Students’ perceptions of their use of e-mail for academic and personal purposes

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Abstract

Given the amount of resources being expended by colleges and universities on technology systems, university leaders should be well informed about the ways in which students are using those institutions’ technology resources. The purpose of this study is to determine how the Bowling Green State University e-mail system is being utilized by students, to what degree students are using the e-mail system, and whether for academic and/or personal purposes. The results to provide meaningful information about students’ use of e-mail to university leaders such that they may use the information to make decisions about technology systems. If students are using e-mail primarily for academic reasons, the urgency and importance of effective and service-orientated technology systems at universities is only magnified. As student cultures integrate e-mail use into the very definition of successful navigation of the university's academic activities, weak or interrupted e-mail systems have a greater potential to impede the university's academic mission and students' success.
Introduction

Given the amount of resources being expended by colleges and universities on technology systems, university leaders should be well informed about the ways in which students are using those institutional technology resources. Like the funding of most functions of an institution, support for technological services is determined by the relevance of the activity to the college or university’s mission. Even as institutions continue to redefine the role of technology in their missions, knowing the ways in which students use that technology can be instrumental in measuring the success of it.

As electronic mail (e-mail) and World Wide Web access become more and more central to academic functions and comprise the competitive edge between college choices, institutions continue to dedicate more people, time and money to the enhancement of technology systems. There seems to be relatively little contextualizing of the use of that technology because the focus is on the systems themselves rather than the users of the systems.

The purpose of this research is to determine how e-mail systems are being used by students at a particular university, specifically by determining to what degree they are using e-mail for academic and/or personal purposes. The results are expected to provide meaningful information about students’ use of e-mail to university leaders so that they may use that information to make decisions about technology systems. If students’ use is not congruent with the university’s mission, recommendations for changing the systems and/or student behavior may be implicated.

The overarching research question is “How do students at Bowling Green State University perceive their use of e-mail?” To help to narrow the focus, the researchers asked, “For what purposes are students using e-mail? Are students using e-mail primarily for academic purposes? Are students using e-mail for primarily personal purposes? How do students perceive that they use their e-mail?”
For the purposes of this study, e-mail use will include students’ reading or sending electronic messages from a BGSU or other e-mail account. Academic use of e-mail will include communicating with instructors or communicating with others about class or academic subjects through the use of e-mail. Personal use of e-mail will include messages sent or received for social or personal business purposes.

There are several assumptions made in this study. First, it was assumed that all students are assigned an e-mail account by the university, and will have at least that e-mail account for communication. Second, it was e-mail users are assumed to be able to perform the basic e-mail functions of reading and replying to e-mail messages. Third, it was assumed that e-mail users will check their BGSU e-mail account during the administration period for the survey.

It is a limitation of the study that e-mail use is still a growing phenomenon, and the extent to which students use it as a part of their daily lives is unknown. As e-mail becomes a more common mode of communication for BGSU students, and as the e-mail systems stabilize and become more consistent to use from year to year, researchers will be able to use e-mail and web-based methods more exclusively to collect information about students. This study will take a “snapshot” of reported student use, and will not be able to measure changes in student use over time in the academic year. Because of the potential variability of student memory or perception, this study will not claim to measure actual e-mail use.

This study has been limited to focus on the nature of e-mail use of students who use e-mail. Student non-users and faculty are not considered in this study. Also, the use examined has been narrowed to academic and personal use, although future studies might investigate sub-uses within each, such as literature searches or e-commerce.
Review of Related Literature

Technology has revolutionized American society, particularly in the past 30 years with the advent of the Internet. The Internet has fostered a true global society in terms of the way the world communicates. The ARPANET, which derived its name from the Advanced Research Projects Agency, was the precursor to the Internet and began as "theoretical communications using packets rather than circuits was a major step along the path towards computer networking" (Leiner, et al., 1998, p. 2). "The word 'packet' was adopted from the work at National Physical Laboratories (NPL) and the proposed line speed to be used in the ARPANET design was upgraded from 2.4 kbps to 50 kbps" (p. 2). In 1969, the first host-to-host message was sent from the University of California - Los Angeles to Stanford Research Institute. Soon after, computers were being linked to the ARPANET and the foundation of the Internet was formed. "The main purpose was to let defense university-based researchers for the Defense Department agency share computer resources, allowing someone in, say, California to run a program on a machine in Massachusetts" (Johnson, 1999, p. A1). By the mid 1980's, the Internet infrastructure was well in place and was being utilized in various defense research and development operations as well as non-military communities for daily computer communications (Leiner et. al., 1998). By this time, electronic mail, also known as e-mail, was in great demand and being used by several communities. It was "often with different systems, but interconnection between different mail systems was demonstrating the utility of broad-based electronic communications between people" (Leiner et al., 1998, p. 8).

The commercialization of the Internet did not come about without its challenges. In the 1980's, the emergence of competitive and private networking services prompted many vendors to provide TCP/IP (Transmission Control Protocols/Internet Protocol) in their product line. However, many of the vendors lacked the expertise to advise customers on the use of this technology (Leiner et. al. 1998). Dan Lynch realized the lack of appropriate training and the dearth of information, and in 1995 decided to provide a three-day workshop in conjunction with Internet Advisory Board to all vendors so they could enhance their
knowledge about how the TCP/IP worked. The event gathered 250 vendors from across the country to hear 50 inventors and experimenters. The outcomes were beneficial to both sides. There was an honest dialogue between the inventors and the vendors, as they discussed what was known and not known about the TCP/IP and the problems the vendors had discovered out in the field. Thus began a discussion that would last over a decade.

After consulting with experts from the Internet and intellectual property rights communities, the Federal Networking Council on October 24, 1995 produced an official definition for the term Internet. The Internet was defined as:

A global information system that—(i) is logically linked together by a globally unique address space based on the Internet Protocol (IP) or its subsequent extensions/follow-ons; (ii) is able to support communications using the Transmission Control Protocol (TCP/IP) suite or its subsequent extensions/follow-ons, and/or other IP-compatible protocols; and (iii) provides, uses or makes accessible, either publicly or privately, high level services layered on the communications and related infrastructure described herein. (Leiner et al., 1998, p. 13)

The Internet has fundamentally changed the way the world communicates. Specifically, the use of e-mail has served as a catalyst for that change. E-mail has been a popular communication tool of the Internet from the very beginning; however, e-mail does have its challenges in addition to its advantages.

E-mail is defined as "the practice of sending the information from one computer user directly to other computer users, allowing nearly instantaneous transmission of messages, to any one or any number of people with personal computers connected to the Internet or mainframe computers" (Wilkinson & Buboltz, 1998, p.1215). According to Wilkinson & Buboltz (1998), e-mail has two primary functions in the world and society.
Students’ use of e-mail

First, e-mail is being used as a form of communication that allows individuals, no matter where they are located, to communicate with each other on a regular basis at a low cost. Second, e-mail is used to advertise and sell goods and services to individuals (p. 1216).

Because of these primary functions, growth in the use of e-mail has been phenomenal. Time Magazine reported (as cited in Wilkinson & Buboltz, 1998) that there was an "explosive growth of e-mail from 1994 to 1996, the number of e-mail messages has swollen from 777 billion to 2.6 trillion, and is expected to top 6.6 trillion by the year 2000" (p. 1215).

But what are the implications of this growth for society? There are two schools of thought among researchers with regards to this question. The first view as stated by Berry and Stoll (as cited in Wilkinson & Buboltz, 1998) stated that "relationships that are developed through the use of electronic media, especially e-mail, are shallow, impersonal and often hostile, with only the illusion of a sense of community” (p. 1 ). According to Parks & Floyd (1996) (as cited in Wilkinson & Buboltz, 1998) the research has repeatedly identified the social disadvantages of computer-mediated communication (CMC), stating that “highly developed, positive personal relationships should rarely occur through the use of electronic media” (Wilkinson & Buboltz, 1998, p. 1216).

The second view, taken by other researchers, as identified by Pool (as cited in Wilkinson & Buboltz, 1998) suggested that “electronic-mediated communication reduces the obstacles of physical locality, creates new, but genuine, personal relationship and communities" (Pool, 1983). McCormick & McCormick (as cited in Wilkinson & Buboltz, 1998) stated, "Users of computer-mediated communications (CMC) have reported on a consistent basis that they develop and maintain relationships, socialize, and receive emotional support via e-mail"(p. 1217). It is obvious that more research is needed to determine the effect e-mail will have on individual development, particularly in higher education. In part, the college experience is a natural continuation of the socialization process that began under parental guidance at infancy until the secondary level of education.
If e-mail is the preferred communication medium of students, they may lose or never develop the social skills that are essential to create and sustain meaningful personal relationships. Wilkinson & Buboltz (1998) stated, "College is time for students to try many of the skills that were learned and practiced under parental supervision and for the first time, try them out in an environment totally independent from their parents and family" (p. 1217). However, if these incoming students are socially under-developed and are placed in the higher education environment, they will be lacking an important skill that is necessary to develop and communicate face-to-face with roommates and faculty members. Nevertheless, even with its flaws, e-mail is an effective means of communicating that will continue to flourish. The problem is not e-mail, but how higher education and society balance the appropriate use of e-mail.

As the Internet has matured, educators have begun to explore the applications of e-mail to teaching in higher education. Although the body of research is not extensive, it reflects a degree of practical use of e-mail as a communication medium for academic and scholarly uses.

The major theme in the literature is the way in which the use of e-mail can improve and enhance communication in addition to, or in place of, face-to-face communication, whether it is between students and teachers or among the students themselves. Researchers and teachers from a wide variety of disciplines have examined the use of e-mail as a supplement to or in lieu of more traditional forms of communication between teacher and student. Atamian and DeMoville (1998) completely replaced faculty office hours with e-mail communication, and found students liked the method and improved in their writing skills over the course of the term. Trushell, Reymond and Burrell (1998) found that students tended to use e-mail to gain information but not opinion from guest lecturers, and that many students cited the lecturers in their essays. Meacham (1994) used an e-mail discussion list to facilitate discussion among students in a large class. He found that there was a large degree of participation and that student reaction was positive. Drawbacks to the
method included both student and teacher ability to keep up with the volume of e-mail, and occasional redundancy as writers responded to old messages. Collins (1998) found that e-mail and electronic bulletin boards increased interaction between the instructor and students in a second-year college biology class. Although many studies were local and only intended to represent a targeted population, the general findings in the literature suggest that e-mail might be a positive force in college-level teaching.

Students appear to find at least some advantages to e-mail communication. Merrier and Dirks (1997) studied upper-class business students, and found that they were familiar with computers both at work and as a requirement for at least one class. Students reported having generally positive attitudes toward written, oral and e-mail communication, with a preference for e-mail communication. It is interesting to note that the students rated e-mail communication most positively even though almost half of the students studied reported that they had never used e-mail. Those students who were regular users of e-mail rated all forms of communication (written, oral and e-mail) higher than those who had not used electronic communication technology.

Although it appears that little research has been undertaken to critically consider them, there are now entire educational programs available long-distance through the use of e-mail and other location-independent means. Degree programs are now being completed through Internet-based communication, often across hundreds of miles, with e-mail serving as a primary means of interaction (Gubernik & Ebeling, 1997).

In total, the research has thus far supported the usefulness of e-mail communication for scholarly uses, and the advantages found seem to outweigh the disadvantages. E-mail appears to be a potent tool for educators, growing in use in higher education.

In 1990, Bowling Green State University ushered in a new era of technology for its scholar community by offering e-mail to students. However, students were only assigned an e-mail account if it was required for a class. This arrangement probably kept social uses of e-mail to a minimum. The mainframes used were named ANDY, OPIE, and TRAPPER, and
were outfitted with the UNIX operating system. These mainframes also had other computer jobs to process for the university, so a plan to place more e-mail duties on one mainframe (ANDY) was enacted. Why was ANDY selected to handle the additional e-mail duties? The short answer was ease of use. Richard Conrad, former director of University Computer Systems (UCS) stated, "ANDY [was] very easy to use whenever people wanted electronic mail, we put them on ANDY" (Zawaki, 1993, p. 3).

Even with added e-mail duties, ANDY still had to perform other functions for the university. The popularity of e-mail on the campus sparked the UCS to "design a system solely for [e]mail which [would] offer better response and many of the same features [that were] available on the ANDY system" and the UCS hoped to have it in place by the summer of 1994 (Zawaki, 1993, p. 3). There were about 5,000 users and this began to tax the system to a point where a practical solution was sought. The solution was a system that was scalable and would allow "modules to be added to increase capacity" (Coe, 1994, p. 1). This new system consisted of a smaller and faster SUN workstation. With the new equipment came a new name, hence the birth of BGNet. With more than 5,000 users, a well-planned strategy was necessary to perform a seamless conversion to the new equipment.

In August 1994, a strategy was implemented to transfer e-mail from ANDY to BGNet. Former ANDY users switched the first two digits of their password around to get access to their new account. BGNet still carried the ANDY name as part of the user's e-mail address for a period of time since this name was well known to those outside the university. However, this ceased once the BGNet name became well known. To promote ease of use, BGNet created a series of menus to guide the student to e-mail, the World Wide Web, and other programs (prior to this, students had to navigate on their own with the command prompt.) A help desk was established under the name “UCS Help Center” to field questions and comments about the new system. Finally, students who wanted to continue to use the old ANDY system were given the option to do so (Conrad, 1995; Coe, 1994).
According to vice-provost for technology Ann-Marie Lancaster (personal communication, September 29, 1999), explosive growth in e-mail accounts took place in 1994. In the spring of 1994, there were approximately 5,000 users. By December 1994, there were approximately 13,000 users. To get these new users registered on e-mail, over 100 faculty and staff volunteers donated their time at BGSU's Jerome Library (A. Lancaster, personal communication, September 29, 1999). The phenomenal growth of e-mail users is documented in the UCS Annual Report 1994-1995. Data show the following:

- in 1989-1990, there were 3413 users; in 1990-1991 there were 3714 users; in 1991-1992 there were 4622 users; in 1992-1993 there were 5389 users; in 1993-1994 there were 10,258 users; and in 1994-1995 there were 18,888 users.

(Conrad, 1995, p. 6-4)

The vice-provost for technology stated that BGSU used Pine as its e-mail program because it was bundled with the UNIX operating system and it shared the same environment with the computer labs. OARnet, a state organization based in Columbus, Ohio, accomplished connection of the university to the Internet, which provided the conduit.

With respect to costs involved with the initiation and evolution of e-mail at the university, there is insufficient data available to extract exact numbers. It appears that e-mail costs were always intertwined with other technological initiatives and post hoc separation of is not practical.

The university e-mail system had finally achieved critical mass in 1994 and policy issues had to be addressed. Issues such as acceptable computer use, user responsibilities, privacy and security, and misuse of technology resources created a need for a system of policies to be created, distributed and enforced. Policies for e-mail were not articulated separately; rather, they were interwoven with other forms of electronic media in a document now known as BGSU's Responsible Information Technology Use Policy. It is currently posted on the BGSU website (Bowling Green State University, 1999a).
BGSU takes violations of its technology policy very seriously. In the spring of 1999, a graduate student sent racist mails to herself in order to claim racial intimidation and harassment. The incident was reported to Campus Police. Because the case involved a potential civil rights violation, the Campus Police contacted the FBI. Investigation revealed that the harassing e-mails had actually originated from the victim’s own e-mail account. Although the U.S. Attorney's office declined to prosecute the graduate student, the Wood County Prosecutor's office took the case because it felt that an action of this magnitude could not go unaddressed. The now-former graduate student is facing up to five years in jail and a $2,500 fine (Ryman, 1999).

E-mail at the university has taken on a life cycle of its own. Up until March 1999, Pine was the e-mail software used, but with close to 20,000 users, a new set of technical issues arose. Issues included performance problems, obsolescence of software and hardware, low levels of security, and lack of integration with other administrative functions like "calendaring" (managing appointments and meetings) and document management. It is the latter that perhaps instigated the selection of Lotus Notes as the successor to Pine. Coupled with an ability to provide an environment for students to access e-mail from the computer labs and operate behind a new firewall (a critical component of the new infrastructure), Lotus Notes appeared to be the most appropriate software. Because the university had been vulnerable to attacks by computer hackers, the high level of security provided by a firewall was a definite advantage of Lotus Notes (Bowling Green State University, 1999b).

When an organism grows, there are usually growing pains. BGSU's e-mail system is no different. When the university migrated to Lotus Notes, it was a time of confusion, angst, and the perception that the migration plan was ill conceived. The confusion was in something as basic as usernames, where usernames were the same as users’ first or last names. The angst was a result of incorrectly entered new passwords. The perception of an ill-conceived plan arose probably not so much for the hardware/software upgrades, but
because of the actual timing of the migration. Campus rumblings have run the gamut from "why did we need to switch from Pine" to "why couldn't the switch take place over a longer school break period?" However, from a technical perspective, there was not much choice in timing. According to the BGSU Office of Information Technology, the timing was well thought out, considering the parameters. The administrators needed to work within these guidelines: "Conversion to the [new] e-mail system should take place when classes are not in session. At the same time, the user community needs to be on campus shortly before the conversion to receive the directions for the conversion and shortly after the conversion so we can address any problems" (Bowling Green State University, 1999b). Ironically, after all of the resources poured into the upgrade, measured in both money and employee hours, students are finding other sources to meet their e-mail needs and this is causing some confusion.

Some faculty members have estimated that as many as ten percent of their students are using e-mail vendors such as Yahoo, Hotmail, and America On Line, and that some messages sent to students’ BGNet accounts go unanswered. Students using Lotus Notes have expressed disdain for it and have opted for a system that is easier to use. Moreover, some academic departments have their own mail-servers. In an Information Technology Committee meeting, it was noted that the College of Business Administration has its own mail-server, as does the Computer Sciences department. Finally, in that meeting, it was mentioned that Cleveland State University had Lotus Notes installed on its campus servers but removed it after two months because it was not working. Perhaps events like this have caused the chief information officer to consider the creation of an ad hoc committee to be called E-mail Progression, that "would identify problems, get them out to the campus community, and work with [the] Technology Support Center" (D. Boyce, personal communication, October 15, 1999).

In sum, the intent of this study was to contribute meaningful information to the existing body of literature. The researchers specifically chose this topic because it will
address what is believed to be a void in the literature. This study will assist college and universities leaders to make well informed decisions when allocating resources to technology systems.
Methodology

Sample Selection

The target population was approximately 18,000 students, enrolled in the Spring 2000 semester, studying at the undergraduate and graduate levels. Using a research data table as a guideline, the target number of responses was 400 usable surveys (Gay, & Airasian, 2000).

A random list of 1000 registered student computer-users was obtained from the vice-provost for technology at Bowling Green State University. A stratified random sample was used in order to obtain a proportional mix of undergraduate and graduate students. Application was made in December 1999 to the Human Subject Review Board of Bowling Green State University for authorization to conduct research with human subjects. The authorization is attached (see Appendix B).

Instrumentation

The electronic survey consisted of three (3) demographic questions, ten (10) questions regarding how e-mail is used, and eight (8) questions regarding the student’s perception of the purposes of his or her e-mail messages (see Appendix A). Some of the aggregate data collected was not be applied toward the research questions, but rather will be applied toward other purposes of the technology office of BGSU.

The questions were preceded by a paragraph disclosing the purpose of the survey, a statement of confidentiality, and the explanation that electronic return of the survey would be taken as consent to participate. It also estimated the time of completion and gave brief instructions.

Procedures

Software was purchased by the technology office of BGSU to facilitate the formatting, delivery, return of the instrument and data compilation. The software used was EForm, distributed by Beachtech.com (EForm, 1999). The software was paid for and
retained by BGSU with the understanding that the researchers will share what is learned about this particular methodology with the technology office, so that it might be implemented for other research projects in the future.

The survey was sent over the Internet to the BGSU e-mail address of each randomly selected student. When the participant opened the e-mail message, he or she saw the introductory paragraph and scrolled down to see the full survey. At the end of the message, a prompt directed the participant to select SEND and return the message to the researchers’ account.

The initial survey was sent on Sunday January 23, 2000. Because many students leave the campus on weekends but return Sunday evening, and the researchers observed that the computer labs are filled to capacity on Sunday evenings, the survey was delivered to inboxes at a time when computer use was high. The software automatically re-sent the survey to all unresponsive participants, once after 7 days and once after 14 days. There was a software safeguard to prevent multiple responses from the same participant.

Data Analysis

Demographic data was calculated to describe the sample in relation to the population with respect to gender, academic level, and residence location.

The central research question was answered using frequency counts and descriptive analysis. The sub-questions were analyzed to investigate response differences between subsets of the sample. The null hypothesis stated that there is no difference between academic use and personal use in the population. The alternate hypothesis stated that there would be a difference between the academic use and personal use.
Findings

Before the findings are discussed it is important to reiterate the purpose of the study. The purpose of this research study was to determine student usage of e-mail at Bowling Green State University (BGSU). Specifically, the researchers wanted to determine to what degree students were using e-mail for academic and/or personal purposes. To obtain this information the researchers asked one overarching question, how do students at Bowling Green State University perceive their use of e-mail. In addition, several sub-questions were asked to show more specifically how students at BGSU are using e-mail. The sub-questions were the following:

• For what purposes are students using e-mail?
• Are students using e-mail primarily for academic purposes?
• Are students using e-mail for primarily personal purposes?
• How do students perceive that they use their e-mail?

The researchers received 315 out of 999 surveys denoting a response rate of 31.5 %. For the purpose of this study, the researchers define e-mail use as students reading or sending electronic messages from BGSU or alternate e-mail account. Academic use was defined as communication with instructors or communications with others about class or academic subjects through the use of e-mail. Personal use was defined as communications sent or received for social or personal business purposes. The results are as follows:

For the overarching question “How do students at BGSU perceive their use of e-mail?” the data revealed that 84.1 % of the 315 respondents perceived that primarily use e-mail for academic purposes.

Primary Use of E-mail: Academic Purposes

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<th>Frequency</th>
<th>Total Respondents</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Academic Purposes</td>
<td>265</td>
<td>315</td>
<td>84.1%</td>
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A crosstabulation was also performed to investigate if there was a difference between males and females with regard to their perceive e-mail usage. Interestingly, the crosstabulation showed that 84.7% of the 72 male respondents perceive their e-mail usage for academic purposes, as did 85.7% of the 193 female respondents.

Primary Use of E-mail: Academic Purposes by Gender

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<tr>
<td>Respondents</td>
<td>72</td>
<td>193</td>
</tr>
<tr>
<td>Percentage</td>
<td>84.7%</td>
<td>85.4%</td>
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The first sub-question was asked “are students using e-mail primarily for academic purposes?” Specifically, Questions 14 through 17 of the survey were designed to assess specific academic usage. Question 14 asked students to what degree they communicated with their instructor about class work. 83.2% of respondents stated they either often or occasionally communicated with their instructor about class work. Question 15 asked to what extent respondents communicated with their instructor about things other than class work 70.3% of the respondents rarely or never communicated with their instructor about things other than class work. Question 16 was designed to ascertain how often respondents communicated with classmates about classwork. 42.8% of the respondents stated they often or occasionally communicated to classmates about classwork. Finally, Question 17 evaluated to what extent respondents communicated to someone other than the instructor or classmates. The survey results showed that 73.7% of the respondents communicated with someone other than the instructor or classmates about classwork.

The next sub-question probed to what extent students used e-mail for personal usage. The researchers designed questions 18 through 20 to gauge the perceived amount of personal usage. Question 18 asked how often respondents communicated with a friend at BGSU. 64.1% of the respondents maintained that they often or occasionally communicated with a friend at BGSU. Question 19 asked to what extent respondents communicated with a friend/family member long distance. An overwhelming 79.1% of the respondents stated that they rarely or never communicates with friend/family member long distance. Lastly,
Question 20 asked how often respondents communicated with someone for personal business. The data showed that 60% of the respondents noted that they often or occasionally used e-mail for personal business. However, it is worth noting that 26.9% of them stated that they never used e-mail for personal business. Overall, 14.6% of the respondents’ survey said that they perceive their e-mail primarily for personal use.

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<th>Frequency</th>
<th>Total Respondents</th>
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<td>46</td>
<td>315</td>
<td>14.6</td>
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Again, the crosstabulation showed a fairly comparable percentage between males and females in terms of their perception of e-mail being use primarily for personal purposes.

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<th>Male</th>
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<tr>
<td>Respondents</td>
<td>13</td>
<td>33</td>
</tr>
<tr>
<td>Percent</td>
<td>15.3%</td>
<td>14.6%</td>
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Conclusions

This research convincingly suggests that students perceive that they are using their e-mail primarily for academic purposes. This conclusion came as somewhat of a surprise to the investigators, as it was assumed that social and other personal use, particularly among undergraduates and underclass students, would be more prevalent. The conclusion was quite the opposite.

The preference for academic use reflects the behavior of freshman and sophomore students, as they were the primary respondents to the survey. It is noteworthy that only four seniors and a lone junior responded to the survey. Although there are a number of ways that this response rate might be explained, one explanation might be a generational difference, either on the local or national level. At the institutional level, the recent change in e-mail systems might have led the seniors and juniors to a very different early-college
Students’ use of e-mail

experience with e-mail than the freshmen and sophomores. On the national level, some have speculated that a new generation is entering college-age (Strauss & Howe, 1991; Strauss & Howe, 1997), one which has a different world view and a unique experience and relationship with technology. While there is no way of telling what the juniors and seniors might have said about their academic or personal use of e-mail, there seems to have been a differential reaction to the survey itself.

The reported use of e-mail for academic versus personal purposes was nearly identical for men (84.7% academic, 15.3% personal) and women (85.4% academic, 14.6% personal.) Although there is a societal belief that men use the Internet differently than women, a recent study by the Stanford Institute for the Quantitative Study of Society, in its national Internet survey of 4000 respondents, found only a "faint hint of a gender gap" (Nie & Erbring, 2000, p. 5) in Internet use. The relative comparability of men's and women's use found in the general population by the Stanford study is supported by these results with college students at a single university.

One of the purposes of this investigation was to provide specific information to administrators for use in technology decision-making. One finding was that most students have acquired an alternate e-mail account, and almost half of them prefer the alternate account to the BGSU account. Preference for alternate accounts is especially troubling given the high degree of reported academic use. Further local research is needed to find out why students prefer alternate e-mail accounts to those provided by the university, and to see if BGSU accounts are not meeting student needs.

The overall reporting of heavy use for academic purposes was supported by the responses to the more specific questions about use. While a large majority of students said they occasionally or often e-mailed instructors about classwork (83.2%), only 23.7% e-mailed instructors about other things as often. While only about half of students said they e-mailed classmates about classwork occasionally or often (42.8%), 73.7% of them occasionally or often e-mailed people other than the instructor or classmates about academic
Students' use of e-mail

matters. Students seem to utilize e-mail as a mode of communication for academic matters. Further research would need to be done to determine if students report relatively low e-mail interaction with instructors about non-academic matters because they discuss those topics via other means of communication, or because they simply do not communicate often with instructors about non-academic matters.

When students did use e-mail for personal purposes, they reported using it more often to e-mail friends at BGSU (64.1% used it occasionally or often) than they did to communicate with friends and family long distance (only 20.9%). It does not appear that e-mail is being used to stay in touch with parents or high school friends. Because BGSU is a regional state institution, it may be that students have frequent opportunities to stay in touch through visits or inexpensive long distance phone calls, or simply that they prefer the more personal forms of communication.

It was interesting to note that 26.9% of students reported having never used e-mail for personal purposes such as banking or purchases. While this does not mean that students are not using the Internet for personal business (they might be using web-based forms), it does indicate that a quarter of the respondents have not utilized e-mail for that purpose at all.

If students are using e-mail primarily for academic reasons, the urgency and importance of effective and service-orientated technology systems at universities is only magnified. As student cultures integrate e-mail use into the very definition of successful navigation of the university's academic activities, weak or interrupted e-mail systems have a greater potential to impede the university's academic mission and students' success. Administrators might use these findings to reaffirm both the importance of expending resources on the e-mail systems and the importance of measuring technology effectiveness from the end users' point of view.

Further research is needed to clarify the meaning of these results to BGSU and other campuses. First, because this study was limited to a single campus, it should be
applied to other student populations with caution. However, the high level of academic use might suggest that other campuses examine the meaningfulness of e-mail to their own academic processes. Second, at BGSU, there are several areas that could be explored more fully. The difference in response by class could be examined, especially as the freshmen and sophomores of this study move into the upper-class positions. Graduate student use should be examined separately. Research could be conducted to determine if instructors and administrators report similar levels of academic use for students from their perspective, or report similar levels of university-related use themselves. The high use of alternate e-mail accounts among students needs to be investigated to determine why alternate accounts are needed and preferred, and if such information might be used to improve the university's e-mail service.

In conclusion, the results of this study emphasize the importance of reliable, efficient, user-friendly e-mail systems for students. Administrators should understand that their efforts and resources expended are justified by the high academic use of e-mail students. Further, as students use e-mail as a frequent academic tool, allowing an e-mail system to become weak, ineffective or cost-prohibitive might have a substantial negative impact on the academic goals of the university. Such technology has become a part of the fabric of the student academic experience.
References


Appendices

Appendix A: Human Subjects Research Board letter
Appendix B: BGSU E-mail use Instrument
Appendix C: Crosstabulation
BGSU E-Mail Use Survey

This survey will be used to examine patterns of BGSU students’ e-mail use. Your responses will be held in strict confidence. Only the study’s coordinators (three doctoral students) will have access to individual responses. Returning this e-mail implies that you agree to participate in this study.

We estimate that this questionnaire should only take about 5 minutes to complete. Please select “REPLY” from your pull-down menu or button bar, answer all questions, and then electronically SEND the message. Please respond by Sunday, February 27. Thank you!

Janice J. Gerda, George Timmons, and Chase Wilson, Doctoral Students

Basic Information

What is your sex? Male Female
What is your student status? Freshman Sophomore Junior Senior 5th year or later Graduate Student
Where do you live? On-campus Off-campus

E-mail Use Information

How often do you check your BGSU e-mail account in a typical week?
- 0-10 times
- 11-20 times
- 21-30 times
- More than 30 times
Do you use an additional e-mail account? (e.g., Hotmail, AOL, Yahoo) Yes No
If you have more than one account, which one do you prefer to use?
- BGSU e-mail account
- Alternate e-mail account
What time of day are you most likely to check your account?
- Morning
- Afternoon
- Evening
- Late night
Where are you most likely to check your account?
- Home
- Campus lab
- Work/office
When e-mailing your instructors, which account(s) do you primarily use?
- BGSU e-mail account
- Other e-mail account
- Don’t e-mail instructors
When e-mailing your friends/family, which account(s) do you primarily use?
- BGSU e-mail account
- Other e-mail account
- Don’t e-mail friends/family
What time(s) of day do you usually e-mail your instructors?
- Morning
- Afternoon
- Evening
- Late night
- Don’t e-mail instructors
What time(s) of day do you usually e-mail your friends/family?
- Morning
- Afternoon
- Evening
- Late night
- Don’t e-mail friends/family
Have you had a class at BGSU that required the use of e-mail? Yes No

How often do you use e-mail for the following purposes:

Communicate with an instructor about classwork
- Often
- Occasionally
- Rarely
- Never
Communicate with an instructor about things other than classwork
- Often
- Occasionally
- Rarely
- Never
Communicate with a classmate about classwork
- Often
- Occasionally
- Rarely
- Never
Communicate about academic matters with someone
other than your instructor or classmates
Communicate with a friend at BGSU
Communicate with a friend/family member long-distance
Communicate with someone for personal business (ie., banking, purchases, etc.)

Often  Occasionally  Rarely  Never
Often  Occasionally  Rarely  Never
Often  Occasionally  Rarely  Never
Often  Occasionally  Rarely  Never

For what purposes do you PRIMARILY use your BGSU e-mail account?
Academic purposes   Personal purposes

Thank you for your time. Please select “SEND” from your pull down menu or button bar now.