. One said that it would help [professors] teach if they were able to communicate with their students on e-mail.

The majority of Carroll participants (15 of 21) think that e-mail helps them do their jobs, three think it does not help, one's opinion was mixed, and two did not respond.

Is E-mail Use an Official or a Personal Requirement?

None of the previous research consulted discusses whether organizations require people to use e-mail and how such a requirement might affect users. However, this topic came up in nearly half of the Carroll interviews. Nine of the 19 direct e-mail users indicate that while there is no formal requirement to use e-mail, there seems to be an expectation that e-mail is regularly read by people on campus because "there are messages you get by e-mail that you don't get elsewhere, so if you don't use e-mail, you don't know a number of events that are happening on campus" (16).

Four of these nine participants specifically indicate that they feel a
personal requirement to use e-mail. As one person says,

For me it’s a requirement to read and make sure if [someone on campus] has a message for me, that I think since we have e-mail, the expectation is that you at least read your mail. To me that’s a requirement, if nothing else just a courtesy (4).

While this expectation may be strong, there is no written requirement to use e-mail at Carroll College.

In fact, two people say that because some refuse to use the system, then there must be no requirement to use e-mail. As one says,

I know two instructors that don’t have computers--refused to have computers. And they get by. But I don’t know what they do. . . . I think their point is that it was an expense that the school couldn’t afford, so they don’t want to be any part of it. I think they’re losing out on some benefits, but they’ve got a good point (11).

To provide information to those who do not have computers, information systems personnel print copies of these individual’s messages daily and place them in their campus mailboxes.

But this does not mean that a person’s refusal to use e-mail is condoned. One of the two people who do not directly use e-mail spoke about
this issue, saying that there are consequences for those who do not use e-mail:

That's not the norm so people get mad at you. 'Oh, you don't read e-mail, do you. Oh, you never return messages, do you.' And the truth is, I do, I return messages all the time, but I don't return every one that makes a demand of me (8).

Of the 21 participants in the study, nine think there is some type of requirement to use e-mail, two stated that e-mail must not be a requirement because some people do not use it, one said people do not appreciate the fact that some do not use e-mail, and nine participants did not address this issue during their interviews.

How Did Employees at Carroll College Learn to Use E-mail?

Hunter and Allen (1992) indicate that one ingredient which may predict the use of e-mail is the quality of the learning experience. The majority of the participants (13 of the 19 who use the system directly) indicated that the e-mail system was easy to learn. Five of the participants remember going to a class to learn the system, five others had the opportunity to go to the class, but learned instead from a pamphlet which explained how to use the system, and
five others learned through one-on-one sessions given by someone from the information systems staff or a co-worker. Three participants could not remember how they learned to use the system. One person did not address the training issue.

Although most participants thought the system was easy to learn, it is important to note that two faculty members who came to Carroll within the past two years feel less comfortable with their learning process. One of these persons expresses frustration with the system:

I don’t know these things, I don’t know what the hell they all mean.
And I don’t have time to sit down and play with every one of them, whether it’s a command and everything that they get into or not, I don’t know. So I’m just kind of finding out bit by bit (17).

The second new faculty member echoed this frustration:

I think I’m following the procedure and it doesn’t give me what I want it to, or I’ve got this thing I want to do and I look in, for instance, the headings in some manual . . . and I just can’t seem to categorize my problem—where does this fit. So it hasn’t become that easy for me (9).

Both of these people stated that they had learned to use the e-mail during a quick one-on-one lesson from an information systems employee.
Their learning experience differed from those who were at Carroll when the e-mail system was installed. The early users, who had the opportunity to attend group training sessions, indicated that learning the system was easy. However, one of the new faculty members uses the system daily; the other said that "days go by [when] I don't even check the e-mail" (9).

While most of the study's participants learned to use e-mail somewhat easily and use e-mail frequently (at least once a week), the learning experience was less positive for the new faculty members, the findings do not support Hunter and Allen's conclusions that a positive learning experience contributes to easily adapting to the use of e-mail.

Does Prior Computer Experience Relate to E-mail Use?

As stated previously, Hunter and Allen (1992) indicate that "medium experience (e-mail experience, computer experience, and keyboard skills) . . . will predict . . . e-mail use" (p. 271). The responses given by the 21 Carroll College people interviewed sort into one of three categories concerning prior experience: nine stated they have "extensive" or "a lot of" computer experience, 10 indicated some use of a computer prior to e-mail, and two said
they have no hands-on computer experience.

Of the nine with extensive experience, six indicated that they look at or use the e-mail system "at least daily" or "several times a day." One person said, "Every time I come in I look to see if there’s anything" (18). Another user with extensive experience checks his e-mail three times daily and finds that "sometimes you don’t get any and that’s just as bad as going to your mailbox and finding it empty" (16). However, not everyone in this category seems this strongly attached to e-mail. One person reported looking at e-mail only every two or three days and another cautioned that "I think you can become an addict" (10). While most of the people with extensive computer experience use e-mail frequently, others use the system much less often.

The 10 persons in the second category, who identify themselves as having some prior computer experience, also display varying degrees of e-mail use. The comments range from, "I can hardly think of when I wrote an e-mail message last" [although this person checks for incoming messages more than once a day] (4), and "there’s days go by I don’t even check the e-mail" (9), to using e-mail "several times a day, maybe more if I’m sending a lot of messages or answering communication" (5). Seven of the 10 persons in this
category indicate that they look at their e-mail every day or at least every other day.

The two persons in the third category of users, those who say they have no hands-on computer experience, indicate that they have no intention of learning to use a computer for e-mail or any other purpose. However, both these people receive e-mail messages in printed form. These messages are printed by information systems personnel and placed in these users’ campus mailboxes in O’Connell Hall.

Both of these people express concerns about e-mail use, indicating that they have intentionally chosen not to get a computer or to learn how to use the e-mail system because they think e-mail has a detrimental effect on communication at Carroll College. One of these people is concerned about losing the personal aspect of Carroll College because people are becoming overloaded with communication:

I . . . see some danger in it of isolation, of becoming overly connected to the point that I think people almost get numb, and I think there’s real important communication that gets tuned out because you’re communicating all the time, you’re always in contact with people, always getting messages, that when we do have free time we’re less
inclined to connect. Because I think there’s a saturation point. That worries me (8).

The second person expresses similar concerns, indicating that Carroll College could become less human because of the use of e-mail:

It used to be at Carroll College that the mailbox was the water cooler or the coffee pot. . . . Everyone—all faculty on the campus—had to come to O’Connell to get their mail. They picked up their mail, walked into the coffee room, we sat around the tables that were pulled together, sometimes 8, 12, 15 people around the table, and . . . if we all wanted to get together to BS about whatever it was you wanted to bitch and moan about, you could do it. And it was wonderful. And this system dehumanizes all that. . . . I mean the very thing that it’s designed to do is the very thing that it is really frustrating (13).

These users imply that communication involves a great deal more than simply sending and receiving messages.

At Carroll College, the amount of computer experience correlates to the amount of e-mail use. Of the nine who have extensive computer experience, six use e-mail extensively and the other three use it at least twice a week. Seven of the 10 people who have some computer experience look at their
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e-mail at least every other day. While the other three in this category may not generate e-mail messages very often, they all indicated they look at their e-mail at least weekly. The two people with no prior computer experience do not have computers in their offices and receive printed e-mail messages through the campus mail. In other words, e-mail for these two is simply a means of receiving messages. They reply to e-mail messages in person or by using the telephone. Thus, the findings at Carroll College corroborate Hunter and Allen's research.

Does E-mail Have a Social Aspect?

According to Walther's research, reported in Swanson and Walther (1993), "[e-mail] groups become more affectionate and sociable than 'traditional groups" (p. 5). Of the 19 direct e-mail users, 14 had positive comments concerning the social aspect of e-mail. Three users said that e-mail has no social benefit and two did not address this issue.

Those who think e-mail has a positive social aspect seem especially to appreciate knowing when others on campus were ill or had tragedies in their families:

One really nice thing about the e-mail is that if something happens to
somebody, like if they lose a family member or something like that, somebody will put it on e-mail and people know right away. And they're able to rally and support that person. I think an important social aspect of the e-mail is that the communication is almost instantaneous (5).

This user echoes the statements of many other users that e-mail enhances a sense of community by enabling people to share non-work-related information.

A new faculty member has become more acquainted with the community because of e-mail:

A woman who’s got cancer now, I still don’t know who she is, but I feel like I do because you hear about her progress or you get to know names . . . so in a way it is kind of nice because you get to know them a little bit more—there’s more of a feel of what’s going on (9).

In this person’s case, e-mail provides information which enables a new faculty member to become part of the community.

Participants also appreciate the notices of special events on campus, because whether or not they take part in events, they feel more included just to know what is happening. One person discusses how the president uses e-mail to help involve community members:
If we're going to have a reception for somebody, everybody on the campus knows that there's going to be a reception--they're all invited. [The president] has been very good about sending messages out to the community about people that are visiting the campus or an update on where things are. And I think all those things make people feel more included (15).

Regardless of where their work areas are located, people can receive messages such as these. In fact, one participant says, "if we didn’t have e-mail, we’d feel a lot more isolated than we are" (5). People who work in areas such as the Science Building and do not frequently go to O’Connell feel more connected to others on campus because of e-mail.

In addition to on-campus connections, Carroll’s link to the Internet system has allowed faculty and staff members to contact friends and colleagues at other institutions on a more frequent basis than they would attempt by telephone or letter. For a minimal long-distance charge, "mail comes from the Internet through AT&T Mail to us and then the network distributes it, exactly as if it was coming from somebody else on campus" (1). As Hunter and Allen (1992) find, one important aspect of e-mail is that it allows people in organizations to communicate regardless of time or distance constraints. In
referring to maintaining contact with colleagues at another institution, one participant says,

I’m positive that they wouldn’t have written as often or as much if they had to write a letter compared to what they do on e-mail. And my contacts have gotten more frequent. I might write a letter once a month or take longer to respond but if it’s in e-mail probably the lapse time is shorter for me to write back to them (9).

This Internet connection also allows members of the faculty and staff to maintain contact with Carroll’s satellite office in Seattle. The worker in the distant office “has the opportunity to know what’s happening on campus—that’s a vital link for her, being out there by herself, and she knows all the small, intricate things that are happening on campus . . . even though she’s 600 miles away (2).

While generally favorable to the social aspect of e-mail, four participants warn that e-mail must be used appropriately and cautioned that, as one person said, "if you use e-mail too much, you’re going to lose a lot of the relationships that you hold with other faculty and staff on campus . . .

Carroll’s more of a personal place" (2). And in the words of another participant,
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I think it's very fine to say "so and so's in the hospital, they'd love to hear from you, they don't want company or they do want company, and please keep them in your prayers." I think something like that's real appropriate. But I don't think it's appropriate to give blow by blow descriptions of what's happening to a human being in the hospital. I just don't think it's our position to do that (21).

Users need to consider whether e-mail is the appropriate means of disseminating some types of information or of maintaining relationships.

The majority of the participants in this study concur with Swanson and Walther's findings that e-mail facilitates social interaction on campus. In addition, those who communicate with others at distant locations agree with Hunter and Allen's research concerning the reduction of time and distance constraints when e-mail is used. The only problems participants noted were the overuse of e-mail, which could reduce face-to-face socializing, and the need for sensitivity when sending messages about coworkers who are ill or have experienced a tragedy.
Should E-mail be Used
as a Means to Sell Personal Items?

The research by Sproull and Kiesler (1986) which says that 40 percent of e-mail messages are unrelated to work concurs with the fact that Carroll e-mail users find the system a good place to advertise items for sale. This research did not address whether using e-mail for non-work-related communication was a problem. These researchers noted in their analysis that they have no "comparative data for other organizations generally, so it is difficult to know whether 40% is a small or large number" (p. 1508). These researchers acknowledge that some amount of workers' time on the job is spent on non-work related activities, regardless of whether e-mail is available.

Nineteen of the 21 Carroll participants expressed an opinion about the e-mail messages which advertise something to sell or give away. Nine participants have no objections to this use of e-mail; in fact, two of the nine indicate specifically that these messages help promote a sense of "community."

And as one person says,

[If] you've got something to sell, stick it on there, boom, you send it out to 200 people. . . . Why not, it takes you 10 seconds--it's not that big a deal. . . . I think people should feel more comfortable to do that,
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if you use it for non-business things, just as a community source of communication. They don’t bother me, they’re kind of fun (17).

Five other participants react differently--e-mail should not be used as a selling tool:

It just seems to be like everybody’s selling a dog or a cat—all of a sudden you go, "I wonder if this was a benefit or not." . . . It’s like we get clutter on here like we used to get in our mail boxes. And I think people should guard against the clutter (21).

Two of these five suggest that people should put items for sale in the Carroll Newsletter or, as one participant suggests, use another electronic format:

I think it could be met better with what they call an electronic bulletin board. . . .[If] I’m interested in buying a car, look on the electronic bulletin board, the for-sales. . . then you can organize it according to what it is--if it’s student activities, lectures, movies, whatever, that could be all put on there, it could be updated (10).

Five other participants mention that using e-mail as a sales tool is not necessarily acceptable but that this function is not overused and is easily dealt with:

I guess I don’t care because I don’t see that many. I suppose if we
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were really tied up with a lot of e-mail, things about my daughter has
girl scout cookies to sell, you either say that’s ok or that’s not ok. . . I
haven’t seen enough of that to make it worrisome for me. I don’t see
e-mail as being abused at Carroll College (4).

An information systems employee says that, while these messages may not be
the best use of e-mail, those who manage the system want people to feel
comfortable using the system and so do not place unnecessary restrictions on
that use.

Carroll users’ perceptions of whether the amount of non-work-related
messages are excessive correspond to their opinion about whether this use of
e-mail is appropriate. In summary, nine of the 21 users think that using
e-mail to sell or give away items is appropriate, five believe e-mail should not
be used for this purpose, five think that this may not be the best use of e-mail
but said that there are not an excessive number of those kinds of messages,
and two participants did not respond in a conclusive manner to this question.

What About the People

Who Are Not On the System?

Because of system limitations, certain people on campus are not on the
e-mail system. According to a facilities management employee,

We initially [had] a backbone with our fiber optic cable and our network [for] 150, right now we’re just over 300. Anything from now on we have to add either boxes or fiber hubs or wire hubs and expand more on the network instead of with computers (19).

The Physical Education Center is not connected to the system "because the distance is too great for the network to pick up. A couple of them [people who work in the PE Center] have modems and they dial in and get their e-mail that way" (1). One participant argues that this is unacceptable:

The PE Center is not on e-mail. I believe they’re out of the loop of communication and I believe because of that, there are not necessarily the best communications with the PE Department that there could be. . . . I think it’s absolutely significant--for them not to be on e-mail is awful (21).

Another group which has limited access to e-mail is the facilities management (maintenance) workers. Four of the 27 people in that department have e-mail addresses. According to an information systems employee,

Maintenance is kind of a problem area because you’ve got so many people who don’t have a desk, who don’t have a work area, that you
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can connect with. And it's not part of their job to be using a computer every day. So what we have done is there are a couple of people down there [in facilities management] who do have computers, they have desks, so they're hooked up. But we also set up a general maintenance address and that address is on all of our group lists. So if people send things out to everyone on campus, a message goes there, and [a worker] prints out a copy of it and posts it on the bulletin board so they can read it.

However, as a facilities management employee indicates, many workers do not come to the office area, so some messages are copied and delivered to their work areas. This means that judgments must be made by facilities management staff members about which messages to send the workers. In addition, workers do not always read the messages sent to them. This problem was expressed by a facilities management worker:

Sometimes they're not even good about reading the e-mail because I'll staple two or three things together and sometimes if it's an answer that I have to have back on something, I have to call them, and they say, "well, you didn't tell us." And I say, "oh yes I did," and they just didn't bother to read through (19).
While e-mail would provide another means of providing information to these employees, workers need to take responsibility for reading the messages sent to them before this means of communication is effective.

Adjunct faculty comprise a third group whose access is limited. Although no adjunct faculty members were part of this study, three participants discuss how not being on the system affects these people. One faculty member assesses the situation this way:

They are left out of the whole group all together, no matter whether it's e-mail or mail or anything. They have no way of receiving the campus communications. . . . I make copies of everything, both e-mail and paper mail and leave it on their desks, but not all adjunct faculty have desks and places to get stuff (3).

Whether adjunct faculty members have other means of receiving information is not known to the researcher.

Some users have the misconception that everyone is included on the e-mail system. Six of the 21 respondents insist that everyone is on the system in one way or another: "Everybody has an e-mail address no matter who they are" (10). Another person who shares that opinion says that when the system was first installed, those not on the system were eager to get on it, because
"all it took was for those people to miss a couple of important things and they learned real quickly how to use e-mail" (12). Unfortunately, the possibility continues to exist for some to miss out on important pieces of information.

Nine others address the possible inequity. As one says, "if we’re really talking community, then we all should have the same access. . . . [so] that when you send a message on e-mail, you know you’re getting everyone, and you can use it as such" (4). Another participant says, "I’d rather make it accessible to the whole system here . . . [because] information that is privileged is slavery for everybody else" (20). Because people without e-mail addresses were not interviewed, their opinions are not represented here.

Of the 19 people interviewed who directly use e-mail, nine realize that some people on campus do not have access to e-mail and believe the system should include everyone; six believe that everyone has access to the system in one way or another; the four participants who did not address this issue have all started working at Carroll within the past two years.

Should the Students Have E-mail?

As indicated in Chapter 2, Hawisher and Moran (1993) address the issues related to allowing students access to campus e-mail systems. When
asked whether students should have access to e-mail, 10 Carroll participants say yes, five say no, five do not know whether it would be beneficial, and one says maybe.

Of the 10 who say yes, five are faculty members and five are administrators or staff members. Only three of the 10 mention off-campus students (two staff members and one faculty member); the others’ replies seem to assume that all students live on campus and therefore students could have access to e-mail by putting computers in each residence hall room. The major concern seems to be whether the students would be provided with computers and access to the network. As one participant says,

Now if... we were ever able to network the campus and have all the students have laptops that they could plug into their wall and receive e-mail messages that are community-driven, I think it’d be great... there’s a lot of things that go on on campus that would be really great if they knew about it (15).

One professor who is not in favor of extending the use of e-mail to students wonders whether there are other considerations involved:

Is it important that every student be able to sit down at his or her desk and register? Might solve some of the inconvenience. Are we so big
that that process of waiting in line is such a labor, such a painful
experience, such tedium that it would be better for them to go up to
their room and do it in five seconds and go on and do something else?
Maybe. But something else happens in the journey from here to there,
it's like walking to work without having a car (20).

Sixteen Carroll participants (all but those who think students should not
have e-mail) concur with Hawisher and Moran (1993) that the decision to
provide e-mail service to students is a complex one which should be
considered carefully before a decision is made.

**Is the System Trustworthy?**

Although no question was asked regarding this issue, four participants
express concern about whether the system can be trusted. This is a reasonable
question because information systems personnel have access to others’ e-mail
messages. However, they exercise that ability only when asked to retrieve
messages by the message originator: "A couple of times people have said,
'look I've sent this message and I've changed my mind, could you go out and
get rid of it before the person reads it?' So I do" (1). The information
systems personnel want people to feel comfortable using the system:
If they feel like someone is going to be monitoring the contents of their messages to see is this appropriate or is this not appropriate, then they’ll be much less likely to use it and they will be less likely to use it effectively (1).

The information systems manager has never been asked by an administrator to reveal any information about e-mail use or content.

In spite of this reassurance, some people are nervous about the system’s security: "I’m not convinced that it is secure on any level" (20). Others wonder if reports they’ve heard on the news about e-mail monitoring are true:

When [organizations] try to get a case against somebody, they track down stuff on their computers. How do they do that . . . you erase it and it’s gone or you put it on a disk. How do they get into a system and get that record out of there? Is there some kind of a backup system where all those messages are kept? (9).

Another user trusts the system as long as the system seems secure:

If I send a confidential e-mail message, I’m always a little bit worried about that--confidential seems more like sealed up in an envelope, whereas if you just stick it on a machine, then you just trust the machine. . . if I ever get burned by it, then I wouldn’t use it, I
wouldn’t have the faith in it (15).

One person considers why the issue of system security is confusing:

It’s just such a sense of space--like a letter . . . I don’t know where it is between here and wherever I’m sending it, but I get the sense of these human beings handling it, it’s someplace in space. But conceptually I can’t figure out this information highway--to me, it’s just magic to think that I send a message and it goes to Nebraska, but where? Is it like underground, is it in the air or is it on the airwaves . . . where exactly in reality, in the world, is that message? That’s why sometimes I write a letter or just keep hard copy (9).

Many participants report that they do not use the e-mail system for confidential matters such as specific references to individual students’ records.

What Would You Change

About the System If You Could?

Eight participants believe that there are some aspects of the system that should be changed. Of these eight, three mention the same problem: the lack of a spell-check program in the e-mail system. As one says, "I’m not the best speller, so when I send e-mail messages I go back and reread it four or five
times before I send it" (2). Another person also would like a more user-friendly format: this participant wishes that it was easier to send and receive documents that are created in other software programs.

Another participant wants the system to be more dependable, because after sending notices of a meeting, "I was amazed at the people that came in and said that their e-mail's not working . . . which then makes you kind of nervous to trust it the next time around" (12).

One person is frustrated because, after sending a message, the system indicated immediately that the message was sent. However, several hours later, the user received a message saying that the message sent had been rejected. This user is still unclear about why some messages are accepted by the system and others are not.

Another person says that if she could change the system, she would ask only that "people could use it sparingly. . . there are just some things on there I don't think need to go through everybody's mailbox" (21).

Eight of the 19 direct e-mail users would like some changes made to the e-mail system. Those people who did not suggest changes indicate that the system is satisfactory as it is or that they do not know what they would change because they have no experience with any other e-mail system or
knowledge of what additional options are available.

Participants willingly shared their opinions about these aspects of e-mail, because they realize that e-mail is a predominant source of communication on campus. Even the two people who do not directly use e-mail realize that, with e-mail, they receive more information than they would if they did not receive the printed messages.

These responses also indicate that there is no consensus on any of the issues surrounding e-mail. Although most people interviewed have an opinion on each topic, their opinions vary greatly. For example, while most participants say that e-mail has some advantages over other forms of communication, they also realize that judgments must be made about what form of communication is most appropriate to the individual situation. However, it is useful to know how the majority of these users think about the topics addressed in the study because their opinions could provide insight into how the e-mail system might help increase satisfaction with communication at Carroll College.
Chapter 5

Conclusions and Recommendations

The findings of this study are restricted by the boundaries of ethnographic study. This type of study asks for unrestricted responses and claims only that the results apply to the responses made by the people interviewed at the time they were interviewed. Nothing is inferred about how these findings apply to other e-mail users at Carroll College or to e-mail users anywhere else.

In addition, the validity of the study’s conclusions is limited by the abilities of the researcher. As an undergraduate with limited experience in the field of ethnographic research, the researcher conducted this analysis as best she knows how.

However, issues which arose during the interviews could bring insights to anyone interested in the quality of communication at Carroll College. Participants in the study have differing opinions about almost every aspect of e-mail and how it affects their satisfaction with communication at Carroll College.
The conclusions and recommendations in this chapter are organized around the major points described in Chapter 3 and are based on the findings reported in Chapter 4. The two major points are 1) the factors which contribute to e-mail use at Carroll College, and 2) e-mail's effect on user satisfaction with communication at Carroll.

Factors Which Contribute to E-mail Use

In response to the first point, the following five factors emerged as ones which contribute to e-mail use at Carroll.

Prior Experience

As shown in the findings in Chapter 4, 19 of the 21 participants in this study had at least some computer experience before learning to use e-mail. Only the two people interviewed who have no prior experience do not use e-mail directly. Of those with prior experience, none indicate any hesitancy to use e-mail. In fact, all of the 19 people who had prior experience use the e-mail system at least once a week--13 use it more than once a day. New employees with no prior computer experience could benefit from basic computer training given before they are asked to learn how to use e-mail.
E-Mail Training

Sixteen people say they use e-mail at least two times a week. Fourteen of the 16 people think the training process was easy. Eleven of the 16 people were at Carroll before e-mail was installed. This is significant because people who were at Carroll when e-mail was installed were offered training classes which were then followed up with any necessary one-on-one training. Some of the early users chose to train themselves using an instructional pamphlet--these same people say they had extensive computer experience prior to using e-mail.

However, since the initial group was trained, no further group training sessions have been held. All newer users indicate that they learned through one-on-one sessions with a trainer from information systems or had learned functions from a co-worker. Two of these people, both new to Carroll this year, are struggling with e-mail. The feeling they convey is one of frustration. As a consequence, they express a wish to understand more about the system. At this point, both are trying to use the system to the best of their ability. Both check the system for messages daily but send very few messages because they do not understand enough about the system. Further training in functions beyond the basic would decrease their frustration levels and positively affect
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their satisfaction with the system. In the future, group training sessions for new faculty and staff members could help prevent frustration.

Another faculty member who has been at Carroll for four years says he taught himself to use the system with the help of a pamphlet. However, he has lost his pamphlet and now is frustrated by his inability to perform some functions. Although he does not say why, he indicates that he will not ask for further training— he plans to talk to others he works with for advice. He implies that his use of e-mail would increase if he could master these more difficult functions.

Ease of Use

All 19 participants who use the system directly find it easy to use at a basic level. Everyone uses it to receive messages and most use it to send messages at least occasionally. Beyond these basic functions, some users create documents in other software programs (especially graphic or mathematical programs) that they send to other users. This is a somewhat complicated procedure that necessitates a higher level of expertise with the system.

Seven of the 21 participants use e-mail to connect to Internet, a world-
wide network to which many organizations belong. Internet gives users access to colleagues and friends at distant locations. While some people use this system frequently, others are unaware of how to gain access to Internet but would like to know.

Again, training in how to use Internet and how to send and receive documents created in other software programs would be helpful. This could be part of a training session instructing people on how to use some of the more advanced e-mail functions.

Co-worker Use

The major reason people use e-mail is to receive the messages others send to them. Participants report that more than half the messages they receive are "all" messages—items which are sent to everyone on campus with an e-mail address. Messages which people receive include notices of functions on campus, prayer requests for people who are ill or have lost a loved one, advertisements of items people have for sale, and other items thought to be of interest to everyone. Participants say these messages promote a feeling of community.

Many people assume that because most offices have access to e-mail,
then all employees on campus receive e-mail messages. These same people also indicated that they believe everyone receives the messages simultaneously. Both of these assumptions are inaccurate. First, everyone on campus does not receive e-mail. According to information systems personnel, only two people in the PE Center are connected to the system by modem—all others in that building receive their messages through the regular campus mail. In addition, only four people in the facilities management group receive e-mail directly. All others in facilities management have no e-mail addresses and receive only those messages which are copied and posted or sent to them in their individual work areas. Most of these work areas have no tables or bulletin boards to provide a convenient place to find messages. As reported by a facilities management employee, some workers do not always look at their messages. Therefore, to assume that everyone on campus receives e-mail is inaccurate.

Second, even those people who do have e-mail addresses do not receive their messages simultaneously. Users with computer access receive their messages when they open the e-mail system. Some report using the system several times a day—others report using the system once or twice a week at most. This makes simultaneous contact impossible even for users. People with e-mail addresses but no computers have to wait until they receive their
Conclusions and Recommendations

campus mail to receive their e-mail messages. Several hours or even one or two days might pass before they read their messages.

Third, some users believe e-mail is overused by others. Because they consider that many of the messages they receive are unimportant, they scan quickly over their messages. It is possible that an important message may be overlooked because they have come to question whether it is worth their time to look at the messages.

This research suggests that efforts should be made to educate people about 1) who has access to the system; 2) how to insure that those people who do not have access to the system receive "all" messages and messages directed specifically to them; and 3) the possibility that overuse of the system may cause some users to disregard messages. In addition, because e-mail is an important source of communication between members of the faculty and staff at Carroll, the responses suggest that a way needs to be found to connect all faculty and staff members to the system.

Utility

Many people at Carroll find that e-mail helps them do their jobs more efficiently. Staff members report a greater utility benefit than did faculty
members, chiefly because they use the system to solicit or provide specific job-related information. Faculty members state that because teaching is their primary function, e-mail is less important. Some faculty members say it would be helpful if students were on the system because it could facilitate completion of assignments. Other faculty members fear that e-mail would reduce personal contact with the students and could possibly overload both the teachers and students with messages. However, faculty members as well as staff personnel indicate that e-mail is beneficial for setting up meetings and sending and receiving messages, which would take more time if they had to reach others in person.

Some users feel required to use e-mail, not because it is a campus policy, but because they feel responsible for the messages that are sent to them. This feeling does not seem to be universal, however. Some participants say they look at the messages when they get time—often no more frequently than every other day. One participant says he feels that the e-mail is there for his convenience, not the convenience of the sender.
User Satisfaction

The second major point addresses how e-mail contributes to user satisfaction with communication at Carroll. Following are five factors which emerged from the data reported in Chapter 4.

Amount of Communication

Ten participants indicate that they receive more communication because of e-mail. Some believe that this is positive because they are able to ask for and receive information more easily. Others say that the increased communication has overloaded them with information and, because they have the information, they are now responsible for acting on it. Many participants think that e-mail has reduced the amount of paper used on campus and believe that this is one of e-mail's most positive aspects. Some users state that while the amount of communication may not have changed significantly, they are more satisfied with the communication because it is handier to have it on a screen in front of them and there are fewer papers to dispose of.
Social Aspect

Many non-work-related messages are sent by e-mail. Almost all participants seem pleased that notices of deaths and illnesses are made available this way, although users are cautioned not to violate a person's privacy by providing too much information about a personal issue. Responses are more mixed about the use of e-mail to sell things. Some think this is fine—they can look or not as they please. Others think it overloads the system with messages that may cause some to stop looking at their messages and miss important notices. For many, e-mail provides a way to find out about campus activities which they may have been unaware of before. So for those who find the social notices appropriate, e-mail has increased their satisfaction with communication. Others' satisfaction has decreased because they feel there are too many unnecessary non-work-related messages.

Carroll College could install an electronic bulletin board system where messages could be "posted" and then read by those interested in certain topics. For example, one bulletin board could list items people have for sale. By using a bulletin board system, the number of messages sent on e-mail would be reduced.
Personal Benefit

Hunter and Allen (1992) state that "satisfaction is determined by the extent to which the person finds e-mail personally beneficial" (p. 259). Most participants find that e-mail is at least somewhat beneficial, if not very beneficial. Even those people who use it less often believe they benefit from the system, if only as a way to be connected to the community. Those who feel more isolated because of their location on campus or by their job duties find that e-mail provides an important connection—a way to keep in touch with others at Carroll.

People also feel that a positive aspect of e-mail is that messages are written down as opposed to spoken messages in person or on the telephone. This is a benefit because users do not have to look up or write down aspects of the message, such as telephone numbers to respond to someone, and any information given or requests made are more clearly understood than when spoken.

Some indicate that e-mail is a benefit because messages are less time-consuming than personal encounters. E-mail eliminates the need for social "chit-chat" that occurs when people meet in person or talk on the telephone. They find e-mail to be quicker because they can write their messages or
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respond to another's message without spending the time often consumed by small talk.

Another aspect of e-mail which increases satisfaction is that electronic filing of messages expedites retrieval of messages. As some people said, paper piles up, gets misfiled, or gets thrown out, which makes retrieval difficult or impossible. On the other hand, electronic filing of e-mail messages is quick, easy, immediately available, and takes no physical space.

Of the 21 users interviewed, 19 seem to think that, because of personal benefits, e-mail has increased their satisfaction with communication to some extent.

People Not On the System

Those participants who recognize that not everyone is on the system demonstrate some dissatisfaction with communication because of this fact. They urge that the system be made available to everyone so that all employees have equal access to campus information. They would like assurance that "all" messages reach everyone.

Some believe that students could benefit from the system—others think this is unnecessary or might even be detrimental. Further study on the effects
of e-mail use, as well as the accessibility to both on- and off-campus students, is needed before the service is provided to the students.

Facilities management and information systems personnel discussed the system’s limitations. Further expansion would require a great deal of expense, effort, and time. While expansion might be possible in the future, the system is at full capacity now.

Security

Participants are concerned about the security of the e-mail system. Most of these concerns stem from a lack of knowledge about how the system works and whether others have access to personal messages. It would increase some users’ satisfaction if they knew whether their files can be retrieved by others, whether messages that have been deleted are actually erased from the system, and how the transfer of messages occurs.

Summary of Recommendations

The following recommendations were determined through analysis of the information received from participants.

This ethnographic research suggests that e-mail system managers at
Conclusions and Recommendations

Carroll College should:

- provide training in advanced e-mail functions such as the ability to send or receive documents created in other software programs and in use of the Internet.

- help people realize that not everyone has access to the system, and that even those who do have access do not use the system simultaneously. Printed messages may reach people more slowly than electronic messages; electronic messages are received only when a person activates their e-mail software.

- consider carefully whether e-mail would benefit all students, as well as faculty and staff, before making the system available to students.

- help users realize that overuse of the system for unnecessary messages may cause some people to ignore important messages due to overload.

- instruct those who put messages on the system about deaths and
illnesses to respect the privacy of the persons involved in regard to the
details provided to everyone on the system.

- provide faculty and staff members at Carroll with more information
  concerning the e-mail system’s security.

E-mail has provided an important mode of communication on the
Carroll campus and a connection with people at distant locations. Those who
administer the system are interested in making the system as beneficial to
everyone as possible. With this in mind, people at Carroll can use the system
for their personal benefit, remembering its limitations and realizing its
advantages.
References


Other Works Consulted


Appendix A

Data Release Agreement Form

This agreement is intended as an instrument for establishing understanding regarding the collection and use of communication data. The responsibilities of the Honors Thesis Candidate listed below include the following:

1) Collected and/or duplicated data (e.g. audio recordings, transcripts, interviews) will be used only at the consent and discretion of the involved parties.

2) All data will be treated anonymously by changing names and identifications of persons and settings.

3) Research methods and results may, at the request of the involved parties, be shared and discussed through meetings.

Please list any specific concerns/agreements below:

By signing below, I agree to allow this interview to be tape-recorded and I agree to allow Carolyn Chaussee to use the information shared during this interview for her Honors Thesis research.

Signed: ___________________________ Date: __________
Consentor

Signed: ___________________________ Date: __________
Honors Thesis Candidate

Signed: ___________________________ Date: __________
Honors Thesis Project Director

For further information, contact:
Carolyn Chaussee
505 South Roberts
Helena, MT 59601
443-5388
Appendix A

Some information about Carolyn Chaussee’s Honors Thesis project

- As part of my research for my honors thesis, I am seeking to obtain information about the use of e-mail at Carroll College. Specifically, I hope to discover how e-mail has affected faculty and staff members’ satisfaction with communication here at Carroll.

- My thesis project is directed by my department chairman, Brent Northup.

- Data for my thesis project will be collected by conducting interviews with randomly selected faculty and staff members. I will make an audio recording of these interviews. Faculty and staff members will be asked to sign a consent form allowing the taping to take place.

- In addition to my personal use of these recordings, the tapes will be heard only by my thesis director and readers. To protect subjects’ anonymity, all personal names will be deleted or changed, and addresses and telephone numbers will be deleted from all transcripts.

- For further information, please contact me, Carolyn Chaussee, at 443-5388 or Brent Northup at 447-5400.