Composing in a Digital World: The Transition of a Writing Program and Its Faculty

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The Institutional Context

In 2002, the provost at a large state-supported university charged the English Department with the task of revising the writing program to make it more "more effective and efficient." The program had not been revised in over a decade, and the provost provided a small grant of $10,000 to support this substantial work. Committees were formed within the English Department and Writing Program, and two rhetoric and composition faculty spearheaded what came to be known as the Writing Program Initiative (WPI). While the majority of the curriculum revision improved the current curriculum to make the courses more effective, the WPI also moved the second course to the sophomore year (the year following freshmen attrition), so that the new program would ultimately teach fewer students and therefore be more efficient. Admittedly, the move to a vertical curriculum capitalized on our substantial attrition rate in making the program "more efficient," though we believe that such a design for efficiency is more defensible than other alternative responses such as increasing class size or separating grading from teaching (Hester; Rickly). More significantly in pedagogical terms, though, the move of the second required writing course allowed us to create a more rigorous second course in which students with greater experience with writing for college and with a greater sense of their own academic goals and majors can be asked to accomplish more ambitious projects and be held to more exacting standards.

One outcome of the provost's charge was a renewed interest in the teaching of writing in the English Department and across campus. Within a short period of time, writing instruction, curriculum and outcomes became important, conversational topics for a variety of faculty and university

administrators as the university community discussed the kinds of experiences students needed to have in order to be successful in a variety of majors and professions. While the old curriculum focused on humanities-based, print-only approaches to the teaching of writing, the new curriculum—supported by current composition scholarship (Selfe; Shipka; Wysocki et al.) and grounded in a process and rhetorical approach to the teaching of writing—encompassed a wider range of composing options and products, including visual, audio and multimodal artifacts. Groups of writing faculty met and wrote the various goals, objectives and requirements (see below) for each of the two required courses. The new writing courses which emerged from these objectives and goals were designed to support students composing in a digital environment and to give them experience in composing multimodal and digital texts. Different versions of the WPI were proposed and vetted across the university, especially with the curriculum committees that would eventually have to approve the new writing courses. While there was concern among certain humanities faculty that courses including multimodal forms of composition would shortchange a traditional focus on the print-linguistic scholarly essay, faculty across the curriculum agreed that students learning to write for the academy and a variety of professions need experience and instruction with composing in multiple, digital media.

The flurry of activity and burgeoning interest in the writing program across campus provided the impetus for the hiring of a writing program administrator at the senior level three semesters after the initial charge from the provost. At that point, the vertical curriculum and focus on including multimodal forms of composing was already in place. The new WPA's initial duties were to chair the committees that finalized the goals and objectives of the new courses and to shepherd the new curriculum through the various university committees. The following is an abbreviated version of the goals and objectives for the two courses eventually approved by the university (a complete version along with the course requirements is provided as Appendix A).

Goals and Objectives for the Two New Courses

Course 1

1. To learn how to recognize and strategically use the conventions of academic literacy.

2. To understand and use rhetorical principles to produce public and private documents appropriate for academic and professional audiences and purposes.

3. To practice good writing, including planning, revising, editing, evaluating sources, and working with others.

4. To practice the processes of good reading.

5. To learn web and digital environments valued by the university.

Course 2

1. To build upon students' rhetorical understanding to compose documents that reflect the authors' recognition of using information to influence readers.

2. To use a variety of organizational strategies to integrate authorities smoothly into documents that explore issues and answer questions appropriate for liberal education.

3. To read and evaluate various sources and modes of information important to research and inquiry in academic and professional settings.

4. To learn web and digital environments necessary for conducting and writing research.

5. To acquire and practice information literacy.

Although the new curriculum incorporated the use of composing technologies and web-based practices, prior to the WPI, there were no required writing courses offered in a computer classroom. During one of many meetings with the provost, prior to the piloting of the new courses during the academic year 2005–2006 (AY 05–06), the WPA pointed out that he had a curriculum which could not be delivered without computer classrooms. In a subsequent meeting, the provost announced the funding of a new computer classroom for the piloted courses. The WPA invited rhetoric and composition faculty with expertise in computers and composition to help design what eventually became a wireless laptop classroom, complete with twenty-five laptop computers, a smartboard, a computer projector, a DVD player, a laser printer, a scanner, and a document camera.

As AY 05–06 progressed, and the WPI began to move through the various university committees, it became apparent that the new curriculum would be in place for AY 06–07. Still, there was only the one laptop classroom available for the entire writing program. Again, the WPA repeated his assertion that the writing program had a curriculum it could not deliver.

While the English department and the writing program had done their work in responding to the provost's charge to revise the writing program, the limited classroom resources available to the program threatened to block any substantial change from taking place. The provost's office responded by organizing a flurry of meetings that included the vice president for information services (IS), members of the IS staff, the WPA, rhetoric and composition faculty expert in computers and composition, the English department chair, and members of the provost's office.

From these conversations, the VP for IS and the computers and composition scholar in the department presented a proposal to computer company representatives who were working with the university's IS. At the formal presentation of the proposal to the computer company representatives, the computers and composition scholar shared the new writing program curriculum goals, summarized scholarly arguments for the value of teaching with technologies, and shared an undergraduate student's video essay. While the reps listened solemnly to the presentation of curricular goals and theoretical arguments, minutes into the presentation of the student video project, they had eagerly leaned forward in their chairs, asking questions, offering their responses, and engaging with the theoretical issues in substantial understanding. One representative commented, "I have a staff of 30 people under me—and I wish all of them knew how to make such a composition." The grant proposal was successful, and the university received more that $450,000 worth of computer technology and software to equip its new computer classrooms. It was the multimodal possibilities for composition instruction that excited the reps.

In the fall of 2006, in conjunction with the implementation of the major curricular change in the writing program's goals and objectives, the writing program opened the doors to five new wireless, laptop computer classrooms (six computer classrooms in total). The classrooms not only support our writing curriculum, they extend the multimodal possibilities for students in the program. In addition to computer technologies which support traditional written practices (computers, word processing programs, page design programs, printers, scanners), the classrooms include technologies supporting a range of compositional possibilities: document cameras, DVD players, built-in speakers, ceiling-mounted projectors, visual design software, digital audio recorders, digital still cameras, video cameras, transcription machines, and software for teaching and learning multimodal compositions. Prior to the arrival of these classrooms, writing program faculty incorporated composing technologies into their classes in numerous ways: technology carts (with laptops, speakers, and data displays) which could be wheeled into traditional classrooms, scheduling classes (mostly

professional communication classes) in the sole computer classroom, sched-uling classes in other buildings, or sending students to the Student Multi-media Studio in the library for instruction. Without programmatic access to computer classrooms, however, the integration of composing technolo-gies into the curriculum was idiosyncratic, relying on individual faculty's interest in teaching with technologies. With these six new classrooms, every section of first and second year writing has at least one class meeting per week in a laptop classroom.

Our faculty are diverse in both their institutional rank and their dis-ciplinary commitments, including part-time adjuncts with mostly MAs in literature; graduate students in literature and in rhetoric and composi-tion at both the MA and PhD level; full-time, non-tenure track lecturers with MA and PhD credentials in literature, and tenure-track rhetoric and composition faculty. Recognizing that the new curriculum and the lap-top classrooms presented new possibilities and challenges to such a diverse writing program faculty, prior to and throughout the first semester of the new curriculum the writing program organized a book discussion group, teaching groups, and, a series of weekly workshops focused on the curricu-lar goals and composing technologies. This moment in the Writing Pro-gram involved two distinct yet indivisible kinds of work: one, the signifi-cant theoretical work of processing the new curricular goals and designing new writing classes which supported those goals and objectives; and two, the equally demanding work of thinking about and incorporating com-posing technologies in meaningful and relevant ways for writing students. Although these two types of work were intertwined with one another, the WPA was able to articulate them as distinct kinds of work in order to argue the need for a coordinator of digital composing who could be responsible for the latter kind of work. A tenured associate professor whose research involved composing technologies thus received one course release per semester for directing the new office for digital composing; additionally, a graduate student in rhetoric and composition received a course release as assistant coordinator of digital composing. The designation of a digital composing coordinator (and the accompanying commitment of financial resources) was a recognition by the university and departmental admin-istration of the work necessary for a smooth transition into the new cur-riculum. As importantly, the institutionalization of the digital composing office also underscored the substantial, intellectual work involved in work-ing with composing technologies and the ongoing nature of learning with technologies (see Appendices B and C for descriptions of the coordinator and assistant coordinator's responsibilities).

The writing program faculty began the first semester of the new curriculum scaffolded by this structure, and even then, the enormity of the transition was revealed in surprising ways. For example, the design of the laptop classrooms creates a very different learning space from most traditional classrooms (see Figure 2). Although constrained by the limitations of physical space, architectural concerns, regulations involving disabilities services, and fire codes, the design of the laptop classrooms provided an opportunity to instantiate into the physical space a theoretically and disciplinarily supportable pedagogy. In his interesting book chapter on design and the delivery of composition with computer technology, Todd Taylor points out that questions about the ways in which technology can be used to deliver writing instruction are often questions that can be answered by paying attention to design. As we implemented a new curriculum in a new, specifically designed physical space we realized that the classrooms we designed promoted a specific kind of pedagogy—the physical space, itself, had theoretical, pedagogical and political implications for the ways teachers would work with their students. We echo Taylor's point about the importance of design in delivering composition instruction as we enlarge the discussion about design to include the physical space of the technology-rich classroom. This attention to design for technological instructional spaces can also be seen in Morgan Gresham and Kathleen Blake Yancey's article on designing the Pearce Center at Clemson in which faculty worked with architects to develop a curricular space, emphasizing the importance of the design of the space and the authorship of that design. Gresham and Yancey make the important point that architecture is essentially rhetorical as it seeks to create something for a particular purpose for an audience or group of users.

As Figure 1 shows, space in the room is not clearly demarcated *teacher* or *student* as in most traditional classrooms, where a larger desk occupies the front of the room (that is, what is clearly the front of the room given that it is where the teacher's desk is and all the student desks are oriented toward it). In the laptop classrooms, there is no larger desk, and the chairs don't all face one direction. While the projector remains fixed in its ability to project onto one particular wall, the laptop connected to the projector is one like all the others, sitting at the end of the row. With this design, the writing program administrators made a conscious choice to design the space to:

- support and encourage a distribution of power among all participants in the classroom space
- foreground students, students' writing processes, and their products;
- encourage active, collaborative learning (rather than learning as a passive act of reception);
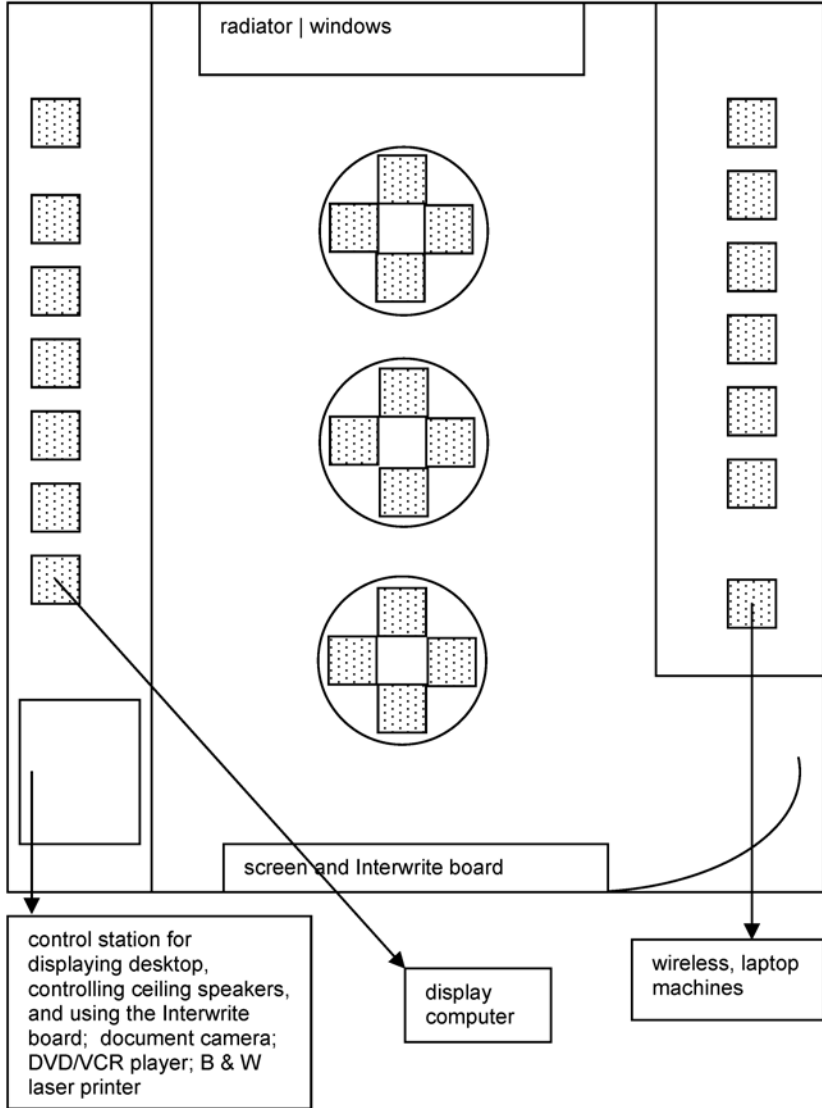
Figure 1. Map of the laptop classroom.

- support learning in process (rather than coming together to share final work done outside of class); and
- emphasize the classroom as a space for a variety of kinds of performance as teachers and students take on a variety of roles—as learner, as expert, as teacher, as coordinator, as participant, as peer.

We knew the classroom design, along with the new curriculum and the computers, would require a practical and theoretical transition for teachers who are used to a more traditional curriculum, classroom, and classroom design. One day during the new curriculum's first year, we encountered that transition in conversation with one of the instructors. While she praised the classrooms and their capabilities for allowing students to access the world while they worked together, she also confessed that, at first, she "didn't know where to sit." This uncertainty about where to sit reveals the complexity of this transition the program was undertaking—it is a space where theoretical, practical, administrative, and instructional expectations and experience met head-on. While de-normalizing the classroom space for teachers is theoretically supportable as widespread changes are made to a writing program, writing program administrators also need to understand how hard teachers have to work to make a successful transition.

While the literature in writing program administration addresses similar curricular and technological changes at other institutions, our article focuses on the impact these changes had for faculty who had taught a current-traditional curriculum in a traditional classroom. Irwin Weiser writes about the major curriculum change at Purdue in which the overall writing requirement was reduced to one course. As part of this change, all writing courses met at least once a week in a computer classroom or computer lab that could be used as a classroom. While this is certainly a huge change, Purdue had been offering computer-based composition courses since 1985 and presumably had a cadre of teachers and culture of working with students in a computer environment. Beyond a single sentence detailing that ongoing workshops were offered for teachers, Weiser does not focus on the main issue we address in our article. Like the curriculum reform about which we write, Dennis Lynch and Anne Wysocki examine the curriculum change at Michigan Tech (MTU) which was initiated at the behest of an outside push for curricular reform. While ours came from the provost's office, the change at MTU was spearheaded by a report from the North Central Accreditation Association. Again, while Lynch and Wysocki mention the role of preparing teachers for the new curriculum, it is not the focus of their article nor is an increased use of technology, since the MTU curriculum revision focused on integrating speech and other communication into required composition courses.

Mary Hocks' article about the infusion of multimodal assignments and teaching in writing across the curriculum courses probably comes closest to the focus of our work, since she does talk more extensively about the impact of the curriculum change on teachers, teachers responses to this impact, and the process of preparing teachers to deliver a new curriculum

involving the use of technology. We agree with Hocks' suggestion that "we need to make arguments at our institutions and also nationally for faculty development and support that is truly modeled on the best WAC practices, practices that actually transform our experiences as teachers" (38). We also believe that the curriculum reform and infusion of technology in the required writing courses at the institution we studied offered writing faculty these opportunities. However, what we are able to offer in the conversation about curriculum reform, design, and the use of technology in writing course are the voices of the teachers themselves, since we are one of the few if not the only researchers who actually asked teachers about their experiences in transitioning into a technology-rich curriculum and teaching environment.

In order to understand the transition into the new curriculum and the new laptop classrooms by faculty and students, we designed two surveys—one for faculty, one for students—which asked parallel kinds of questions about what was happening in the classrooms and what the users of these spaces thought about those practices. We knew that student and teacher attitudes toward the classrooms and the curriculum varied widely-some were enthusiastic, some were resistant, some began the semester with a strong commitment to the new curriculum and to instruction in composing technologies, others had very little interest, and still others had an interest and commitment but not a lot of background experience. We wanted our survey to capture as many of these perspectives as possible. Whereas it would have been an easy matter to send an email to the writing program faculty listserv asking faculty and their students to complete an electronic survey, we worried about the return rate and accurate representation across faculty institutional ranks, experiential levels, and commitment to the new curriculum and the new technologies. For these reasons, we organized a team of survey proctors to visit the classes, describe the study, and invite participants to complete the survey while the proctors remained in the room to troubleshoot.[1] Additionally, we identified technologically-savvy faculty who were comfortable distributing the survey to their own classes. In the end, 31 instructors (out of 71 total writing program faculty teaching that semester) and 862 students (out of approximately 1,500 enrolled across the three writing courses) completed the surveys on technology use given at the end of the first semester of our curricular revision.[2]

As programmatic research, the surveys offer important details on how this diverse faculty transitioned to a new, digitally based curriculum meeting in new laptop classrooms—information important for improving as a program in subsequent semesters. As a snapshot of a unique—yet increasingly common—moment in one writing program's transition to a new

multimodal curriculum, however, we believe these surveys provide a better understanding of how writing program faculty make such a transition. While writing studies scholars have theorized many reasons why writing programs must take seriously multiple modes of communication (Cushman et al.; Selfe; Shipka; Wysocki et al.), there is little data-based scholarship that reports on faculty making the transition to multimodal composition teaching.

Understanding what happens when teachers undertake the complex and involved theoretical work necessary to shifting their writing pedagogy is an important step in understanding contemporary written communication practices and instruction.[3] As Anthony Atkins has argued,

> Research assessing the preparation of our teaching assistants (TA) and future tenure-track faculty members is crucial, for it will let us know where we are and where we need to go in order to offer the best preparation for our graduates. The need for such research is even more pressing when we consider the extent to which undergraduate literacy has been affected by pervasive digital technologies.

In addition to attention to teacher preparation, attention to the complex networks in which teachers engage digital technologies is important. Dànielle DeVoss, Ellen Cushman, and Jeffrey Grabill argue that understanding the infrastructures required for new media composing is crucial because "these often invisible structures make possible and limit, shape and constrain, influence and penetrate all acts of composing new media in writing classes" (16). They suggest that

> An infrastructural analysis of the spaces and practices of composing new media gets at some basic and powerful issues with respect to new-media composing: the ways in which new-media writing becomes defined, shaped, accepted, rejected, or some combination of all of these (and more); who gets to do new media; who gets to learn it, where, and how; and what values get attached to this work (and to its writers and audiences). (17)

Our survey data add another layer to our disciplinary understanding of the spaces and practices of composing new media by capturing how teachers themselves negotiate this transition—how prepared they felt, how they learned to work within this new curriculum and these new spaces, and how they negotiated the materiality of the new spaces which encouraged and demanded new roles and relationships among teachers and faculty.

This faculty perspective is an important piece in understanding the interface between people and the often invisible infrastructures in which they work. The three major themes which emerge from our surveys suggest that even when the technologies are new (and thus, might be expected to be most visible in their disruptive possibilities), faculty negotiating the transition into a new curriculum and technology classrooms foreground what is made possible by the technologies rather than focusing on the technologies themselves. In this article, we organize the results and discussion around three lessons we learned that appear to be relevant to any writing program considering widespread technological change:

- faculty saw themselves as learners and especially took advantage of opportunities within their pre-established communities of learning and working;
- an increased visibility of work was made possible through the composing technologies; and
- both of the previous points contributed to a shifting configuration of people, their identities, their roles, and their relationships with one another.

These changes to theoretical understandings, pedagogical relationships, and teaching and work practices are permeated by the presence of the technologies. But significantly, faculty participating in the survey were focused not on the capabilities of the technologies or any inherent value or feature of the technologies; instead, they remained focused on and committed to the work and relationships made possible by the technologies. At the heart of these three themes lies the teaching and learning relationship, not the technologies, and in the end, our experiences with the new curriculum and the new classrooms demonstrate that rather than causing a radical disruptive change, new technologies are often successfully incorporated into strong pre-existing contexts of learning and teaching.

Teachers as Learners

As might be expected, faculty tended to use composing technologies with which they were familiar. More than half of the teachers reported using computer technologies in at least seven ways: word processing, email, data display, web research, word processing with visual elements and/or sound, PowerPoint, and accessing the course management software known as Blackboard Vista. What teachers already knew how to do prior to the addition of the computer classrooms to the program remained the most

common uses of computer technologies. Interestingly, the third most common way faculty reported using the computers in class was displaying data through the computer projector. Throughout the semester, at the change in classes, the coordinator and assistant coordinator of digital composing were stationed outside the six laptop classrooms to troubleshoot, answer questions, and talk informally with teachers as they entered and exited their classes. Observing from the halls outside the classrooms, we were struck at how few of the faculty used the data display projector, although it was a simple process of turning on the projector and the document camera (and the steps were posted on the wall next to the display computer). Knowing how quickly faculty could learn the data display and document cameras, we asked at the change of classes if we could have five minutes of the instructor's time to demonstrate it for them. Rather than expecting faculty to come to us, that is, we went to them to show them something that would be helpful to their teaching, something that was quick to teach, something that they might not even know they wanted to know. The fact that data display is the third most common use of technology suggests the influential role faculty development plays in effective uses and the complexity with which this issue is fraught. It also suggests that given the right circumstances, faculty were open to learning new ways to teach and support their students' learning.

Indeed, the day-to-day reality of using classroom technologies which were unfamiliar to them (yet familiar to their students) pushed faculty to learn and see themselves as learning from their students. When asked to identify all the ways they have learned to use computers as teaching and learning tools, 31 faculty identified at least 133 ways (see Table 1). This faculty were consulting a large variety of sources—with all individual faculty consulting multiple sources—to further their learning about teaching with the technologies. Nearly 94% of the faculty responded that they had figured things out on their own or with others in the building they were located in—by working with friends and colleagues (74%), from writing program workshops (71%), and from their students (58%). In addition, in response to a separate question, 83% of faculty agreed or strongly agreed that they've learned about composing with technologies through their teaching and that they are comfortable with students teaching each other and the faculty. As one faculty respondent put it, "Working with computers has been a good experience overall. It has enabled me to help students with their own use of technologies and it has allowed me to learn a few tricks from my students as well."[4]

It's interesting to note that less than half of the ways faculty learned involved print materials or help centers located in other parts of the campus

(the Faculty Professional Development Center and the Student Multimedia Studio).[5] Although there is support across campus for teaching and learning to teach with technologies, the writing program faculty overwhelmingly learned from within their own environment and with others in that environment: both colleagues and students (as opposed to printed materials). These faculty responses suggest that strong connections to the immediate communities within which they work can be highly influential in how faculty respond to new technologies. Bringing new learning situations (and professional development opportunities) into those environments and tapping into those existing comfort zones as much as possible might lead to a higher success rate in getting faculty to experience and integrate new practices into already full work lives. Although there were already established infrastructural support locations across campus, faculty in the writing program stayed close to home in developing their approaches to the new curriculum and the new technologies.

Table 1. Reponses to the question "How have you learned to use the computers as teaching and learning tools?" (*N* = 133).

By figuring it out on my own	94%
By working with friends and colleagues	74%
From writing program workshops	71%
From students	58%
From print materials (handouts, books, web sites)	48%
From the University's Faculty Professional Development Center	29%
From computer labs	26%
From Student Multimedia Studio	16%
Other[6]	13%

Faculty also viewed themselves as learners in the responses to the final open-ended question which asked for overall comments on their experiences. As this was the first semester implementing the new curriculum and the computer classrooms, there were lots of technical bugs being worked out (from an unfamiliar login procedure to the inability of the existing wireless router to handle upwards of 150 logins happening at one time). Whereas we might expect faculty responses to involve the technical difficulties, instead, overall responses to the experience overwhelmingly focused on learning, learners, and students. 85% of responses involved learning and growth on the part of the instructor and enhancement of learning and teaching, as these faculty responses indicate:

- It was a humbling experience—but flexibility and a sense of humor made it doable. I know a lot more know than I did at the beginning of the semester. Next semester should be much easier.
- This has been an exciting year! I've learned how useful computers can be in the everyday tasks involved in teaching and am excited to expand on the ways in which I will further incorporate technology in the classroom. I wanted to start small because it was a little overwhelming, but now I feel more confident and am ready for more challenging ways to incorporate technology.
- I am dependent on students or my own resources [for learning HTML to build final projects]. I know that I can access the university's faculty resources but time is a factor—I will see what I can learn over the semester break.

In each of these responses, faculty suggest the enormity of the transition from one learning environment to another, the amount of work involved in learning new ways of teaching, and the difficulty in finding time and sometimes energy to accomplish the task. But these faculty, across their survey responses, remain optimistic that the work is crucial in teaching in a digital age and see themselves as needing to change their practices to better fit with students' needs and desires. Faculty in this survey indicated a range of ways they embraced the role of learner in response to the major pedagogical shift being asked of them.

The Increased Visibility of Work Made Possible through the Technologies

Against this backdrop of activity in which teachers were learning to teach within these laptop classrooms, survey participants revealed the contours of the changes taking place in their classes, particularly in the increased visibility of the work of the class which the technologies supported. Responses to the open-ended question, "What has been the most effective use of the computers for your teaching in this class?" were coded into 60 effective uses,[7] broken down into the five categories identified in Table 2.

Table 2. Responses to the open-ended question, "What has been the most effective use of the computers for your teaching in this class? Why?" (*N* = 60).

In-class work   20

When I give students time in class to compose or research their assignments, I like being able to intervene during their composing processes.

Being able to have students compose with visual elements in class has been extremely effective both in terms of meeting course goals but also in terms of engaging students on levels with which they are more comfortable and familiar.

Demonstration   15

Computer classrooms have been very effective to show students practically the things we want them to do, not just the technical but also the aesthetic elements.

Access to digital resources   13

The classroom has multiple programs from which students can choose to compose digitally.

Engagement of learners   7

Computers give students the agency to become active in their learning because they can apply their skills and become more invested in their projects.

Organizational support   5

Since I've asked my students to post all work on Vista, I've found it effective to refer them back to comments I had posted to them earlier, refer them back to assignments or aspects of assignments they posted earlier, or refer them to each other's posted work when applicable.

Eighty percent of the faculty responses identifying effective uses of the computer technologies involved (1) in-class work (done in a workshop setting or through modeling particular activities), (2) demonstration (through the display computer, projector, and document camera), and (3) access to digital resources (presumably, as they were involved in both in-class work and demonstrations of work). All three of these uses of the classroom technologies involve visibility and seeing: students watching demonstrations projected onto the overhead, students and teachers seeing each other writing during composing workshops, students workshopping projects as the teacher circulates through the room, and faculty and student access to digital resources like search engines, libraries, video sites, and podcasts. These are all types of work which demonstrate, both implicitly and explicitly, the range of work composers negotiate in a digital world. As one enthusiastic teacher responded in her survey, "With computers in front of us, it is great to use the word processing feature to compose together and work on skills like creating a great thesis or claim. As my abilities to use the computer,

Vista, and the internet become more creative and developed, most of the writing process can be done online." This teacher's response is suggestive of the range of work that can be done in the classrooms. In-class work (as students compose individually, in groups, or as a whole class following a demonstration) opens up the instructive possibilities, as another teacher points out in her comment about the digital world the classroom opens up: "Isn't that the real direction that we are going? The possibilities are limitless."

In addition to the implicit knowledge writers might gain from working in class, the demonstration capabilities of the classroom technologies support more student engagement and experiential learning, as another teacher noted: "projecting [my desktop] on the screen . . . allows me to take notes on class discussion, to demonstrate how to do things online (such as search for a source, analyze the rhetoric of a website), and to compose and revise together as a class." Through demonstration, faculty can *show* students steps in a process, the complexity in a task, or the aesthetic elements in their work. Through in-class work, students and faculty *witness* the work being done, work which might otherwise be invisible vis-à-vis the final product brought into class. While work becomes more visible, though, faculty responses suggest that the computers which allow for stronger student engagement can also be used to control and constraint students: "The most effective use of the computers is the ability to use the projector. That way students are literally on the same page and can follow along. I don't have to compete with the computers for their attention when I'm directing their attention towards the front of the room." With the demonstration capabilities, in other words, teachers can capture students' attention and direct it to the front of the room as they watch what happens on the screen, or they can capture students' attention and direct it back into their work as the students follow along with what happens on the screen as someone (not necessarily the teacher) demonstrates. Indeed, the demonstration capabilities of the laptop classrooms—like any technology—can be used in the service of quite different pedagogies.

Situated within the larger infrastructure incorporating the classroom design, the new curriculum's goals and objectives, and the focus of the professional development opportunities offered by the writing program, however, the demonstration capabilities, in-class work, and digital access to a world of writing resources were most often in our surveys represented as ways of revealing the complexities of composition in a digital age. For these teachers, one of the most positive benefits has been in engaging students in the work of writing together. As one teacher described it, "So far, the most effective use for me is to have students working on their assignments—both research and composing—while we are all together in the same room. This

facilitates anything from invention to revision." More specifically, working together in the same room allows teachers entry points into students' composing processes when students might best benefit from intervention: "Having students compose in class allows me to help them at the point where they are having difficulty. Instead of sending them off to do an assignment completely out of class, I can help them get started, alleviating some of the biggest concerns they have before they try to go it alone." Indeed, *together* is a concept frequently used by faculty to describe the engagement of learners in the classroom activities:

- The computers have enabled me to really illustrate and encourage students to compose multimodally! The computers have facilitated more hands-on lessons about how to conduct effective research, illustrating search patterns and scholarly versus non scholarly sources instantaneously on a large display screen instead of having to give a drier lecture in which we don't apply the principle in a real research situation until after class or on our own time.
- When I give the students time in class to compose or research their assignments. I like being able to intervene during their composing processes. Also, since I've asked my students to post all work on Vista, I've found it effective to refer them back to comments I had posted to them earlier, refer them back to assignments or aspects of assignments they posted earlier, or refer them to each other's posted work when applicable.
- Teaching in these rooms has opened avenues of learning that I never realized were possible, not to mention the fact that my students this semester have been more engaged, I believe, than in the past several.

These faculty indicate that the computers have allowed them to foreground the actual work of composition by leading demonstrations as students follow along, by intervening during students' actual composing process, and by being a hands-on resource as students are engaged in their composing process. The faculty emphasis on working together and seeing the classroom as a workspace makes the work of composing more visible in these positive ways but also carries with it the necessity for rethinking the expectations teachers and students might have about the kinds of work in which each should be engaged. In the next section, we turn to faculty responses to those shifting expectations.

Shifting Expectations about Student and Faculty Roles and Responsibilities

In a classroom where writing machines are now present and available for in-class composing, students and teacher need to have a clearly understood notion of what productive work looks like and what to do about work which doesn't meet those expectations. These expectations are especially central when faculty are asked to think about the least effective use of computers for their teaching (see Table 3). Responses to this question broke down into one of three categories: no difficulties noted (12%), technical problems (28%), and problems with classroom participants related to the physical setting (60%).

Table 3. Reponses to the open-ended question "What has been the least effective use of the computers for your teaching in this class? Why?"

Problems related to the physical setting   60%

> Computers do tend to encourage students to multitask in class, checking e-mail, visiting websites, etc. Walking around and talking to specific offenders does not stop this behavior. However, this behavior occurs in multiple settings, from board room meetings to schools, so I think this is a cultural problem, not necessarily a problem just occurring in computer classrooms.

Technical problems   28%

> Vista has SO many glitches and user-friendly problems that my students have developed a strong dislike for the site. . . . my students see Vista as an evil entity that is constantly out to "get them." I have had to cut back on Vista simply because of the negativity it was creating in my classroom.

Few problems reported   12%

> Now that the network issues are resolved I have no concerns.

It is somewhat surprising that 12% of respondents identified no difficulties, given that this was the first semester of a widespread curricular change accompanied by newly designed and completed computer classrooms. Indeed, the fact that less than one third of the faculty (28%) identified technical problems as the least effective use of computers that semester was encouraging as it suggests that for these faculty, the technical difficulties which can be present even in smoothly running systems are not an

over-determining factor in their classrooms. Instead, more than half of the faculty responses identified problems of how people worked. Problems with classroom participants were rooted in the arrangement of bodies in the space, the limitations of the physical setup of the room, and pedagogical failures, but mostly the problems were rooted in control (and lack thereof) of students' engagement and attention. Problems of controlling students' attention were often linked to the other problems of how people arranged themselves in the space and the limitations of the physical set up of the room, as one faculty noted: "The least effective use of the computers would be the physical orientation of the computers. When I assign work to be done on the computers I have to constantly circulate around the room to make sure students are on task."

Faculty identified various difficulties involving classroom participants, the most common of which involved faculty's difficulty in keeping students on task and/or being in control (and aware of) what is going on with every student in the class, as the following faculty's survey responses suggest:

- I find that when I have the students work on the computers, it is hard to make sure that they are all keeping on task.
- The only problem, really, is that several students log on to chat rooms or personal sites while they are supposed to be working on class activities. They simply minimize the screens when I come around. It is difficult to control this type of behavior. It would be nice if we, as teachers, could place certain locks on the computers for what they can and cannot access during class.
- [T]he inability to monitor student's activities is problematic. Many would "surf" sites other than those needed for the assignment (myspace, facebook), but a simple click of the mouse would allow them to close the window before I, as the instructor, had a chance to catch them wasting class time. Short of random, spur of the moment commands for them all to put their hands in the air, followed by a walk around the entire room to check computer screens, I don't know how to fix this problem.

As these faculty responses indicate, the configuration of the classroom itself and the presence of the computers interfered with faculty expectations for control over the classroom. These responses suggest that faculty might be ill-equipped to deal with new forms of student underlife mediated by technologies. Robert Brooke describes student underlife as "the range of activities people develop to distance themselves from the surrounding institution [. . .]and assert something about their identity. Underlife allows individuals to take stances towards the roles they are expected to play, and to show

others the stances they take. When the kinds of student behaviors normally seen as misbehavior are examined in writing classrooms, what appears is exactly this sort of constructive, individual stance-taking" (144). Student underlife, in other words, "primarily attempts to assert that the individuals who play the role of students are not only students, that there is more to them than that" (151). Through observations of students in writing classrooms, Brooke concludes that underlife is always present in classroom settings and can often times be more productive and connected to learning than it appears to outside observers.

Faculty response to our survey suggest that this underlife is not only present in computer classrooms, but that computer classrooms—especially ones designed to redistribute power throughout the classroom—present new opportunities for underlife to surface and take new forms. Underlife mediated by computer technologies is, these faculty responses suggest, visible in new ways and calls upon faculty to develop new ways of responding. More importantly, though, this faculty's frustration at knowing how to respond to attention management issues suggests that writing program administrators need to pay attention to the ways computer technologies create new situations and call for new strategies. Responses by this program's faculty suggest more specifically that faculty teaching in computer classrooms need to understand underlife at a theoretical level as well as at a more practical level involving strategies for responding to it in their classes. "Random, spur of the moment commands for students to put their hands in the air" is a response to new technologically mediated concerns (student attention management) grounded in a traditional pedagogical framework at odds with the computer classrooms—one where the teacher mediates and controls the work being done and students are answerable at all moments to the teacher. Instead, in a multimodal, computer-mediated curriculum and classroom, the teacher is less likely to be the locus of control and work in the classroom as students multitask, work together and with their teacher, and mediate their classroom experience through the computers. As one faculty respondent put it, "Computers do tend to encourage students to multitask in class, checking e-mail, visiting websites, etc. Walking around and talking to specific offenders does not stop this behavior. However, this behavior occurs in multiple settings, from board room meetings to schools, so I think this is a cultural problem, not necessarily a problem just occurring in computer classrooms." Computer classrooms and multimodal curricula call on new ways of being and working in response to a new culture of composing. The role of the WPA is to create infrastructures which facilitate the learning and professional development opportunities teachers need to negotiate this transition.

CONCLUSION

Writing instruction—indeed, teaching in higher education more generally—is largely a privatized affair. The glimpses we receive of what is happening in individual classrooms in our programs are not necessarily representative of what's happening across a program. Our survey is limited by participant size, historical moment, and its particular location. But we believe it is a beginning move toward understanding what happens in writing programs as they transition into new curricula that can expand the kinds of processes and products teachers and students work with and integrate computer technologies into those processes. The faculty who participated in our writing program survey demonstrate through their responses that faculty development plays an important role in helping faculty do what they want to do and understand what is possible to for them to do. Specifically, these survey respondents have helped us form some hypotheses about the work WPAs need to engage in as they help writing program faculty transition and revise their curricula, learning and teaching theories and practices:

- Administrators should bring professional development opportunities and resources to faculty rather than waiting for faculty to come to them—because faculty might be unaware that some technology or use of technology could enhance and support their learning and teaching goals and—being receptive to learning and making a move to learn are two different things.
- Bringing new learning situations into the teaching community might lead to a higher participation rate and more widespread successful adoption than expecting faculty to know where to find resources and search them out.
- The more widely known and understood the writing program's goals and objectives, the more likely they will serve as an infrastructural support shaping the uses faculty put technologies to.
- Computer technologies can create new ways of being, learning, and working in the composition classroom which sometimes require new theoretical grounding and innovative practices.

DeVoss, Cushman, and Grabill suggest that "writing with multiple sign systems within technology-mediated environments pushes on systems and established ways of working with a pressure that other ways of writing don't exert" (17). While composition studies scholarship offers many reasons why we should teach with technologies or teach multimodal composing practices, we don't have as rich an understanding of what teachers encounter

when they make such a commitment to change. We believe that systematic data-based understandings (what Richard Haswell has called RAD research: replicable, aggregable, and data-based) of what is happening in such programs and individual teachers' lives are crucial at this historical moment. Writing program administrators need these kinds of understandings in order to build on what is working and intervene for what is needed. Writing program researchers need these kinds of understandings in order to build a disciplinary understanding of the work writing programs do both in the university and in the larger lives of their participants. Technology classrooms call upon new ways of being and working from administrators, faculty, and students. Our survey data suggest that the writing program faculty making this transition understand that the change is not about learning how to turn on the machines and use them but that the change is a more complex, conceptual one—how does the use of these machines affect the ways of being a teacher or a student or an administrator and the relationships among these different constituencies in the writing program?

Notes

1. Even though our effort was to avoid faculty slipping through the cracks, it is likely that several of the more highly resistant faculty are not represented in this survey data. For example, one teacher was known to the writing program coordinators and the digital composing coordinators to be resistant to both the new curriculum and to the integration of computers into her classes. She did not reply to email requests to meet with her classes, ignored a hard copy note taped to her office door, and cancelled class on two occasions when arrangements had finally been made to visit her class. These resistance tactics carried well into the end of the semester, so that the semester ended before we were able to survey her or her students.

2. The survey was distributed through surveymonkey.com, an online survey instrument which supports survey design, collection, and analysis. Survey participants log onto the survey and the results are tabulated in various forms (by individual, by question, in extended or abbreviated excel format) for downloading by the researcher. In our analysis, we read the individual question responses multiple times, becoming familiar with the themes as they emerged from the individual questions and from the survey as a whole. Guided by Glaser and Strauss's grounded theory methodological approach, we worked iteratively with the emerging themes, returning to the data to identify specific instances of the theme, finalizing them into codes with which we returned to the data. In this way, the open ended responses to survey questions were coded until all the responses were accounted for. The codes then evolved, in this article, into the items on the data tables.

3. This article reports on the faculty responses to our survey. The student survey responses contribute a valuable perspective on this issue. Dealing with that data, however, falls outside the scope of this article.

4. Quotes from faculty are taken verbatim from the open-ended survey responses.

5. The Faculty Professional Development Center is a university-wide center which supports faculty in teaching and research involving technologies from technical (how do I do this?) to pedagogical (why might I do this?). The Student Multimedia Studio, located in the University Library, provides similar types of support for undergraduate students. In both locations, faculty can ideally find support, educational opportunities, and resources for teaching.

6. Responses in the "Other" category included: "previous institution," "teaching computers previously," "my life as a student," "From my second B.A. degree, which is in Mass Communications (my Mass Comm. courses required heavy computer skills.)."

7. Thirty-one faculty responded to this question, yielding 60 coded instances of effective uses of computer technologies. These responses are not discrete from one another; they are often inextricable from one another. For example, in-class work might have been an implicit part of engagement of learners (in-class work being one way to engage learners in a computer classroom). But unless the response explicitly made reference to in-class work, it was not coded as in-class work. Coded responses, then, were explicit statements of the code. Additionally, the responses in almost every case involved more than one of the six types of response.

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Appendix A: Complete Course Goals and Objectives for Tier I

1) To learn how to recognize and strategically use the conventions of academic literacy.

    a)   Control formal features of syntax, grammar, punctuation, and spelling

    b)   Develop knowledge of genre conventions ranging from structure and paragraphing to tone and mechanics

    c)   Demonstrate appropriate means of documenting their work

    d)   Learn common formats for different contexts

2) To understand and use rhetorical principles to produce public and private documents appropriate for academic and professional audiences and purposes.

    a)   Focus on a purpose

    b)   Respond to the needs of different audiences

    c)   Respond appropriately to different kinds of rhetorical situations

    d)   Use conventions of format and structure appropriate to the rhetorical situation

    e)   Adopt appropriate voice, tone, and level of formality

    f)   Use various technological tools to explore texts

3) To practice good writing, including planning, revising, editing, evaluating sources, and working with others.

    a)   Develop flexible strategies for generating, revising, editing, and proofreading

    b)   Use writing as an open process that permits writers to revise their work

    c)   Learn to critique their own and others' works

    d)   Learn the advantages and responsibilities of writing as a collaborative act

4) To practice the processes of good reading.

    a)   Experience and use the many layers of meaning implicit in "texts"

    b)   Interact with a text to question the ideas it presents and the language it uses

    c)   Read and respond to written and visual texts

    d)   Learn to proofread and edit documents for academic and professional audiences

5) To learn web and digital environments valued by the university, for example, some or all of the following.

    a)   Use the internet as a research tool

    b)   Use word processing

    c)   Back up files on disks, CDs or jump drives

    d)   Send and receive email

    e)   Enter discussion in chat rooms

    f)   Access WebCT or Vista

6) To learn and practice how writing, at the university, is often based on previous research and inquiry and how to use this research in their writing.

    a)   Use writing and reading for inquiry, rather than merely reporting

    b)   Understand a writing assignment as a series of tasks, including finding, evaluating, analyzing, and synthesizing appropriate primary and secondary sources

    c)   Integrate their own ideas with those of others (that is, integrate sources to support their own stance)

Appendix B: Complete Course Goals and Objectives for Tier II

1) Build upon students' rhetorical understanding to compose documents that reflect the authors' recognition of using information to influence readers.

    a)   Define a problem

    b)   Find appropriate information

    c)   Evaluate information

    d)   Use appropriate rhetorical, linguistic, cultural, genre, disciplinary, and academic conventions

2) Use a variety of organizational strategies to integrate authorities smoothly into documents that explore issues and answer questions appropriate for liberal education.

    a)   Recognize and use strategies, formats and conventions from different fields of knowledge in writing assignments

    b)   Recognize choices in the development of writing to create documents that are appropriately organized in their larger structure, developed in paragraphs, and developed in tone

    c)   Demonstrate the ability to integrate a variety of sources while following the conventions of academic citation

    d)   Employ a varied style that includes sophisticated syntax and diction chosen for specific audiences, while avoiding errors in grammar, punctuation, and spelling

    e)   Recognize and use process strategies for writing: Build on previous process objectives geared to specific audiences by proposing, planning, and undertaking more complex research projects that involve a number of information literacy and writing activities

    f)   Continue to identify and evaluate relevant sources, in this case, of the student's own choosing. In general, the sources are longer, more complex, and more reflective of the student's understanding of discourse communities than in Tier I

    g)   Recognize the social nature of writing by engaging in both individual and collaborative inquiry projects, group brainstorming, research, composing, and peer review throughout the several stages of the writing process

    h)   Identify, recognize and critique the intellectual and social contexts and cultural assumptions in which one frames the inquiry/ argument

    i)   Begin to integrate visual and/or auditory material into print texts

3) Read and evaluate various sources and modes of information important to research and inquiry in academic and professional settings.

4) To learn web and digital environments necessary for conducting and writing research, for example:

    a)   Understand the effect that computing is having on the culture

    b)   Participate in synchronous and asynchronous discussions that extend learning beyond the classroom

    c)   Engage in interactive multi-media projects to connect the insights gained from practice with theory.

    d)   Use various software, especially those that shift the traditional time and space for learning, to practice cooperative and collaborative strategies

    e)   Use university-supported course management software

    f)   Seek innovative ways to connect scholarly inquiry with the world beyond the academy

5) Acquire and Practice Information Literacy

    a)   Build on Tier I goals by effectively integrating research into a more formal inquiry project

    b)   Use more specialized or appropriate databases than Academic Search Premier

    c)   Become more aware of academic honesty issues and ramifications of records privacy, plagiarism and copyright issues, especially on the web

    d)   In the final project demonstrate mastery of all information literacy skills introduced in Tier I and Tier II

Appendix C: Job Description for the Coordinator of Digital Composing

The Coordinator of Digital Composing for English supervises the teaching staff of approximately 75 teachers using the 6–7 departmental computer classrooms and the Technology Support Staff person. This work includes serving as a contact person for technology-related issues in the Department of English, working with the departmental administration regarding issues of technology, working with teachers scheduled to teach in the computer classrooms, and creating structures which encourage innovative and creative teaching with technology.

Working with administration

• Working with the Writing Program to design and utilize computer-classroom teaching environments.

- Working with administration (in the department, the College, and the University) to maintain and upgrade the software and hardware in the computer classrooms
- Serving on University technology committees
- Responding to requests from administration (departmental, College, and University) regarding technology (for documents such as equipment proposals, program reviews, plans for funding, departmental needs, etc.). Response takes form of meetings and written documents.
- Hiring and supervision of the technology support staff
- Coordinating the maintenance of the computer classrooms (the Technology Support Staff person is responsible for the technical maintenance of the machines; Coordinator coordinates with the Technology Support Staff these needs)
- Collaborating on design and upgrades of computer classrooms.
- Serving as contact person for requests for information about teaching with technology in the department (i.e., coordinating computer classroom open houses for campus tours, responding to on-campus and off-campus requests for information about the uses of technology to teach in our department)

Working with teachers scheduled to teach in the computer classrooms

- Orientation of teachers scheduled in the computer classrooms (this orientation usually has taken the form of a two to four day meeting prior to the beginning of the semester)
- Coordination of twice-monthly teaching group meetings (these teaching groups alternate between open-ended agendas and meetings focused on some issue/reading in computers and composition)
- Supervision of the teaching staff
- Trouble-shooting and conflict resolution among the teaching staff
- Observations of teaching staff
- Program-wide workshops on digital media for the Writing Program
- Conferencing on individual, as-needed basis with individual teachers on integrating technology into their teaching
- Setting lab policies in conjunction with Assistant Coordinator and teaching staff

Creating structures which encourage innovative and creative teaching with technology

- Offering workshops on technology for the department as a whole

- Maintaining the digital composing listserv
- Working with the Assistant Coordinator to build a web-based re-source for all departmental teachers interested in writing technologies for teaching (some resources include sample syllabi and assignments, excerpts from classroom observations, connections to online sources)
- Working with the Assistant Coordinator and other technology-savvy teachers to build summer outreach programs using our knowledge of writing technology-based pedagogies and the availability of the com-puter classrooms.
- Working with the Assistant Coordinator and interested teachers on scholarly projects (conference presentations and publications) based in questions which arise from administrative work with technology.

Appendix D: Job description for the Assistant Coordinator of Digital Composing

The Assistant Coordinator of Digital Composing (AC) works with the coor-dinator to address the practical and pedagogical needs of teachers using the computer classrooms and to create structures which encourage innovative and creative teaching with technology. The AC serves a two-year term.

Coordinating the practical needs of teachers

- Maintaining technology program specific web pages
- Setting lab policies with Coordinator
- Scheduling with composition staff
- Maintaining a drop-in schedule for teachers not regularly scheduled in the computer classrooms

Coordinating the pedagogical needs of teachers

- *This is predominantly a pedagogical position*—the more technical as-pects of computers for teaching fall under the technology position. Our biggest resource is our teachers. AC helps faculty and students teach and research computers and composition.
- With the Coordinator planning and conducting orientation meetings at the beginning of the semester
- Scheduling and leading teaching groups throughout the semester (once a month meeting)
- Co-leading (with Coordinator) whole staff discussion throughout se-mester (once a month meeting)
- Two self-designed Workshops per semester on continuing education for teaching staff

- Working one-on-one with current teaching staff on teaching issues

Creating structures which encourage innovative and creative teaching with technology

- Working with the Coordinator of digital composing to build a web-based resource for all departmental teachers interested in writing technologies for teaching (some resources include sample syllabi and assignments, excerpts from classroom observations, connections to online sources)
- Working with the Coordinator of digital composing and other technology-savvy teachers to build summer outreach programs using our knowledge of writing technology-based pedagogies and the availability of the computer classrooms.
- Potentially working with the Coordinator and interested teachers on scholarly projects (conference presentations and publications) based in questions which arise from administrative work with technology.

The AD must maintain

- professional standards in working with other faculty
- confidentiality as a representative of the program who is privy to private interactions between staff and the program
- her own schedule. The position is for 10 hours per week, though no time sheets are required. The time commitment varies depending on the time of the semester.

Appendix E: Faculty survey questions

The survey was distributed and collected online through surveymonkey.com. Questions 9, 10, 12, and 13 were open-ended. Other questions included multiple choices, including "other" with a space for participants to write in their answer.

1. What is your institutional rank?

2. How often does your class meet in the computer classroom?

3. In what ways have you used the computers in class?

4. In what ways have you assigned computers to complete our of class assignments?

5. How often have you used the computers in this class?

6. How have you learned to use the computers as teaching and learning tools?

7. What has been the most effective use of the computers for your teaching in this class? Why?

8. What has been the least effective use of the computers for your teaching in this class? Why?

9. What are the required assignments for this course? What relationship do you see between the assignments, the computer technologies, and the goals and objectives for the course?

10. What are the required readings for the course? What relationship do you see between the readings, the computer technologies, and the goals and objectives for the course?

11. Please indicate your degree of agreement with the following statements: [strongly agree, agree, neither agree nor disagree, disagree, strongly disagree]:

    - I feel knowledgeable about using computer technologies
    - I am familiar with technological resources and support programs on campus for students
    - I am aware of the professional development opportunities provided by the writing program
    - My class has regularly used the computer technologies in our class meetings
    - My students feel comfortable asking me for further instruction in how to use composing technologies
    - I am comfortable letting students teach each other and me about composing technologies
    - I have learned a lot about composing with technologies from teaching this class
    - My class has used the composing technologies to their fullest potential/capability

12. Please comment on your experience in the computer classrooms this semester.

13. What kinds of additional support or professional development opportunities would you find helpful? What would you like to know more about?