Introduction

This report discusses how students and teachers view student e-mail use in the sixth grade at a middle school. It provides data and analysis from questionnaires and observations. It also includes speculations for further studies and integrates comments from research in the field of teaching with technology. I have deleted the name of the school. This project was completed for a Master's Class (Backgrounds of Technical Communication) at Michigan Tech.

Purpose

Computer technology provides opportunities and problems for students and teachers. I wanted to know what process personnel in a local school district follow when they decide to bring a new technology, in this case e-mail, into the school environment. I also wanted to understand how the integration of new technology is viewed by those who use it, as well as by those who share the environment in which it is used. In other words, how does new technology change the environment; how are those changes perceived; and how can those changes be managed?

Problem

This year, sixth graders were given access to e-mail in school. Teachers have been concerned that this has caused an increase in off-task and negative social behaviors in school. This problem seemed to illustrate the phenomenon identified in the literature: to be successful, information and computing technology must be incorporated in the school environment along with plans for its use, training for its users, and a system for evaluating its usefulness. My first purpose was to determine if there was a lack of preparation in this case. My second purpose was to determine if e-mail caused an increase in off-task and negative behaviors among sixth graders.
Scope

Because this project was constrained by time (a few weeks), I consider it a pilot project. My research addresses a local issue with broad implications because of the social and technological complexities it encompasses. This project strains to branch in at least three directions. The first direction points toward planning processes for incorporating technology. The second strand points toward the effect technology, in this case e-mail, has on users in the environment of school. The third strand points in the direction of pedagogical purposes for e-mail. Again, this pilot study could only skim the surface of these issues to test for levels of agreement and understanding among the 13 students and four sixth grade teachers who answered questionnaires.

Body

Methodology

The data that I gathered initially came from informal interviews and observations collected over several months. As a substitute teacher, I had the opportunity to know my site well. I spoke with teachers, students, and administrators. I observed students interacting in hallways, classrooms, and the library. This “teacher-research” was valuable, though unfocussed. When the project was approved, I composed two questionnaires with comparable, though differently aimed, questions. Thirteen students were selected by their homeroom teachers to complete questionnaires. In addition, all four of the sixth grade teachers completed teacher questionnaires (see appendix). The teachers answered five closed questions and three open-ended questions. Students answered seven closed and four open-ended questions.
Results (teacher questionnaires)

I discovered that teachers and administrators are frustrated by problems resulting from student e-mail use. In conversations, both the principal and all four teachers expressed concern that students use e-mail to “spread lies” and to gossip. Questionnaires confirmed this perception.

Answers to teacher question #3

Have there ever been complaints by teachers, students, or parents about middle school students using e-mail? (please circle one)

<table>
<thead>
<tr>
<th></th>
<th>Yes (specify)</th>
<th>No</th>
<th>Maybe</th>
</tr>
</thead>
<tbody>
<tr>
<td>gossip/ rumors</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>students sending mean messages (putting others down)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nasty messages sent among students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>parents, teachers, students</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 1

Two questions were dedicated to the current daily purposes for student e-mail use. Both sets of answers confirm the importance teachers feel students place on socializing via email (one teacher did not provide an answer for Q#1).

Answers to teacher question #1

"Students use e-mail to help them do school work in the following ways (Please check all that apply)

<table>
<thead>
<tr>
<th></th>
<th>Discuss work</th>
<th>Get assignments</th>
<th>Contact teachers</th>
<th>Other</th>
<th>Not used for school work</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

“Finding bibliography information/ very rare)
Two teachers included comments with their response to question #2, saying they had “never seen it used in these other ways.”

**Answers to teacher question #2**

**Please rate students’ reasons for using e-mail during school**

(1 = highest priority/ 6 = lowest priority)

<table>
<thead>
<tr>
<th>Reason for Using Email</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discuss work</td>
<td>3</td>
</tr>
<tr>
<td>Get assign.</td>
<td>5</td>
</tr>
<tr>
<td>Contact teacher</td>
<td>6</td>
</tr>
<tr>
<td>Socialize</td>
<td>1</td>
</tr>
<tr>
<td>Contact parent</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
</tbody>
</table>

*only one teacher rated the options in question #2

Figure 3

Three teachers believe that there is not an “appointed” teacher or staff member who supervises e-mail use; although in discussions it was clear that the librarian was perceived to be the person who fills this role.

**Answers to teacher question #4**

**Is there an appointed teacher or other staff person who manages (troubleshoots, helps, or supervises) student e-mail use?**

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>Usually</td>
<td>0</td>
</tr>
</tbody>
</table>

"I don't allow e-mail in my classroom, because I may not agree with what a student is sending—and really it's mostly "socializing" via computer."

Figure 4
Question #5 asks teachers to consider other purposes for which students and teachers might use e-mail. Teachers say they are open to some use of e-mail in school.

Answers to teacher question #5

Is there any other type of e-mail activity that you or your students would engage in if it were available and easy to use? (such as listserves)?

Please circle one:

<table>
<thead>
<tr>
<th>Absolutely</th>
<th>Probably</th>
<th>Maybe</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5

Related to question 5, question 6 is an open-ended request for teachers to suggest ways that e-mail might be beneficial to students.

Answers to teacher question #6

In what ways might e-mail help students socially and academically in school?

• “If they used it for: contacting parents/teachers/talking about assignments, then I think academically they may get an extra “boost.” Socially—I don't see a plus side to this aspect.”

• “Academically—should/could be used to keep track of HW assignments. Socially—I see no place for it in the school.”

• “Ask teachers questions regarding homework, instructions, due dates, etc. Learning with students outside the school.”

• “Help with homework, study groups.”

Figure 6
Questions seven and eight both are aimed at testing the teachers’ level of awareness about their district’s technology plan and their own plans. One teacher left these questions unanswered.

**Answers to teacher question #7**

**Does your school have a technology plan? If so, who constitutes the committee that forms and carries out a school technology plan?**

- “I am not sure.”
- “I think we have a technology plan put in place by our technology coordinator. However, this person does not have to do the main part in enforcing policy—our librarian does. This creates a problem.”
- “I believe our school has a “plan in the works.” Many new computers (and labs) have been put in to place in the last few years. There is a tech. Committee and tech. Coordinator, but I’m not real familiar with the role of either.”

**Figure 7**

**Answers to teacher question #8**

**What do teachers say they want to be able to accomplish with computer technology in general, and e-mail in particular, at school?**

- “Have a working knowledge of internet and word programs. Help with studying, group projects.”
- “I say... if it’ll enhance learning, great; if it’s just there and used because “technology use is important” that doesn’t help our #1 goal—to educate students in academic areas.”
- “I don’t know what others say, but I would like to see the kids have access to the technology available, but mostly the hows of using it effectively. I see no need for e-mail in school unless we can come up with more guidelines for its use (which would be hard to regulate).”

**Figure #8**
Results (student questionnaires)

Thirteen sixth grade students were chosen at random to answer questionnaires. The questionnaires contained seven closed questions and four open-ended questions. The first closed questions elicit information regarding why students use e-mail, as well as how much time they use e-mail in school. Not surprisingly, ten students rated “Socializing” as their #1 (8) or #2 (2) priority for using e-mail during school, as illustrated in Figure 1a.

Answers to student question #1

Please rate your reasons for using e-mail during school

(1=highest priority—6=lowest priority)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socializing</td>
<td>8</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Contacting parents</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Getting assignments</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Discussing school work</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Contacting teachers</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
</tbody>
</table>

*one student identified the Other category as “for fun” (rated 2)

Figure 1a

Answers to student question #2

About how long have you had e-mail at school?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All year</td>
<td>7</td>
</tr>
<tr>
<td>Half the year</td>
<td>5</td>
</tr>
<tr>
<td>Started recently</td>
<td>0</td>
</tr>
</tbody>
</table>

* One student wrote in “never.” Another student offered this comment: “but they didn’t let us use e-mail for awhile because of bad e-mails”

Figure 2a
In answer to the suggestion that e-mail helps with schoolwork, eight students answered that e-mail is sometimes helpful to them, but no students rely on e-mail for help with schoolwork.

**Answers to student question #3**

**Does e-mail help you with schoolwork? Please circle one.**

- Yes, I rely on it 0
- No, it doesn’t help me at all 5
- Sometimes, but I don’t rely on it 8
- *One student wrote, “I hardly need help on work.”*

Figure 3a

For question #4, a blank was provided for a write-in answer to “Other.” One student found this option useful, and vented his or her apparent frustration with e-mail.

**Answers to student question #4**

**How much time do you spend with e-mail each day (on average)?**

**Please circle one.**

- Up to one hour everyday 1
- Between one and two hours everyday 1
- More than two hours everyday 0
- I don’t use e-mail regularly, so I can’t really say 5
- Other* 1

*“Never! I hate e-mail and I wish I would have never gotten one.” Two students estimated their time with e-mail at around 30 minutes daily.

Figure 4a

Questions five, six, and ten address the purposes for and public opinions about student e-mail use at school. For #5, three students included comments on the line provided. And for
#6, one student shared an opinion he or she had encountered. Note that eight of thirteen students have heard adults say that e-mail is a distraction.

**Answers to student question #5**

What opinions have you heard adults express about students using e-mail at school? Please circle as many as apply. Email

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helps students stay organized</td>
<td>2</td>
</tr>
<tr>
<td>Is a distraction</td>
<td>8</td>
</tr>
<tr>
<td>Should not be allowed in school</td>
<td>5</td>
</tr>
<tr>
<td>Helps kids learn to write better</td>
<td>1</td>
</tr>
<tr>
<td>Must be monitored by teachers</td>
<td>3</td>
</tr>
<tr>
<td>Some other opinion you have heard:</td>
<td>3</td>
</tr>
</tbody>
</table>

*"should be allowed."  "It helps in some ways."  "It keeps them occupied."

Figure 5a

**Answers to student question #6**

Please rate your level of agreement 1=strongly agree; 2=agree; 3=no opinion; 4=disagree; 5=strongly disagree

<table>
<thead>
<tr>
<th>Opinion</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email helps kids stay organized</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Email is a distraction</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>E-mail should not be allowed in school</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>E-mail helps kids learn to write better</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>E-mail should be monitored by teachers</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

Some other opinion you want to share: “I think e-mail is useless, that’s why we have the phone.”

Figure 6a

Responses to question #10 which tests students’ knowledge of e-mail rule breaking, were widely dispersed.
### Answers to question #10

**Do you know of a situation where students at your school spread misinformation, like rumors or even lies, about other kids through e-mail?**

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, it happens a lot</td>
<td>4</td>
</tr>
<tr>
<td>Yes, but it happens rarely</td>
<td>2</td>
</tr>
<tr>
<td>Yes, it happened one time</td>
<td>1</td>
</tr>
<tr>
<td>NO</td>
<td>5</td>
</tr>
</tbody>
</table>

**Figure 7a**

The following student responses are to open-ended questions about students’ experiences with e-mail at school. They are complete and unrevised.

#### 7. What rules must you follow to use e-mail at school?

- Don’t have e-mail at school.
- No sending nasty messages and it has to be a hotmail account.
- Don’t send bad letters.
- We need to have a better monitoring system.
- We can only check the e-mail we gave them at the beginning of the year and we shouldn’t be writing bad things.
- Don’t say anything that will get you in trouble and Don’t let E-mail get in the way of your school work.
- Don’t send anything nasty to anyone, and Stay where you’re supposed to.
- Only when they say that you have to get off, you have to.
- No bad e-mails can be sent.
- No bad words or letters. No going in others E-mail.
- No swears, you can’t go in anybody’s but your own, etc.
- Don’t look at thing that are not aloud in school.

#### 8. Describe the worst experience you’ve had with e-mail.

- Don’t have one.
- None.
- I’ve never had a bad experience, I just think it’s really boring!
- No comment I really haven’t had a “Bad” experience.
- Somebody getting my password and say Bad stuff about me.
- Someone broke into my email.
- Having going on vacation and all my email was deleted
- I really haven’t had a bad experience.
- None.
- None.
- People I don’t even know e-mail me porn sites.
- None.

#### 9. Describe your best e-mail experience.

- Don’t have one.
- None.
No comment
I just started using it.
When nothing was wrong.
Getting to talk to my Dad
I can’t say.
For Easter I got baby butts painted like Easter eggs.
None
When I started writing to someone I liked.
None.

11. Is there anything else you would like me to know?
That’s about it.
No. That is about it.
nope
no
No.
Not really that is all I can think of.
E-mail is the best way of shopping and talking to your friends after school.
No.
No.

Analysis

The inherent problems of surveying sixth graders is revealed in question #10, (see figure 7a). Seven students believe the rules have been broken. Five students believe the rules have never been broken. Question #10 may be a very unreliable question, the students may be responding in age-typical ways, or both phenomena are working. Apparently there are rules, as evidenced in the question seven narratives, but we can assume that these rules have been broken because one student wrote in (see figure 2a) that her time on e-mail had been interrupted because the rules had been broken and e-mail was turned off. This student’s voluntary comment was confirmed by the principal, teachers, and other students during informal interviews.

Question #7 sheds some light on question #10: that students do understand there are some rules to follow, and most are willing to articulate at least a general sense of what those rules are. Question seven indicates that students know that they shouldn’t send “bad” or “nasty” messages or use “bad” words or “swears.” Again, this is quite age appropriate. Students are aware at this age of rules and social realities; however, they are reluctant to
reveal complete knowledge of when social realities and rules have been defied. Follow-up interviews could prompt students for more specific knowledge of their perceptions of how the e-mail system of rule-breaking and punishment operates.

Eight students say they have never had a “worst” experience on e-mail, and six students say they have never had a “best” experience on e-mail. Although some students report bad experiences with e-mail, they are the result of somebody else’s actions. According to these narratives “somebody broke into my mail, somebody deleted my mail, somebody sent me porn sites. . .” and so on, indicating that knowledge of rule breaking is fairly general, and there have been victims of “rule-breaking.” The rules that students cite are the same problems that teachers identified (see figure 1). In addition to the problem of “spreading gossip” etc., teachers are concerned that students use e-mail for socializing which is equivalent to being off-task.

Teachers have a sense that students carry out on e-mail a heightened form of note-passing, insulting, and being cruel to other students. They have expressed on many occasions over the year that “this group” has been more of a problem in this regard than “other groups.” However, this research cannot determine whether e-mail serves the disruptive function that teachers claim it serves, i.e. an increase in negative social behaviors. It does suggest that while some students perceive the same negative phenomenon, a majority of students prefer to use e-mail to socialize, despite the negative potentials. This indicates that students are willing to take the risk that rumors and gossip will take place on e-mail, and that it’s still worthwhile to have access to it during school.

In order to test the possibility that instances of gossip and rumors increase because of e-mail, a quantitative study would have to be done, preferably over time. This might be useful, but it is risky, and insists that the status quo be maintained to serve the purpose of research.
This is irresponsible and not productive in ways that can serve teachers and students now. More research into misuses or abuses of the internet and e-mail are not as useful as turning the focus of inquiry toward cases of positive uses for e-mail in school. This research suggests that teachers agree that e-mail technologies (like listserves, MOOs, and other community building derivatives) might be useful if they can fill gaps in pedagogy, or deliver instruction well.

Research shows that students are better served when teachers participate in the implementation of technology, understand its potentials, and guide its use in purposeful ways. Currently at XMS, teachers are at a distance from the technology coordinator and unsure of what plans have been made for technology in the schools. At this time they are opposed to students using e-mail, and understand that unless monitoring is consistent and disruptions are addressed promptly and fairly, e-mail will only encourage unwanted communications. Teachers are frustrated and believe guidelines must be established and enforced, but that effort would be time-intensive and difficult given the mercurial natures of both sixth grade students and e-mail. The problems facing teachers at XMS are not unique. Teachers want to have the know-how and know-why to use the tools they have at their disposal now in purposeful ways.

**Review of the literature**

Teachers at XMS disapprove of current patterns in e-mail use. They believe that students gossip and spread lies and rumors about other students via e-mail. They see no sense in providing e-mail in school for socializing. Teachers have a limited knowledge of their district’s technology plan. Teachers are open to the instructional possibilities that technologies might provide. Students report that they have heard many positive and negative opinions voiced by adults regarding the use of e-mail at school. These opinions vary widely.
Students do not rely on e-mail for help with schoolwork. They do not rate highly its use for schoolwork, or contacting parents and teachers. In short, the school environment is not enhanced by this technology at this time.

The questionnaire responses from students and teachers at XMS are echoed in the literature. They are voices of controversy common to school districts that struggle to update technology in ways that improve instruction; that participate in school reform; and that stay abreast of changes in the wired world where students will someday work. In the Friday May 12 issue of *The Daily Mining Gazette* is an article on West Bloomfield Township School District's decision to draft an internet policy. This is an admirable initiative, but comes only after a first grader spent one recess browsing an online adult site. The parents were unaware that the child had found this adult site until the child's father discovered the child "continuing his search at home." "Superintendent Seymour Gretcho said the inappropriate Internet browsing by the Doherty Elementary School student has prompted administrators to begin drafting an Internet-use policy." This points out again, that schools install technologies before they draft or implement student use policies. But schools are not to be blamed entirely for this apparent oversight. It is common knowledge that information technologies have been promoted as the answer to school reform, to student performance problems, and as an "omni-purpose" solution to school problems.

*Teaching with Technology: Creating Student-Centered Classrooms*

In the introduction to *Teaching with Technology: Creating Student-Centered Classrooms*, Larry Cuban states: "No skeptic, after reading this book, can ignore the solid evidence that the authors provide of deep, lasting changes in teaching practices—the Holy Grail sought by reformers—that occurred over time in the classrooms they describe" (Sandholtz, xiv). Cuban is referring the five Apple Classrooms of Tomorrow (ACOT) sites. This book traces the evolution of changing classroom practices as a result of Apple Computer's research.
initiative. This project, stretched over ten years of deliberate, planned innovations, observations, and evaluations, was established on the principle that classroom (or school) technology use should be based on pedagogical need. Changing classroom practices was the goal and computers were the tools. These schools received ongoing support from Apple researchers. "The overall goal was to create different forms of learning and teaching with the help of technology, not have technology determine what was to be learned or how it was to be taught" (Sandholtz, xiii). This volume is also a wonderful archive of teacher commentary tracing the changes in class rooms as information technology tools became integrated into teaching and learning practices. It is a useful book for teachers and administrators to refer to because it isn't a glory story. These are real schools, though they are benefiting from the support of a powerful computer corporation. This ten-year project (1985-1995) is a classic case study of a well-documented pioneering school reform venture. I recommend this book to any teacher k-12.

*Information Ecologies: Using Technology with Heart*

One of the most useful lessons shared in the ACOT research is the UOP (Unit of Practice) process. This process describes how teachers can "envision the components of a prospective learning activity in one integrated whole" (Sandholtz, 12). These components are listed for teachers and are quite compatible with Bonnie Nardi and Vicky O'Day's suggestions for strategic questions that should guide an organizational process of technology planning. Readers will see that *Information Ecologies* seems to borrow these instructional components of the UOP (such as identifying objectives, activities, key players, materials, and criteria) and expand them to fit the broader process of planning for technology's impact on a school ecology. The authors compare a variety of social environments where information technology is used within an "ecology." Not all of these ecologies survive. The ones that do survive apply meaningful planning processes to enhance chances for success.
Although schools more often use the metaphor of "community" to describe their place, ecology seems to embody the notion of change and development, as well as diversity, that is not illustrated quite so vividly by "community." In order to sustain a healthy ecology, Nardi and O'Day assert, members must engage in strategic questions to plan for, maintain, and assess the impact that information technology has on users and the environment of use. In chapter six of their book they define different categories of questions and list the actual questions that fit in each category. They provide discussions of each question, and state why each question is significant. Like the authors of *Teaching with Technology*, Nardi and O'Day represent the computer industry and are optimistic about what technology can provide. In contrast to the co-authors of the Apple Schools of Tomorrow project described in *Teaching with Technology*, Nardi and O'Day are not teachers themselves, but they include teacher commentary.

In one classroom they describe, students collaborate with members of the larger community to create a virtual town called Pueblo. This model offers a method of apprenticing students to the technology of e-mail without setting them free to use it as a phone or electronic note-passing device. The students who engage with the Pueblo virtual community are always on-line with a teacher or other adult member of the group. When someone behaves inappropriately on-line, there is a "gag" order that can knock the student off. (More details on how this project was managed can be found in chapter eight of their book.) The benefits of such a project, are that it has boundaries; consequences for misbehavior are immediate; and the on-line community though virtual, is more like a real community. People of different ages and backgrounds can be involved. This makes the students accountable for their work within the community. It also gives them an audience and a purpose for their on-line writing. This is an example of a long-term e-mail-like instructional activity that has great potential for training students to be responsible and purposeful e-mail users.
Expanding Literacies: English Teaching and the New Workplace

This volume, edited by Mary Sue Garay and Stephen Bernhardt, addresses both technical communicators and teachers. Its use to teachers at the middle school level is that it includes many cases of classroom collaboration with companies. Some of this collaboration is heavily dependent on electronic mail. On page 322 is a table that lists and categorizes "Types of Partnerships in K—12 Schools." The chapter where this table is found is dedicated to describing the benefits of partnerships with business. Although partnerships are not a new phenomenon, and in fact date back to the nineteenth century, the opportunities to partner are increased and expanded by electronic technologies. Some of the advantages to linking students with business over e-mail are that "[s]tudents receive increased contact with positive adult role models, improved understanding of how education relates to the world of work, knowledge of the expectations and opportunities within adult society, and an enriched curriculum" (345). This, like Pueblo, takes students out of the tight and often contentious context of their middle school social world and provides a broader context for communication.

Each chapter of this collection is written by an author who has close ties to education. Many of these teachers can relate first hand experiences with partnership projects. They also are able to articulate the pressures of standards coming from the NCTE/IRA, the federal government (SCANS), and the workplace. These educators know the difficulties of negotiating change in an increasingly electronic world. While most of the book resonates with pro-partnering boosterism, it is still quite informative, useful, and accurate. A variety of viewpoints is presented.

While the books I have just discussed are just a small number of excellent texts available to help schools cope with technology and literacy, they are rich in usable information. They
provide historical contexts, real anecdotes of success and struggle, and actual instructions and recommendations for how to plan for and cope with technology and students.

Conclusion
The lessons that these texts and the situation at XMS create can grow into possibilities for improved and safer uses of information technologies. In the current national atmosphere to speed down the "information highway," it is sometimes difficult to recommend caution. However, as HMS can attest, in order for technological innovations to succeed in schools, teachers and administrators must be cautious. As the situation in West Bloomfield demonstrates, real harm can come from seemingly innocent interactions with technology. The literature supports caution. It also supports innovation. Often, we fail to consider how caution and innovation can both be accommodated. However, the evidence in the literature and in the schools proves that for information technology to serve schools, teachers and administrators must first expand their planning processes. They also need to resist unplanned installations of new technologies. When people find a need for technology, and plan the process of installing and managing it, the community or ecology can grow and improve.

Specifically, I would suggest that HMS faculty and students draft a plan for implementing electronic technologies. I would also suggest that they draft a mission statement for its use. Some issues and initiative could be as follows:
• appoint a technology planning team (made up of a diverse group of interested people)
• determine purposes for student use of e-mail and related technologies at school
• formulate a monitoring system that prevents abuse
• discuss with teachers and students issues of free speech, copyright, and privacy,
• review the options for e-mail systems and determine if hotmail is a viable option
• establish a plan for ongoing evaluations of the school "technological ecologies"
• develop criteria for evaluating the success of the technology plan

• set goals for student and teacher use of technology

• train and test students to be responsible users. Possibly license them on a scale from
  novice to expert.

• respect technologies as tools to meet substantive, socially and academically rich, purposes

This is a beginning for reassessing and regrouping so that HMS can bring technological
initiatives into focus with "their number one objective: to educate students in academic
objectives."

This pilot project indicates that further research could be conducted to gather evidence that
e-mail produces negative and distracting social behaviors in middle school students.
However, it is my position that such research is less useful than beginning to implement a
philosophy and a plan for responsible and informed uses of information technologies as a
way to build community and enhance instruction at ___ Middle School.