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Recommended Citation
Thomas, Sharon; DeVoss, Danielle; and Hara, Mark (1998) "Toward a Critical Theory of Technology and Writing," Writing Center Journal: Vol. 19 : Iss. 1, Article 6.
DOI: https://doi.org/10.7771/2832-9414.1419

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Toward a Critical Theory of Technology and Writing

Sharon Thomas, Danielle DeVoss, and Mark Hara

Technological development enables certain practices and can affect certain social arrangements, but it need not affect certain social arrangements in only one way. The trajectory of its development is not fixed, but ambivalent. It can follow several paths. —Stuart Blythe, “Networked Computers + Writing Centers = ? Thinking About Networked Computers in Writing Center Practice” (104)

In his article, “Networked Computers + Writing Centers = ? Thinking About Networked Computers in Writing Center Practice,” Stuart Blythe rejects both instrumental and substantive views of technology and argues, instead, for a critical theory of technology. According to Blythe, those who hold an instrumental theory of technology believe that technology is neutral, that it brings about only minimal changes and, therefore, only individuals can be held accountable for its misuses. Those who hold substantive views, on the other hand, believe that technology comes with certain biases derived from cultural and technical codes and that adopting technology will result in significant changes in human behavior. Generally, Blythe leans toward the substantive view because it explains how the tools, the medium, and the environment all affect human actions, in this case, writing center tutorials (96-101). Yet, in the end, he argues for the adoption of a critical theory of technology. According to Blythe, substantive theories leave us only two choices: We either adopt the technology as it is or reject it altogether. A critical theory of technology, on the other hand, opens up the possibility of change because critical theory acknowledges the substantive claim that each technology contains bias while offering us something more productive than a take-it-or-leave-
it approach. In other words, such a theory acknowledges the cultural influence of technology while looking for a way to do something about it (Blythe 102).

We cite Blythe's discussion in some detail because he describes for us the issues with which we have struggled over the past few years as we have sought to incorporate technology into our practices. Buffeted by conflicting claims—online consulting radically changes the practice of consulting (substantive approach); online consulting is not much different from face-to-face consulting if the technology is used well (instrumental)—we have struggled to find ways to determine for ourselves and our own situation how we might best make use of the technologies invading our campus and our writing center.

In our short history of integrating technology into our practices, we have found that the theory of technology we adopted was determined by the extent to which a particular use of technology was or was not congruent with our own pedagogical and theoretical stances. When our early attempts to use technology did not disrupt our usual practices, we were content to adopt an instrumental theory of technology and focused primarily on ways to use the technology to support the practices in which we were already engaged. When the technology began to change the nature of the interaction between our undergraduate writing consultants (UWCs) and the student writers with whom they were working, we moved to a substantive view and when that technology seriously disrupted our practices, we rejected it. Later, we began to understand that we could, in fact, exert some influence over the direction technology was taking the teaching and learning in our writing center and on our campus, what Blythe might describe as a move to a critical theory of technology. We began to see that what we were already doing in our Writing Center—treating student writers as co-experts and inviting them into the academic community—could provide a model for teaching with technology. This stance has allowed us to work to shape the design of the instruction that accompanies technology, both in our writing center and in classrooms across our campus.

An Instrumental Theory of Technology

Although we have always had a few computers in our writing center, we seldom used them for consulting and, for the most part, have not been a technology-driven writing center. When we followed Purdue's lead three years ago and went online, our original World Wide Web site resembled many other first sites. Concerned primarily with information retrieval, we simply posted to the Web most of our informational materials. Later, the site was reconceived and reborn as the Writer's Retreat, http/
pilot.msu.edu/~writing, an online country cottage with over 100 links to resources on the Internet to which writers could go to find assistance for their writing projects.

In this case, integrating technology into our work was a purely instrumental move and the discussion surrounding this project focused mostly on how to use the technology. We were primarily concerned about how to offer a wide range of resources housed in an inviting setting, how to make use of the graphical interface of the Web to achieve this goal, how to incorporate image mapping so that users could click on pictures linked to conceptually connected information, and how to make the site as easy to navigate as possible by a variety of users. Using technology to provide resources that writers could use on their own seemed entirely appropriate. Even when our discussions of this technology revealed a desire to project a more Burkean parlor image, and we developed the country cottage theme, we continued to hold an instrumental view of the technology we were using, and the site remained mostly what Lunsford would describe as a Storehouse. The technology seemed neutral and did not require any changes in our consulting practices. Mostly, student writers made use of this resource on their own; the interaction between undergraduate writing consultants (UWCs) and student writers was not affected.

Moving to a Substantive Theory of Technology

At the same time as we were developing our OWL, we began to investigate online consulting and this experiment radically changed our view of technology. Because e-mail is widely used on our campus, we started with asynchronous, online consulting. Students enrolled in a first-year composition course in our residential natural science college e-mailed their papers to our writing center account and then scheduled an appointment with a UWC who used the regularly scheduled appointment time of fifty minutes to respond to that paper by e-mail. We experimented with this design three times during the semester. Each time about ten students e-mailed their papers and four or five UWCs did the responding. All of the UWCs who tried online consulting found that it disrupted their usual practices.

In her study of this experiment, one of the graduate students working in the Writing Center reported that the most common complaint among the UWCs was the loss of a give-and-take interaction with the student writers; the opportunity to use talk, to engage in conversation, to elicit possibilities from the writer. Because they were engaged in a one-way response and could not gauge the writer’s reaction to their responses, they often gave more information than necessary. Later, we used a chat
room format that allowed for synchronous conversations but even though the synchronous format supported greater give-and-take, both the UWCs and the student writers were dissatisfied with the arrangement. The UWCs complained that because they had only words on a screen to evaluate their interaction with the student writers, they fell into a far more evaluative mode, one they described as acting like "little teachers." The students said they preferred coming to the Writing Center where they could meet face-to-face with a writing consultant (Pennington).

In this case, the introduction of technology substantially altered our consulting practices. Once we realized that technology "will inevitably change the nature of human actions," we had to decide whether we would accept or reject that technology (Blythe 97). In the end, we were unwilling to accept the way technology was disrupting our pedagogical practices. The talk that occurs between two peers over a particular piece of writing is central to our theoretical stance. Even though the chat room format allowed for synchronous conversations, its restrictive one-speaker-at-a-time modality elicited long-winded, "teacherly" responses from our UWCs that resulted in one-sided conversations. Because our belief in the importance of the writer directing the conference was effectively undermined, we rejected this use of technology and dropped online consulting.

**Toward a Critical Theory of Technology**

Our response to this development was to rethink our uses of technology. We wanted to use technology to support writing in a way that would not disrupt our practices, that was congruent with our particular theoretical and pedagogical stances. We did not want to find ourselves, once again, forced either to accept or reject technology. Then an unexpected event occurred that radically changed the technology that was available on our campus, and we began to imagine new ways of integrating technology into our work.

From the beginning of the establishment of the Writing Center, over five years ago, we have always worked from a student-centered learning philosophy. Both our consultations with student writers and our workshops for faculty are built on this philosophy. Through consultations, workshops, summer institutes, and the establishment of peer writing groups, we endeavor to convince faculty that inviting students into the intellectual conversations of the discipline will enable those students to move more quickly from novice to professional, both in their writing and in their mastery of course information, but this process is often slow and we sometimes feel we are engaged in a lonely line of work. Like most writing centers, we often encounter resistance to these ideas. The advent of greater technological resources on our campus, however, resulted in an unexpected ally.
In the spring of 1996, our president, Peter McPherson, declared that Michigan State University had entered “a new age of access” and presented the MSU Technology Guarantee to the university community. The guarantee (available to read and/or listen to online at http://www.msu.edu/events/techinfo/) is composed of six promises, each emphasizing access to knowledge, and includes the promise of an intensive, quality-based technological experience for undergraduate students with affordable lifelong technological access for MSU alumni. As part of the “new age of access,” all students were given four megabytes on the university server for their own use. Faculty were given ten megabytes to use for classes.

One result of the Technology Guarantee was the emergence on our campus of high-tech classrooms equipped with technology carts (developed by a faculty member on our campus) that provide faculty with a computer, a VCR, an Internet connection, and a link to an LCD projector. Even though one of our President’s Guiding Principles is “achieve more active learning” and faculty development workshops frequently focus on strategies for inviting students to be engaged learners, this early approach to technology-supported teaching and learning was designed to support information passing, not to encourage student-directed learning and dialogue nor to invite students into the intellectual discussions and work of the academic community.

As Blythe has pointed out, particular technological gadgets are shaped by the perceptions of individuals in particular situations (101). In our case, the technology carts, designed to support information dissemination, were shaped by the perception of a particular individual and, therefore, reflected his particular set of beliefs about teaching and learning. Our task was to provide an alternative approach to the use of technology (including technology carts), one that would support a more student-directed pedagogy of teaching and learning. If we could not change the technology invading our campus, we could at least work to shape the design of the instruction that would accompany it.

Working from an experience one of us had engaged in as a participant in the Computers in Writing Intensive Classrooms (CIWIC) summer institute at Michigan Technological University (MTU), we began to think about how we could design an alternative approach to the use of the technology available on our campus, one that would support a more student-directed pedagogy of teaching and learning. In the MTU institute, although the participants met face-to-face every day, they also used technology to continue discussions begun in seminars, to search for information on the Internet, to develop their own Web pages, and to share with one another what they were learning. With the addition of digital camera photos and, later, some video applications, one of the graduate
students updated the web site each day so that during the two weeks the participants were together, the institute unfolded, simultaneously, on the Internet. (See http://www.hu.mtu.edu/ciwic/96/.)

In this model, technology was used to support the kind of learner-directed practices we advocate. On our campus, however, we saw technology being used primarily to support a stand-and-deliver approach to teaching and learning. How could we make another option available? How could we wed the MTU approach to technology to our programs for providing writing support and, once we did develop the programming, how could we get that information to faculty and students on our campus?

Because we make extensive use of classroom presentations both to advertise the support we offer to faculty and students and to provide leadership for the use of writing to support teaching and learning on our campus, we naturally turned to that format. Based on our beliefs about the teaching and learning of writing and our experiences working with faculty and students, these presentations/workshops almost immediately took shape in three parts using technology to extend classroom conversations, to conduct research on the Internet, and to publish on the World Wide Web. During the first semester of our work in this area, we only advertised by word of mouth. Nevertheless, by the end of the semester, we had conducted 15 pilot sessions with faculty and their students willing to join us in this experiment.

Extending Classroom Conversations, Conducting Research on the Internet, and Publishing on the World Wide Web

Because many faculty were already using e-mail at least to contact students, and several had devised more ingenious applications, we began there. We were particularly fascinated by the use of e-mail and, later, MOOs, MUDs, and chat rooms, to extend classroom conversations. One of the best examples on our campus is the electronic, shared journal used in a required 200-level course that enrolls around 3000 students each semester. Originally, a spiral notebook was passed among the members of groups of four or five students each week, but the advent of e-mail on our campus had already enticed the instructors in the course to move to an electronic shared journal that allowed the members of each group to post to an e-mail listserv at any time. One instructor had taken this approach to an even higher level when she began teaching a first-year composition course. Every week, on the class web site, she posted one or more of the students’ small group, e-mail discussions of the course reading materials. Later, she invited the authors of some of the texts to join the conversations and she posted those interactions as well. (See an archived example of this
When we started our workshops on using technology to support writing with this example, the conversations that ensued helped students and faculty come to understand that extending discussion in this manner supported student writing because it invited students to share and learn from each other's responses to the reading assignments, it provided a forum for trying out ideas, and it gave students an audience of peers to respond to the arguments they were attempting to develop for the papers they would write.

In addition to using technology to support writing through extending opportunities for discussion, we were also interested in the Internet as a place for students to increase their knowledge about a topic and, therefore, their ability to write confidently about it. We had already been regularly responding to inquiries from students about how to cite information found on the Internet; thus, one section of the presentation focused on using the Internet to conduct research that included information on how to use search engines, how to evaluate web sites, and how to cite information found. (See information used in this presentation at http://writing.msu.edu/tech/research/default.html.)

Despite faculty claims that information found on the Internet was suspicious at best and certainly not on a par with what students could find in a library—books written by authors with reputations and journals with refereed articles—we continue to believe that exposure to a variety of perspectives and the opportunity to sift through opposing viewpoints provides an important complement to the single perspective available in a given classroom from a particular professor. Certainly multiple perspectives on an issue can introduce students to stances unlike their own and may contribute to their ability to take opposing viewpoints into consideration when they are composing their own arguments.

The Internet can even be useful as preparation for library work, as one of the first-year students who presented in our faculty development program pointed out. In response to a complaint by a librarian that going on the Internet was not the same as going to the library, she suggested that going to the Internet first gave her both an overview of the issues and some knowledge about the key players so that when she did embark on a library search she was far more well prepared.

Because the most exciting possibility afforded by access to the university server was the ability to create personal and academic Web pages, we also developed a section on publishing on the Web. In our view, the ability to publish on the Web meant students could have a wider audience for their work, potentially, a world-wide audience, instead of an audience of one (the professor). Instead of imagining their audience,
students could actually post their work to that audience, which could significantly change the way they viewed the composing process. (See http://writing.msu.edu/tech/publishing/default.html for information used in this presentation.)

The semester following the debut of our classroom presentations on using technology to support writing, we were invited by the vice provost in charge of faculty development to conduct a campus-wide workshop for faculty. The faculty and students who joined us in this presentation very ably demonstrated the ways they were moving from conversations restricted to classrooms, research limited to libraries, and writing confined to words on the page for a very limited audience, to worldwide communication, global research, and the ability to use a vast array of sights and sounds to communicate with an audience around the world. (See http://writing.msu.edu/lilly/ for examples used in this workshop.)

Disruption of Practices

Even before the presentation for the faculty development series, we had begun to experience a substantial increase in requests for our classroom presentations and for greater support, especially for publication on the Web projects. In order to provide that support, we invited those writing consultants who identified themselves as interested in Web publishing to begin to prepare themselves to consult with students and faculty working on such projects. These students came to be called Internet writing consultants (IWCs) and, before long, they were holding their own bi-weekly staff meetings and had established their own listserv where they could continue to prepare themselves to be IWCs and discuss what was unique about this kind of consulting. (See http://writing.msu.edu/eng98/ for a course our writing center is now offering to students who wish to become Internet writing consultants.)

As we began to discuss Internet writing consulting, we soon discovered that, once again, technology was threatening to disrupt our practices. In a survey we conducted in the spring of 1997, most IWCs claimed they had no trouble understanding the relationship between technology and writing, but they did have difficulty integrating Internet consulting into their conceptions of our writing center and its goals. As one consultant pointed out, "The Internet is the medium of the future, a place where reading and writing come together and a new understanding must be achieved. Internet consulting brings forth this new type of writing (not so linear, not so textual, but more technical) which requires us to tailor some of the strategies and specific theory behind the overarching goals [of the Writing Center]" (Hara 6). Similar to their experiences with online consulting, several IWCs felt that Internet writing consultations forced
them into the role of “little teachers.” One consultant, working from our well-established practice of returning responsibility for writing to the student writer, described her frustration this way, “You can’t exactly say to a client, ‘You want an image in your page? Can you think of some ways you could do that?’ You need to teach them the language and the technology to a certain extent before you can move on to whole composition issues” (Kik).

Such direct teaching can, of course, sometimes occur in regular consulting sessions but too often, in the Internet consulting sessions, the focus of the conference was the computer instead of the client and his/her writing. Many of the IWCs felt that the consultations had collapsed into the computer, that the sessions were not interactions between two people but, rather, two people’s interactions with a computer. Once again, we were faced with the problem of how to use technology and remain true to our theoretical and pedagogical underpinnings. How could we prevent technology from taking over, from transforming the nature of the consultant/student writer interaction?

Comfortable with the idea of researching their own practices, the IWCs began to discuss this problem at their meetings and on their listserv. Eventually, partially in preparation for a presentation at the annual East Central Writing Centers Association Conference, they developed a strategy that would allow us to take advantage of those characteristics of the medium that supported writing while, at the same time, protect our pedagogical integrity. They began the consultation away from the computer.

If they worked with the client to establish his/her goals for the website and developed a preliminary sketch or plan before moving to the computer, they discovered they were able to mediate the effect of the computer on the consulting session. Technology had threatened a fundamental change in the nature of the human interaction but, in this case, we were not forced either to accept or reject the technology. We were able to acknowledge the impact of the technology and look for a way to do something about it. We redesigned our instructional practices to use the technology in a way that was congruent with our learner-directed pedagogy.

“Technologies Inevitably Change Practices”

While we were negotiating the impact of technology on our practices, we continued to offer classroom presentations and workshops to faculty and graduate student teaching assistants.

As part of our preparation for these workshops, we continually
searched for examples of faculty using technology to support something more than delivery of information. Mostly, we found increasing numbers of faculty who posted their syllabi and required readings on the Web. Sometimes, they posted a list of lectures with some accompanying notes. Occasionally, we found a faculty member who treated the course web site as a resource for students and included links to useful background information for particular topics in the course, but the idea that technology might be used to invite students into the intellectual discussions and work of the academic community was not much in evidence. When we suggested that faculty might include student work on a course web site, we were often met with resistance. As James Kalmbach, author of the recent book, The Computer and the Page, has suggested, many faculty view student writing as inferior imitations of canonical works undeserving of publication (112). The idea that student work might be valued in its own right (as opposed to being seen as derivative from canonical works) and might be published on the Web alongside the course reading and syllabi was an uncomfortable notion.

Still, we continued to search and, eventually, began to find some faculty who, initially attracted by the capability of the technology to deliver information or homework or provide access to outside-of-class resources, suddenly found themselves engaged in conversations with their students and, from these conversations, began to change their opinions about students and their capabilities. In some cases, faculty had even begun to invite students to participate more fully in the work of the intellectual communities they are preparing to join.

In our College of Natural Science, for example, a group of physics professors decided to put their course online. Students in this course find their homework on the password-protected web site (http://lecture.lite.msu.edu/cgi-bin/lecture.pl ). One goal of the faculty was to be able to assign homework problems randomly so that no two students received the same set of problems. Another goal was to provide immediate feedback and this goal brought with it some unexpected changes in teaching style.

When the students experienced difficulty with certain problems, they began to e-mail the professors asking for assistance. What was of value from our perspective was the fact that in order to receive assistance, the students had to explain their understanding of the problems and the methods they had used to solve these problems, thus providing an excellent example of writing to learn. Even more impressive to us was the fact that some of the faculty responded to the students by opening up lines of communication. One professor, for example, is willing to answer homework questions up until 11:00 p.m. the night before the assignment is due and actually sets up his laptop at home with a bell on it so that he can respond to any student questions that come in. When he joined our
group for a faculty workshop on technology, he readily admitted that through this communication with the students he has discovered not only errors in the homework assignments, but alternative methods for solving the problems. A small step to be sure, but one that does begin to bring students into the conversations of the discipline.

We also discovered a professor who was teaching a course on war and film who developed a web site (archived at http://writing.msu.edu/lilly/conductresch/mackey.html) designed to provide background information the students might need to understand the films they would be viewing in the course. This web site included, among other things, war statistics, information about types of tanks, artillery, planes, and ships used in various wars, clips of important scenes from some of the films, RealAudio clips of popular wartime songs, wartime cartoons, and a link to a variety of other related sites including the Patton web site. For an introductory course in macro-economics, this same professor built a web site (http://www.msu.edu/course/ec/202/web) that includes not only the course syllabus, readings, and information on current exchange rates, the stock market, and minimum wages but also links to The Economist web site and the White House Briefing Room. Intrigued by the wealth of information available, the students were soon following the links well beyond what the professor had imagined. At a faculty workshop, the professor said he was surprised, and pleased, to discover that students were finding so much information that they often came to class with information he did not have and with questions for which he was not prepared. The result, he claims, is that more and more he is beginning to treat students as colleagues.

A few faculty have even begun to include student work on their web sites. While searching for appropriate examples for a classroom presentation on using technology in the sciences, we discovered an entomology professor who had invited students to make web sites to accompany his lectures. Now, visitors to the course web site (archived at http://writing.msu.edu/lilly/publish/whalon.html) can click on a particular lecture title and visit any number of related web sites the students have linked to that particular lecture. For example, the web site accompanying the lecture on "Manipulation and Development: Life and Death" includes links to a site with descriptions of the first five weeks in the life of an embryo, as well as diagrams and a Shockwave movie of the process. This work represents a clear invitation to students to join the academic community, to make a contribution to a university course. This web site is also an excellent resource for students enrolled in the course. If an upcoming set of readings or a lecture is on an unfamiliar topic, students can visit the web site to develop the appropriate background information they will need to increase their understanding of course material. More
importantly, when this professor offers students the opportunity to develop web sites that will be a part of the online course syllabus, he is issuing a clear invitation to students to join the academic community, to become colleagues in that discipline.

These examples of teaching and learning using technology amply illustrate the ways in which technology can complement the student-centered learning we, as writing center practitioners, so often advocate. Through presentations on using technology, we can introduce to others what we already do in our writing centers. For ourselves, working to wed technology with our approach to writing has reinforced our belief that we can push our understanding of student-centered learning beyond merely determining what the student already knows so that we can develop interactive learning strategies that start on familiar ground. We can do more than that. As Nancy Grimm has suggested, "... writing centers are uniquely situated to invite undergraduates into the intellectual work that makes a difference" (546).

Technology can help us provide a platform for students, a place for them to enter academic conversations, an opportunity for them to showcase their potential. When faculty use technology to extend classroom conversations, to introduce students to the resources of their discipline that can be found on the Internet, and to publish student work on the Web, they irrevocably alter the traditional one-way, teacher-to-student, communication pattern. Our efforts to introduce to faculty a variety of ways to use technology to support writing has taught us that we can critically change the way people teach with technology and, at the same time, we can encourage faculty to open lines of communication, to invite students into the work of the discipline, to join the academic community, to become colleagues.

A Critical Theory of Technology

Blythe has suggested that we should get involved in the design of technology (104). In our case, we seldom have the opportunity to influence the choice of technologies made available to the educational community in which we live and work. Such decisions are made at a higher administration level and the exact mechanism for influencing those decisions has never been very clear. For the most part, on our campus, technologies simply appear. We can, however, work to shape the design of the instruction that accompanies that technology so that the instruction is congruent with our particular pedagogy. To that end, we have worked to advocate using the Internet to support conversation, research, and publication in classrooms as a way to encourage faculty to invite students into the intellectual conversations and work of their disciplines.
At the same time, our presentations on using technology to support writing moved us outside of our Writing Center and made us more aware of the instructional practices focused on information delivery that are typically associated with technology on our campus. Yet, when we began to watch, more closely and over longer periods of time, the effect of technology on the teaching and learning in some classrooms, we realized that, sometimes, technology disrupts practices in useful ways and can lead to opportunities to work with faculty to shape the design of the instruction that accompanies that technology. Technologies will change practices and writing center practitioners can take advantage of that phenomenon to put forth a model for technology-supported teaching and learning that takes advantage of the characteristics of some technologies to create more opportunities for students to be in charge of their own learning, to communicate more often with their peers and their teachers, and to participate in the conversations of their disciplines as they move from novice to professional—all important avenues of support for student writers.

According to Blythe, “technological development enables certain practices and can affect certain social arrangements, but it need not affect certain social arrangements in only one way. The trajectory of its development is not fixed, but ambivalent. It can follow several paths” (104). When technology begins to alter the teaching and learning in our academic community, we do not have to accept the initial uses of this technology as the only outcome. As writing center practitioners, we might not be able to affect the design of technology, but we can engage in an effort, not only in our centers but across the campus as well, to shape the design of the instruction that will accompany that technology.
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