1 Using Computers to Expand the Role of Writing Centers

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As writing centers integrate into communication across the curriculum (CAC), electronic communication tools are reshaping and expanding tutorial instruction, adding dimensions of learning not possible in the traditional tutor and student collaboration. Consider the differences as well as the instructional value of these two very different scenarios for writing center tutorials:

Tutorial A: In a writing center with no online connection available

A student in an economics course comes in to talk about a possible topic for a paper, and the tutor tries to help her see that the topic, the future of Hong Kong when it reverts to Chinese rule, is too broad. They discuss possibilities for narrowing and, after some brainstorming, create a list of topics to consider. The student then leaves and the next day tries the library. She comes up with a few sources but wonders if she is on track. Two days later, she meets again with the tutor, who suspects that her search strategies are weak. They discuss methods for searching for information, and again, the student leaves to try out what she has just learned. The tutor watches her walk out, not entirely sure that the student now has more sophisticated searching methods at her fingertips, but hoping that she has acquired some sense of how to plunge in.

Tutorial B: In a writing center with an OWL

A student in an economics course comes in to talk about a possible topic for a paper, and the tutor tries to help her see that the topic, the future of Hong Kong when it reverts to Chinese rule, is too broad. Using their Online Writing Lab's (OWL) World Wide Web site, the tutor and student sit together at a computer and link to the OWL's collection of online search engines—gathered together for easy access—choose one of the popular search tools, and enter her topic. The search engine reports 612 items found, and as the tutor and student browse through some of the entries, the student sees how vast her net is and why she must refine her topic. The tutor explains how to narrow a search by means of the Boolean operators that can be used in a key word search, modeling for the student what it means to choose terms linked by "and" or "not," and so on. They try out some terms to limit her search, and when she is confused and seems to be losing sight of her goal, they return to the assignment sheet distributed in class, talk for a bit about what the student might want to write about, and return to some online searching, this time in the university's online catalog. The student finds some entries on the exodus of business people from Hong Kong, and this connects in her mind to a topic in her textbook about models for currency movement across international borders. After some tutorial talk, she's beginning to define her focus, and then with some clicks of the mouse, they go back to a search engine for material. This time the tutor sits back, watching how the student conducts the search, offering some advice as the student demonstrates what she is learning about how to search for information. After the student copies a source, she and the tutor link to one of the online handouts in OWL about how to integrate sources and spend a few minutes discussing how the student will incorporate sources in her writing.

As we can see from these scenarios for tutorials, OWLs can enhance tutorial collaboration by permitting the tutor to accompany the writer through writing processes to which tutors previously had no access. Electronic communication tools such as Web sites fit easily into the educational mission and pedagogy of writing centers because they encourage the kinds of collaboration that are integral to writing center theory and practice. The key terms for such theory and practice are collaboration, interaction, and individualization, for tutors meeting with writers interact in one-to-one settings as writers develop their texts. Tutorials provide a non-evaluative, low-risk space for writers to collaborate with a knowledgeable peer-to become, through questioning and discussion, an active participant in their own learning. Meeting writers during the writing process means that tutors can discuss composing strategies and can accompany writers as they move through various stages of drafting. Moving all of this to an online environment creates new opportunities and modes of instruction, some of which are not available otherwise, as well as new sets of problems to contend with. To provide an overview of this and other aspects of how an OWL can enhance CAC, I offer first a discussion of the various ways that electronic communication can be adapted to writing center collaboration, both within the center in face-to-face tutorials and also beyond the walls of the center to distance collaboration by means of e-mail and synchronous tutoring. Then, a discussion of how writing centers can also offer resources for writers and for teachers suggests other uses of electronic communication in supporting campus-wide interest in writing-intensive courses in all disciplines. Included also is a close look at our OWL at Purdue University, to illustrate concerns of funding and staffing an OWL. Finally, I offer some thoughts on both the obstacles and opportunities that arise when building OWLs to accompany campus involvement in CAC.

OWLs in Tutorial Collaboration

As evident in the scenarios offered above, incorporating an OWL into a tutorial means that a tutor can help a student learn to access and retrieve online materials, and tutor and student can then move smoothly into discussing the resources

they are finding. Helping students look more closely at the site and discussing the credibility and/or credentials of the source can easily be part of-and appropriate to---tutorial conversation. Irene Clark (1995) makes a compelling case for this role of the writing center in assisting students to acquire what she terms "information literacy," defining it as "the ability to access, retrieve, evaluate, and integrate information from a variety of electronically generated resources" (203). As Clark reminds us, "the current process students engage in when they conduct research presumes linearity and solitude, rather than process, recursiveness and collaboration" (203), and writing centers are uniquely well situated to work with students to acquire this type of communication literacy in any major or discipline. The tutorial conversation that accompanies online work allows tutors both to help students acquire electronic literacy skills and also to assist students in seeing how to synthesize information they find in the resources they are locating. Online resources unfortunately invite (even facilitate) a kind of cut-and-paste writing no different from the result of stringing together quotations from hard copy texts, but a tutor's questioning can model for students the questions they need to ask themselves as they build their arguments. "How will you use this piece of information?" "Why is it useful?" "What does that information do to further your point?" Such questions asked during the tutorial as the tutor watches the student locate online resources can help the student see why synthesis is needed. The conversation that is an integral part of any tutorial will help the student to articulate her thoughts more fully as she responds to the tutor.

Really useful tutorial talk helps the student begin to see how she will construct her argument and which of her sources will be relevant. Moreover, after some time spent on all this, the tutor can invite the student to do some drafting onscreen at the computer where they are sitting together. When the tutor returns later to see how the student is progressing, the tutor can see whether more tutorial talk is needed or whether the student is ready to continue on her own. The tutorial agenda, as usual, stays flexible in order to move to whatever writing process assistance the student needs. Unlike tutorial A, where the collaborative environment doesn't facilitate help with the many stages of online information seeking, a tutorial in a writing lab with an OWL allows the tutor to be present at a point of need, to assist the student in learning how to move through complex composing processes.

Distance Collaboration

Because the educational mission of writing centers involves reaching out to students in a variety of ways to meet a variety of needs, distance learning beyond the walls of the center is a natural extension of writing center services. Many writing centers have grammar hotlines which allow interaction by phone, some centers have established satellite centers in various departments on campus, and others have sent tutors to residence halls and library study rooms. Moving to an online environment is yet one more form of outreach. While some distance communication programs have proved problematic and not entirely successful, others offer great potential and have generated widespread use and interest.

E-mail

Initially, writing centers offered e-mail tutoring, meeting students through text on screen. The assumption was that this provided students at far ends of the campus or living off-campus a way to make use of a writing center without having to be there physically. The SUNY-Albany writing center found some students willing to interact in this way (Coogan 1995), and at the State University of New York at Plattsburgh College, students taking nursing courses at remote sites are using e-mail and fax to interact with the campus writing center, though faxing may become too cumbersome as the service grows (Dossin 1996). The e-mail OWL at Clarke College's writing center is used primarily by adult students in night classes and by other students whose courses in computer science, business management, and so on are taught at their worksite. The use of e-mail from their worksite became a way for them to access the writing center (Fischer 1996).

While e-mail interaction with students meets a need, it has not generally been a runaway success. Even when a writing center component was carefully built into a writing-across-the-curriculum program emphasizing distance learning at the University of Illinois, student participation was minimal (Pemberton 1996). Similarly, at the University of Wyoming, where commuting distances are great and there is a strong emphasis on providing distance learning to offcampus students, the OWL e-mail service has had limited use, despite the large number of courses offered through distance learning (Nelson 1996). At the University of Missouri-Columbia, the writing center for students in writingintensive courses offers online tutoring, but Andrew White, the director, reports that they average only about two to four requests per week for online help. White (1996) concludes that although he recommends that students try online tutorials, he finds "a tremendous amount of energy gets expended for the relatively small results/response/interest." The major use of Purdue's e-mail service has been the instant availability of dozens of instructional handouts that can be requested by e-mail commands to the automatic server. Questions sent by e-mail are primarily from Internet users around the world. Even then, the majority of our e-mail contacts rarely move beyond a single question-and-response interaction, despite our attempts to engage writers in discussion.

There has been no study that offers insights as to why students are not frequent users of e-mail for online interaction with tutors, but a number of factors suggest that e-mail tutoring will not gain widespread popularity—though it may continue to be useful in places where distance learners have no other options. As any tutor knows, many students have difficulty articulating their questions or verbalizing what they want to work on with a tutor. Part of tutor training is learning to listen and to engage in the kind of conversation that will help the student make such concerns explicit. Thus, since e-mail requires the writer to have some facility in question-asking, it may be an intimidating way for writers to initiate conversations with unknown, unseen tutors, especially for students at some distance from the campus who have not established a personal connection with the writing center. For students who do have access to the center, there is a definite preference for one-to-one meetings with tutors. In writing center evaluations, students frequently rate their experience highly because they appreciate, even welcome, the human interaction. E-mail, despite its convenience, may seem too cold, too demanding for those students who know that they can walk over to their writing centers, almost all of which are staffed by people who have worked with great intensity and fervor to create warm, inviting environments with coffee pots steaming away, candy dishes at the reception desk, and plants and posters to advertise their student-friendly attitude. E-mail is also constrained by its lack of real-time interaction and the lack of shared space in which to look at a paper with the tutor. If the student wants to engage in an informal conversation or has a number of questions or has a messy working draft or a minimal outline (as many students do when they walk in), e-mail is too limiting. E-mail usually results in a nonsynchronous interaction and delays in getting a response, and it requires that the student submit an entire paper if there are larger questions about the whole text. Tutors will also miss the phatic cues that enrich tutorial interaction. Thus, a number of factors work against the instructional effectiveness of e-mail tutoring; moreover, writing centers are exploring other forms of distance interaction with more success.

Synchronous Conferencing

Developing new writing center approaches online has invited explorations of interesting new instructional spaces. One response to the need for real-time interaction has been the development of a Multi-user dimension, Object Oriented environment (referred to as a MOO) as an online means for tutor and student to write back and forth (Jordan-Henley and Maid 1995). MOO tutoring creates a way for student and tutor to meet online and exchange written comments. Jordan-Henley and Maid set up their MOO project so that tutors at Maid's institution, the University of Arkansas at Little Rock, could tutor students at Jordan-Henley's institution, Roane State Community College, in Tennessee. Though the tutors used their prose exchanges with their students to suggest informal tutoring environments, the search continues for technology and/or software that will permit a number of features of collaboration that are important and integral to the nature of tutorial conferencing. When communication is lim-

ited to text interaction, much of the visual and auditory interaction that tutors depend on in face-to-face collaboration is lost (Harris and Pemberton 1995).

Another feature needed for successful collaboration is shared space, space designed to support the *relationship* of the collaborators and to provide means for the collaborators to interact with or manipulate the text the writer is creating (Schrage 1995, 94–95). A writing center with tutor and student sitting side-by-side at a table, viewing a text together and talking about it in real time, provides most of the essential elements of collaboration as described by Schrage, but lacks a means for manipulating the text together. With a computer handy and the text onscreen, student and tutor can view the results of cutting and pasting, insertions, and so on. Video-conferencing across distances, with some way to view the writer's text and to work with it, perhaps even to be able to see each other as tutor and student engage in real-time conversation and hear each other speak, has the potential to be a means for very effective online collaboration. As better (and cheaper) hardware and software are developed for this, video-conferencing may prove to be very successful, or better solutions may be just around the corner.

Resources for Writers

More successful than text-based interaction online have been writing center initiatives in the World Wide Web environment. Here OWLs have soared and are finding a variety of ways to provide educational assistance that both continue to meet the central missions of writing centers and also provide previously unavailable opportunities to work with writers and faculty. By doing so, writing centers are finding ways to view the Internet as a tool for writing instruction, both at the tutorial table and outside the walls of the writing center.

When our OWL at Purdue expanded from its initial incarnation as an e-mail service to become both a Gopher and a World Wide Web site, we added our online e-mail collection of dozens of handouts on writing skills to our Gopher and World Wide Web sites. These online materials, created originally in hard copy to accompany tutorials in our Writing Lab, are a great attraction, serving as a magnet for teachers on campus who become aware of free and easily accessible materials that will be useful for their disciplines. In adding to our existing collection, as we respond to requests for additional materials from various faculty, we are beginning to build partnerships with teachers we might not have met otherwise. Because all of these materials are available on the Internet, we are also providing writing assistance to a worldwide community so diverse that we can only begin to guess where links to our pages exist or to track the many thousands of "hits" our site gets each week. As William Plater (1995) reminds us, "an evolving global economy is restructuring the formal educational systems of countries worldwide" (7), and as companies and government agencies

educate their employees, they are using electronic means to provide information for personnel spread out over the globe. Thus, it should not surprise us when we get messages that our materials are being used for online training of personnel in government agencies such as the United Nations or NASA, in businesses such as auto manufacturers in Sweden or engineering firms in Belgium, in high schools in British Columbia and New England, and in universities on other continents. Our site has become a link on a great variety of Web pages. An anthropology teacher in New England created a link to our OWL on a Web page for his class as easily as a computer science faculty member here on our campus made OWL the writing tool on the Web page for his course.

As our OWL links to an expanding group of other OWLs also putting their instructional handouts online, there is now a growing pool of readily accessible materials available anywhere writers have access to a World Wide Web browser. While writing centers do not focus on or emphasize their role in dispensing resources, this aspect of an OWL is an expansion of a service most centers have offered-providing print resources on writing. Moreover, the availability of resources attracts some faculty to our Web site and makes them aware of materials and services that might help their students. For example, a faculty member in a department on our campus—who heard his colleague talk about the OWL link she had added to her class page-called to talk about how the Writing Lab might help with writing assignments in his class. Having never thought about providing his students with writing assistance for the papers he assigns, he was dipping a toe in a universe he had never much thought about before. Our future plans are to keep adding materials on writing that faculty in various disciplines tell us are relevant to the writing their students do (for example, online materials on report formats for engineering students and more on audience concerns for courses where we've worked with faculty now more aware of having their students write for specific audiences).

Additional resources for writers on our OWL are links to the most useful World Wide Web search engines as well as links to sites with useful information. The goal here is to assist writers searching for information needed for their writing assignments, to assist them not only with an immediate writing need but to help them acquire online information-seeking literacy as well. Because the Internet is a bewildering array of thousands of sites and has no map or index, students who have had little guidance in foraging on the Internet need a user-friendly beginning, a place where they don't initially have to remember the alphabet soup of URLs, those complex Internet addresses that will get them to sources they may want. OWL eases writers' entry onto the Internet, and as interest in OWL expands, we are meeting with teachers in various disciplines who don't have their own sites but for whom we can add starting places, that is, useful links to accompany their writing assignments. For Art and Design students writing reports on contemporary art, we have links to the Louvre and other museums; for students in journalism classes we have links to other student publications online. Our OWL is also the focus for teacher and student workshops. When invited, our staff members visit computer classrooms or meet with teachers interested in incorporating the Internet into their classes. For teachers, we are finding that the most difficult step is to envision how the Internet might be woven into their syllabi and into their writing assignments. OWLs can also be sites for instructional programs as, for example, at Colorado State University, where the Online Writing Center includes modules and hypertext tutorials on writing skills in general and writing skills for specific courses such as technical journalism, speech, and electrical engineering (Leydens 1996; Palmquist, Kiefer, and Zimmerman 1998).

Resources for Teachers

OWLs in Online Discussion Groups

Online discussion groups about writing for teachers in other disciplines, like student e-mail services, have had mixed reviews. Disappointing reports of minimal use by teachers are common (Blalock 1996). At Purdue, following a lively two weeks of intense writing-to-learn workshop discussion with liberal arts faculty interested in adding writing to their courses, we tried to continue the conversation about writing by means of a listserv. A graduate student whose task was to provide consulting support for this group during the next semester describes the low use of that electronic discussion group he set up as follows:

The response ... was certainly minimal, although they may have responded better if I had prompted them more often. Obviously, they were all conscientious teachers, and seemed to respond best when a question was posed which asked for practical advice. They seemed much less inclined to theorize about situations and more willing to offer suggestions or examples from their own classes and experience. (Nagelhout 1996)

At Stephen F. Austin State University, the results were similar:

We have a local list called COMPTALK, intended to generate conversation about writing here, a campus without a WAC program at the moment. We currently have about 50 subscribers, most of whom are silent. The list is sporadic, but it is only in its second semester. But faculty who are subscribed have said that they like the idea and the possibility for further/ future interaction. (Blalock 1996)

Similarly, the writing center director at the University of Texas at Austin notes that their listserv has "a fairly long list of subscribers who are faculty teaching what we call substantial writing component courses. . . . Only a few faculty contribute to discussions, and mostly they don't initiate discussion" (Kimball 1996a).

Teacher Resources

At the University of Wyoming, plans for their OWL include World Wide Web pages for faculty to access information about writing across the curriculum. Included will be examples of scoring guides that people use across campus since there is high interest in how to evaluate writing (Nelson 1996). As part of the online services being built by the Writing Center at the University of Texas at Austin, there will be a Web page designed to serve as a resource for faculty teaching writing-intensive courses with links to online resources for writing in various disciplines, an online manual for faculty teaching writing-intensive courses, and short, informal essays by faculty members on designing writing assignments and other topics for the writing-intensive classroom (Kimball 1996b). The teacher resource section of our OWL at Purdue presently has materials teachers can use with their students and links to useful sites for their fields of study, and our plans for expansion of this section of our OWL include adding materials designed to help teachers respond to student writing, especially writing done by English-as-a-second-language students. An OWL with a rich teachers' resource section will be a continuation of this traditional role for writing centers in providing suggestions for style sheets, writing assignments, and so on, and an OWL can add to all that an online space for teachers around campus to talk with each other about writing. When all this is prominent on a university's Web site, it emphasizes the university's commitment to enhancing literacy skills, to promoting the sharing of information, and to building a sense of a university community committed to common goals.

Funding and Staffing an OWL

While OWLs can enhance the work of their institutions as well as the institution's CAC program, OWLs are not easily or quickly hatched and require close tending as they develop. Securing funding initially is a challenge because administrators need help in thinking about a new kind of instructional space, about why it is needed, and about how an OWL is integral to the institution's mission. In our case at Purdue, I found that beginning modestly and presenting a growing OWL helped university administrators see why it should be supported. It took several years to secure funding not only for the necessary upgrades in equipment (see the Technical Endnote for a description of current hardware and software) and even more years to acquire adequate technical support. Now, some years after our OWL project was initially launched on a limited basis, we have two graduate students, each with an assistantship equivalent to teaching one course per semester. One, a doctoral student in our Rhetoric and Composition program, coordinates the instructional aspect of the OWL, helping with staff training, conducting workshops with teachers, overseeing content development and computer use in the Writing Lab, and working with me to set future goals. The other graduate assistant, an engineering student, is our technical coordinator, working on maintenance, routine data collection, new equipment needs, programming that is required as we add to the OWL, and other hardware and software concerns. My experience has been that while university administrators eventually understand the need for hardware and software, they need much more coaxing before committing recurring funds to solve the critically important need for personnel.

The staffing for our OWL is our Writing Lab's tutors, and while some are initially selected to join the staff because of their interest in and knowledge of online communication, all are trained by our OWL content coordinator. Because our Writing Lab is housed within an English department which funds these tutors as part of their graduate student teaching assistantships, all are graduate students in English. As director of the Writing Lab and senior coordinator of the OWL project, I have found my own training on the Web and online environments to be a course in self-education as I constantly seek information from any source that helps to define directions for growth that are consistent with our Writing Lab's goals in terms of effective writing center theory and practice and that fit our institution—its students, its teachers, and its mission.

Obstacles and Possibilities When Building an OWL

While there is significant potential for OWLs to contribute to communication across the curriculum, OWLs are not-as I have suggested-easily hatched or casually nurtured into further growth. My experience at Purdue confirms what I have heard from others. The planning and fund-raising to initiate and then to continue to coordinate the growth of an OWL take far longer than anticipated (and can dominate a director's work schedule), and developing the OWL is a study in frustration. It is hard to identify sources of money, difficult to convince an administration that recurring funds for personnel are needed, and confusing to learn how to do battle with all the logistical difficulties in getting systems up and running. Campus politics intrude, faculty don't want to be bothered, systems break down, and planning is usually impossible because the Internet is such a dynamic, rapidly changing environment that today's plans are out-ofdate by next semester and the hardware that finally arrives may soon be outdated. And there is often a computing center to cope with which is, at best, reluctant and more likely to be hostile or unhelpful. But the rewards can be great. At Colorado State University, the Writing Center's online services were a way to offer writing assistance to a faculty where there was some resistance to a writing across the curriculum program (Palmquist and Leydens 1995-96). At other institutions, students unable to come to the writing center as part of their distance learning courses now have tutorial assistance with writing skills integrated into their courses. Moreover, that student in Tutorial B will surely write a better paper. She will also acquire information literacy strategies as she learns how to search the Internet for information, and she can certainly look forward to using these strategies in the workplace she will enter.

An OWL has other possibilities as well, for its Internet access will help the institution achieve global prominence far beyond the campus. Purdue's OWL, as mentioned, has many thousands of users in schools, colleges and universities, industries, government agencies and laboratories, and private users in North America, Europe, the Middle East, Asia, and South America (about 300,000 requests during our spring 1996 semester were from off-campus users of our Web site). The widespread use of our materials by high schools surely assists in student recruitment as well, for as one high school teacher in California wrote us, when he downloaded our materials and distributed them in classes, his students no longer think of Purdue as just a place with the Boilermakers football team. Such examples are added advantages, confirmation of the successes of OWLs to reach out and serve society at large. On campus, the immediate importance of an OWL is its ability to enhance the educational experience of the students who use it. With careful thought given to purposes and goals, an OWL becomes an integral part of a writing center's interaction with a communication across the curriculum program, and together they offer their campus learning environments for enhancing literacy skills not previously available. Students can have tutorial assistance as they move through complex writing processes for assignments in any discipline, and they need not even journey to the writing center to do so. Reaching out to students and faculty across campus and at distant sites is a writing center mission that reinforces and enables institutional missions for global education. Moreover, the writing center working with its communication across the curriculum program becomes an integral part of the university's ability to carry out its vital mission of preparing students for the literacies they will need to function effectively in society. Given the rapidly growing workplace emphasis on the importance of computer literacy and online information gathering, a college education must incorporate the acquisition of such skills. A writing center's OWL integrated with programs in communication across the curriculum are powerful tools for institutions to achieve such goals.

Notes

The Purdue University Online Writing Lab (OWL) can be accessed as follows: World Wide Web site: http://owl.english.purdue.edu E-mail: owl@cc.purdue.edu Gopher site: owl.english.purdue.edu See Figure 1.1 for the homepage of the Purdue University OWL's Web site and Figure 1.2 for the page (*Writing-Related Resources*) that is the top link from the "Resources for Writers" button on the homepage.

Technical equipment: The Purdue University OWL is connected to the Internet through the campus computing system, but we have our own server, an Apple Macintosh PowerPC 7250/120 Workgroup Server, powered by WebStar. For further information, use the link *About Our OWL* on the OWL homepage.



Figure 1.1. Purdue University's OWL Web site homepage.



Figure 1.2. Writing-Related Resources page (top link from "Resources for Writers" button on the Purdue OWL homepage).

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