Concern that computers in the classroom might alienate learners and depersonalize learning raises questions about the impact of computers on writing instruction. A study examined relationships in one school's computer writing lab among instructor, student tutors, and students through what was called the "computer lab matrix of interaction." Observations highlighted the possibility that such a laboratory can promote: (1) exchanges among participants, all of whom become co-learners; (2) the communicative nature of writing; (3) reduction of technophobia (fear of technology); (4) creativity; (5) greater success in writing instruction; and (6) reassertion of the primacy of persons over technology. (A diagram is attached.) (SG)
Facilitating Student and Teacher Empowerment in a Writing Computer Lab

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Concern has been expressed by many that, when introduced into classrooms, computers would alienate learners and depersonalize learning. For example, at a recent conference on computers and writing, one speaker described the distraction which she felt often resulted from the presence of computers. I quote here from an abstract of her talk:

Students were distracted from discussion by their computers; it is difficult for a student who can't see all her classmates to garner enough enthusiasm to exchange ideas and beliefs, especially when instead she can more easily effect a change with one keystroke on the screen in front of her. . . . If we believe that students learn best when they learn together, face to face--through collaborative papers, peer group workshops and whole class discussion--then we must think about the constraints that a computer classroom places upon our efforts to facilitate such learning.

Comments such as these raise a number of questions about the impact of computers on writing processes and writing environments. What seems to have happened, in many instances, when computers and writers are brought together in a classroom is quite different from the scene above--or at least different from its interpretation. Others describe the computer writing lab environment more positively, suggesting that it "helps individualize instruction and encourage [s] collaboration . . . allows instructors and students alike to become facilitators in the writing process" (Varone & D'Agostino, 1990, p. 6). As the coordinator of a writing computer lab for the past three years, I have had the opportunity to observe the variety of exchanges which take place among those who make use of this setting. I want to offer my reflections on these observations with the following questions in mind:

1. What are the nature and frequency of interactions among students, tutors, and instructor (s) in a computer writing lab?
2. What are the implications of such interactions in an environment where persons come together outside of the traditional classroom to develop written documents using the computer? In other words, "Does such an environment promote writing?" and if so, "How does it?"
3. How does the presence of the computer shape the nature of interactions among persons and empower them in a writing computer lab?
Perspective

One definition of curriculum which guided my thinking about a computer lab environment has been labeled practical by Schubert (1986):

In the practical paradigm, curriculum is defined as the continuous interaction among teachers, learners, subject matter, and milieu. . . . The practical definition admits as curriculum the entire culture of the classroom. Everything that happens there, everything that could influence a student, is assumed to fall within the four commonplaces (p. 310).

Given such a comprehensive definition of curriculum, one can imagine a wide range of opportunities for student and teacher empowerment.

The term "empowerment" is one which we hear frequently in pedagogical circles. But what does it mean to empower a writer? A keyword search of the ERIC database for the past seven years yielded 531 articles which contained some form of the word empower either in their titles or abstracts. The subjects of the articles include the empowerment of young writers, adult learners, persons with AIDS, and handicapped persons, to name a few. A dictionary of synonyms lists the following related terms: "enable," "authorize," "accredit," "license," "instruct," and "discipline." If we then intersect the definition of curriculum with some of the synonyms for empowerment, we arrive at a definition of an empowering environment as the interaction among students, teachers, subject matter, and milieu which promotes, authorizes, or enables all persons involved. Emig (1983) called such a milieu an "enabling environment."

Ohmann's comments about literacy, technology, and society also influenced my observations (1985). He emphasizes the increasingly important role of technology in our society and comments on the importance of setting in the teaching of technological literacy. He says, "Technique is less important than context and purpose in the teaching of literacy; and the effects of literacy cannot be isolated from the social relations and processes [emphasis mine] within which people become literate." It is these social relations and processes within which people acquire enough technological literacy to function effectively in a writing computer lab which I hope to explore.

S. Logan
Another response to technology is offered in an article interestingly titled "Confronting Technophobia" in which the author, Burch advocates what is possibly the best approach to using technology in the classroom:

The question for us is not one of doing away with the machines, nor of romantically invoking a pretechnological pastoral Eden (which never in fact was), but of keeping open the instrumental power of technologies in a proper human context. (p. 11)

The "proper human context," in this instance, might be a computer writing lab.

Setting for Observations

Most of the research into the use of computers for writing has looked at the finished products and at the processes in which writers engage to produce those products. My observations are of the social environment in which those documents were produced. They consider the social and rhetorical benefits of having students gather in one place for the sole purpose of producing written communication, communication usually preceded by discussion. The setting was one comprised of student writers enrolled in a computer-assisted professional writing course, peer tutors and lab assistants who had taken the course during a previous semester, and the course instructor. The course required the writing of a series of argumentative essays developed around topics of pre-professional interest. The lab contains fifteen networked Macintosh computers. Classes were held in a traditional classroom twice a week, and, after two scheduled sessions in the lab, the writers used the lab on their own time. On the campus of a large state university, there is little opportunity for the kind of intimate interaction which this setting offered.

In an effort to answer the guiding questions I posed earlier, I devised what I called a Computer Lab Matrix of Interaction. The matrix contains points of interaction among instructor, students, and tutors in a computer writing lab. I summarized here what seem to be the various kinds of exchanges which take place in each of these "cells." (See Figure 1 at the end of this article.)

Instructor--Students
Freire (1970) felt that "through dialogue, the teacher of the students and the students of the teacher cease to exist and a new term emerges: teacher student with students--teachers" (p. 67). This dialogue, as in my experience, centers on such issues as the topics of essays, the rhetorical or grammatical effectiveness of a piece of writing, or the usefulness of a text analyzing program. In a setting which includes computers, another opportunity for mutual dialogue presents itself as teachers and students become co-learners of the intricacies of the machine. In this situation, students often have more knowledge of the computer than the instructor. Daiute (1985) sees this interaction as a new form of collaborative learning. It is a form of collaborative learning through dialogue, the kind of dialogue of which Scudder and Mickunas (1985) speak, where teachers become "co-inquirers" with students in a "side by side relationship." This side-by-side relationship becomes both literal and figurative as teacher and student face the computer.

Berman (1987) describes this openness to exchange as a risk taking venture wherein teachers willingly make themselves vulnerable. In contrast to the risk taking is "ego teaching," Emig's term for teacher centered instruction. Emig argues that "the only ego that should be of interest in the teaching of writing is the ego of the writer, which means that the ego of the teacher has somehow to stand aside" (1983, p. 132). That these students came willingly to engage in conversation with me about their experiences in writing at the computer suggests a need for more opportunities for such exchanges.

Instructor--Tutors

Two experienced students and one intern, who will become a paid assistant next semester, tutored students in the use of the computer lab. All three persons had taken the computer-assisted version of Professional Writing during a previous semester. The instructor and the tutors had numerous opportunities for interaction as the tutors often sought help with their own writing projects for other courses or for personal use. These encounters were usually more relaxed, since the earlier and more strained student--teacher relationship no longer existed.

Last spring one of the tutors and I collaborated in the writing of a proposal which was submitted to the undergraduate dean requesting
additional funds to upgrade the lab. The tutors also assisted in reviewing software that we might want to purchase and in browsing computer magazines for new products. In addition, we also develop documentation for students to use of when they came to the lab. Tutors also attended campus demonstrations of new equipment held frequently. These experiences provided ideas for our setting. I often think that the most valuable benefits of this computer lab setting came out of the interactions between tutors and instructor because we could assume a variety of roles without the grade constraints.

Perhaps the most important kind of interaction which occurred at this intersection was one during which tutor and instructor conferred about an individual student's progress. I, of course, had the perspective of instructor in a classroom setting. The tutor saw the writing and the writer in a more informal setting and had more opportunities to observe the student at the computer. While we did not assign students to a particular tutor, they naturally come to the lab at fairly predictable times when tutor X or Y was there, and so, in effect, they did tend to work with the same students throughout the semester. The tutors submitted journals to me periodically, in which they discussed their experiences in the computer lab. Here is part of an entry from the intern, where she discusses one of the students:

Scott and I talked about his paper a little bit and then he left. I really don't get the feeling that he understands what he is doing with his paper or how or why he is going to research it. I tried to explain it to him, but when he left, he still had that blank look on his face.

Two weeks later, she made the following entry about Scott in her journal:

I helped Scott with his evaluation argument, answering questions on English grammar and about the computer. We also discussed his paper topic. Scott seems to have a better understanding now of the computer and of what Advanced Composition is all about. He seems more focused on his paper topic as well. I was beginning to worry.

Tutor--Students

These tutors scheduled their lab hours so that one of them was available to assist students whenever the lab was open. Because they are familiar with the series of argumentative essays which the students must write as well as the computer lab's software and hardware, they made the ideal peer-tutors. The students currently enrolled were more relaxed around
them, since "they're not the teacher" and would express their anxieties about using the computer and writing the essays more openly. Further, seeing persons who actually survived the experience of writing five argumentative essays and learning to use computer writing software in one semester was encouraging.

**Tutor--Tutor**

The tutors found that because of their almost daily contact, they developed a strong bond. They frequently brainstormed about ways to improve the computer lab and together produced a "Wish List" which we used in writing a proposal for the improvement of undergraduate education. They shared writing with each other, and I shared mine with them, so that critiquing took place up, down, and across. They collaborated in writing computer documentation for the lab, a collaboration which resulted in a manual issued to all students. They conferred with each other about the progress of individual students. One of the tutors described his experiences in the lab this way:

The lines of communication are very open from talking about a student's causal argument to talking about our lives. Students stop by, not just to write English papers, but to write any and all papers because the atmosphere is eu-stressful and co-stressful, not distressful. . . . We are all playing an active role in reaching this lab's goal—to create a computer writing environment where students can without stress, come in and bounce ideas off of others while writing and learning on a word processor—unity through involvement!

**Student--Student**

A report on interviews with my students after one semester of computer lab use supports an improved attitude towards writing and a better understanding of the social nature of writing. One interviewee's comments were particularly telling. I had asked her whether she exchanged ideas with classmates or asked their opinions very much, and she responded:

Actually, a lot of people asked me to look at their stuff. And I showed some of the people my stuff, but you know what I think the greatest thing about it was? After you've been here a couple of hours, you just—I know one time I had a paper due, and I came in at 4. By eight o'clock, I didn't care. The paper was due the next day. I said, I've got to get out of here. But when everybody else was here, we were
together, we were kinda like pushing each other. It was great. You say, "Oh my God, I can't deal with it anymore" and someone would go off into something about politics, or something. And then they see that you're staying. It's good. It's a good atmosphere. It's really nice here after hours. Everyone's in it together. There's really a good bond.

Instructor--Instructor

The computer lab environment has relevance particularly to instructors of writing who are struggling to find ways of authenticating writing in academia and of helping students recognize the social nature of writing. Further, the innovation certainly has relevance to those who direct Writing Centers in considering how a computer lab might help to promote writing on a college campus by providing a place where students gather solely for the purpose of exchanging ideas and expressing themselves through the written word in an informal and collegial setting. It could also promote more frequent peer evaluation and could have relevance in changing attitudes toward technology among the reluctant as they and their instructors cooperate to make the computer work for them. This innovation also argues well for the establishing of separate writing computer labs, as opposed to the generic ones where persons come to engage in a myriad of computer uses.

Reflections on Possibilities for Empowerment

I believe the observations just described suggest several possibilities for a computer lab setting which serves as a source of student empowerment, allowing students to take risks, in a non-threatening writing environment where they are open to new ways of relating to the world.

1. The computer writing lab could promote teacher-students, students teacher exchanges, resulting in a setting in which students and teachers become co-learners.

2. The computer lab could promote the communicative nature of writing, providing interactive readers who can respond immediately to what has been said or written through peer evaluation.

3. The computer lab environment could help to reduce the technophobia experienced by many as they attempt to participate in the technological revolution.
4. For the following possibility, I am indebted to a someone who wrote me after hearing me talk about these issues at another conference. He asked how training in computer writing can "stimulate the creative mindset." He wondered whether it is possible to "stimulate students to facilitate their own imagination--to somehow learn to ask "What if?" or "Why not?" as opposed to the more mechanical "How?" Valerie Arms also comments on the computer's creative potential, suggesting that "computers that enhance human skills must be used in curricula that value and reward creativity as well as problem-solving" (1988, p. 45). Perhaps a computer writing lab similar to the one just described could help promote just this kind of creativity--creating is an empowering activity.

5. Another practical advantage of this setting was highlighted in the same issue of Computers and Composition. The authors of another article found that students who are enrolled in required computer-assisted writing courses tend to finish those courses at a higher rate than those who are not, or, as the researchers say, they "tend to persist at a higher rate." This finding could provide a strong justification for the existence of a computer lab to administrators who worry about numbers and retention rates.

6. And finally and most importantly, the computer lab can be viewed as an empowering environment by reasserting the primacy of persons over technology, keeping open technology's instrumental power in a proper human context.
References


## A Computer Lab Matrix of Interaction

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<thead>
<tr>
<th>Students</th>
<th>Tutors</th>
<th>Instructor</th>
</tr>
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<tbody>
<tr>
<td>*Form bonds with others *Critique writing of peers *Discuss further material covered in class *Recognize the writing process as authentic activity in a setting where others are writing</td>
<td>*Confer outside of traditional setting *Collaborate in use of software and hardware</td>
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<tr>
<td>*Confer with students who are often in other classes with them as peer tutors *Encourage use of computer as aid to revision *Help to reduce anxiety, improve attitudes about writing *Assist with writing and computing *Invention through dialogue</td>
<td>*Brainstorm about ways to improve the lab *Collaborate in writing computer lab documentation *Confer about student progress *Critique writing *Form new relationships</td>
<td></td>
</tr>
<tr>
<td>*Assist with own writing projects *Review and share findings about software *Confer about progress of students *Collaborate in drafting proposals</td>
<td>*Collaborate on strategies for the integrating computers into writing processes *Develop professional computers and writing interest group</td>
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**Figure 1**