CPTSC

Volume 1 Issue 2

Programmatic Perspectives

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Programmatic Perspectives is published twice a year by the Council for Programs in Technical and Scientific Communication.

The journal is available at ‹http://www.cptsc.org/pp/›.

Programmatic Perspectives

Volume 1, Issue 2 September 2009

Issue Preview

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Our work of expanding and extending the professional discourse on program administration in professional, technical, and scientific communication continues with this, the second issue of *Programmatic Perspectives*. Reader feedback suggests that the community found issue one worthwhile and scholastically solid. Given the submissions we have received, we look forward to continued good will with this and future offerings.

Remember that the *Programmatic Perspectives* website offers readers opportunities to participate in discussion with authors and community members through the *Programmatic Perspectives* blog. So far, direct response has been light. Please consider extending these discussions even further by engaging us and other readers in an exchange about the ideas the authors offer.

Issue two opens with an examination by Jay Gordon of two genres of professional discourse: scholarly journals and programmatic websites. Gordon suggests that the content of these sites differs more greatly than can be attributed to mere genre expectations, that study of these sites reveals tracings of the community's ongoing internal debates about professional and programmatic mission and value.

Collaboration and the design of pedagogical spaces provide the focus for the article offered by Amanda Bemer, Ryan Moeller, and Cheryl Ball. These authors anchor their discussion of the redesign of a teaching lab at Utah State University with examination of scholarly work on collaboration and spatial dynamics.

Karen Schnakenberg's keynote address from the 2008 meeting of the CPTSC in Minneapolis, Minnesota offers historical reflections on the evolu-

tion of academic core knowledge and programmatic design, and how those changes connect to the growth and maturation of the profession and discipline.

Kaye Adkins and Jane Frick present a Program Showcase of the Master of Applied Arts in Written Communication at Missouri Western State University. This new program just welcomed its first students in August 2009; thus the showcase emphasizes the process of proposing and developing the programmatic context within which those students will work. Key to the design are the twin demands that the MAA in Written Communication be interdisciplinary and that it serve a body of developing professionals who bring workplace experience with them.

In the editorial for this issue, Karla Kitalong reflects upon the mentoring and collaboration philosophy that informs the editorial decision-making process of *Programmatic Perspectives*. Although the editorial values she describes may result in some measure of seeming chaos, it must be viewed through the lens of *chaos theory*, where order is evident at both the microscopic and macroscopic levels, and ultimately engages in pattern building that draws in the whole community.

We close issue two in celebration of two colleagues—Vickie Mikelonis and David Morgan—with memorials from Constance Kamp and TyAnna Harrington.

With that, please dive in. Enjoy. Engage. Exchange. We'll see you in the blog.

The Pedagogical Missions of Professional and Technical Communication Programs:

What We Say in the Journals and What We Say on the Web

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Abstract. This article examines the construction of the pedagogical missions of professional and technical communication (PTC) programs, focusing on two forms of professional discourse. Specifically, I look first at discussions and debates about our pedagogical missions in the internally directed or private conversations of scholarly journals. Then, I examine the externally directed or public discourse of 123 PTC program websites. To compare these two discourses, I frame their differences in terms of the *doxa*, or unspoken beliefs, upon which they ground their approaches to teaching students the *techne*, or principled practice, of PTC. The main conclusion of my study is that these differences reflect more than mere genre variations; they reflect important internal conflicts within the attitudes and perspectives on the role of PTC programs as sites of pedagogy. I conclude with the recommendation that we consciously resist the doxa that values pre-professionalism for its own sake by designing websites that refer directly to the topics and themes that arise in professional journals.

Keywords. professional communication, technical communication, program missions, pedagogy, *doxa*, *techne*

The purpose of this article is to examine the construction of the pedagogical missions of Professional and Technical Communication (PTC) programs in terms of two discourses: (1) scholarly journal articles, which represent the internal disciplinary conversations about PTC pedagogy, and (2) introductory statements on program websites, which represent their pedagogical missions to the outside world. As a PTC program administrator as well as the unofficial web designer for the English department in which I work, I am acutely aware of both the distinction between these two genres and the ways in which they combine to create public representations of PTC programs. To put my discussion into a broader rhetori-

Programmatic Perspectives, *1*(2), September 2009: 112–138. Contact author: ‹jaylgordon@gmail.com›.

cal context, I invoke the classical rhetorical notions of *techne* and *doxa*[1] to describe the ways these forms of discourse ground their beliefs about PTC practice (*techne*) in a specific belief system (*doxa*). The main conclusion of this study is that the differences between these two discourses reflect more than mere genre variations; they reflect significant internal conflicts within attitudes and perspectives about the role of PTC programs as sites of pedagogy. My purpose, therefore, is to raise awareness of these internal conflicts with the hope of generating discussion about the pedagogical missions of PTC programs. Specifically, my aim is to offer one way for us to reflect on what these program missions are and ought to be and how we present these missions to the public.

Why is this issue important? First, the difference between the two discourses is striking. As I show, what we say in PTC journals suggests a dynamic, stimulating image of the field. Even though job preparation is part of the mix, this private discourse—even just that portion addressing pedagogy—is rich with connections to classical and modern rhetorical theory, diverse conceptions of literacy, and critical perspectives on technology and culture. The picture is much different in the public discourse; by and large, degree programs are presented as sites of pre-professional training. Although it is expected that academic journal articles offer a layer of reflective discussion not appropriate for program websites, it is puzzling that the latter show so little of the richness in topics and perspectives found in the former.

Second, the striking differences between the two discourses reflect, I would suggest, a deep tension between two *doxa* upon which programs build the pedagogical discourse of PTC. On one hand, widely popular *doxa* holds that higher education is essentially a route to a job or career; in adherence to this perspective, we find little to question about presenting a public image of program missions that is unapologetically pre-professional. On the other hand, and somewhat ironically, when we turn inward and appeal to PTC's disciplinary *doxa*, we find just as little to question about problematizing the idea of pre-professionalism, both explicitly (by attacking the notion) and implicitly (by focusing attention elsewhere).

It would seem simple enough to say that these conflicting *doxa* do not present a contradiction because pedagogical missions are both pre-professional and much more. The problem, though, is that by continuing

[1] Both *techne* and *doxa* could take various forms as nouns in classical Greek, and both are used in various ways in modern literature. I am using *techne* primarily as an abstract, countable noun, as in "the *techne* of rhetoric" (singular) or "the *technai* of woodworking and shipbuilding" (plural). I am using *doxa* as an abstract mass noun akin to *opinion* in the phrase "public opinion."

to present a version of program pedagogical missions to the public that is not only much simpler than the versions we foster among ourselves but also at times contrary, we may find ourselves unable to provide a coherent, generalized account of just what it is we're trying to do. To borrow Gerald J. Savage's (1996) phrase, we betray the conflict between programs' theoretical and pedagogical responsibilities, that is, between what we suggest our priorities are in journals and what we suggest they are on the Web.

Two Useful Terms from Classical Rhetoric: *Doxa* and *Techne*

The classical Greek terms I use—*doxa* and *techne*—merit some discussion. Taking the second term first, one of the key program missions is to impart a *techne* to students. A *techne* is a governed or principled practice that often results in a product of some kind, although the way the term is used in ancient Greek discourse changes and develops as discussions move from Homer to Plato to Aristotle, broadening in applications along the way (see Roochnik, 1996, pp. 17–88). Indeed, in the classical Greek context, Papillion reminds us that *techne* could refer to just about any "craft or ability to do something, a creative skill" either "mental or physical, positive or negative" (p. 149). Nevertheless, modern appropriations of the term tend to refer at least implicitly to Aristotle's (1990) definition in Book VI of the *Nicomachean Ethics*: a *techne* is a practice that in "principle is in the producer and not the product… involving true reason concerned with production" (1140a; p. 89).[2] This practice, Janet M. Atwill (1998) explains, has three distinctive features: It is "never a static normative body of knowledge," it "resists identification with a normative subject," and it "marks a domain of intervention and invention" (p. 48).

If we think of PTC practice as a *techne*, then central to program missions is helping (and challenging) students to become masters, or at least effective wielders, of this *techne*. They should, to use Atwill's (1998) framework, understand that PTC is not just a finite set of skills, but a power or dynamics to get various work done; they should not only understand that this *techne* can be learned but also that teachers and practitioners continue to learn as circumstances change, and they should see that they can and should use their knowledge in fluid (but also recurring) situations.

Technai, as Frances J. Ranney (2005) puts it, are "habits of mind" (p. 20) and as such may be guided or influenced by both *episteme* and *doxa*. *Episteme* generally refers to explicit, theoretical, or justifiable knowledge, while

[2] Line numbers referring to the Greek passage come first, followed by the page number in the translation used here.

doxa generally refers to beliefs that are popular, but unspoken or unexamined. In ancient contexts, distinctions between the two are drawn in both epistemological and sociological terms. In Plato's (1997) *Crito*, for example, Socrates and Crito agree that only certain opinions or beliefs (*doxa*) are worth valuing—those reflecting the genuine knowledge or expertise (*episteme*) that only certain persons possess (47a–b; p. 41). Although Aristotle would not have disagreed with Plato on this basic epistemological point, his use of the term *endoxa*, referring more or less to *doxa* considered credible by the wise, reflects a fairly different perspective because Aristotle does not dismiss the value of opinion in the way that Plato does. In Aristotle's view, opinion may be useful knowledge, not just the illegitimate opposite of truth. The core arguments of Aristotle's (1991) *On Rhetoric*, for instance, draw on the en*doxa* represented by the common and special *topoi* (Haskins, 2004).

Because I aim to illustrate the extent to which program-mission discourses reflect a largely unspoken and unexamined commitment to two different beliefs about what constitutes their pedagogical dimension, *doxa* seems a more appropriate term for identifying these differences than *endoxa* (or *episteme*). In this way, my use of the term reflects that of recent theorists who have treated *doxa* as a constellation of the values-grounding beliefs we take for granted or about which we may not even be aware. The term's use in this context is closely related to ideology, but can also refer to notions such as "public opinion, verisimilitude, commonsense knowledge, commonplace, *idée reçue*, stereotype, cliché" (Amossy, 2002, p. 369).

In the realm of social theory, one of best known modern theorists of *doxa*, Pierre Bourdieu (1977), adapts the term to serve his theoretical explorations in sociology and anthropology. His definition focuses on the unspoken, unreflective aspect of *doxa*. For instance, in *Outline of a Theory of Practice*, he writes that

> when there is a quasi-perfect correspondence between the objective order and the subjective principles of organization… the natural and social world appears as self-evident. This experience we shall call *doxa*, so as to distinguish it from an orthodox or heterodox belief implying awareness and recognition of the possibility of different or antagonistic beliefs. (p. 164)

Put another way, "*Doxa* is the relationship of immediate adherence that is established in practice between a *habitus* and the field to which it is attuned, a pre-verbal taking-for-granted of the world that flows from practical sense" (Bourdieu, 1980, p. 68). Bourdieu's focus on the "pre-verbal taking-for-granted" dimension of *doxa* is particularly relevant.

What I am suggesting is that in apparently being committed to two different, and possibly contradictory, versions of program pedagogical missions, we are in a condition of immediate adherence to two different *doxa*. This condition is problematic for two reasons. First, the contradiction itself hurts our credibility. If the *doxa* that makes us uneasy and sometimes righteously indignant in private discourse is the same *doxa* that we use publicly to advertise the goods programs offer (i.e., "PTC is all about job preparation"), then we are talking out of both sides of our mouths. Second, it suggests, perhaps, that we have not become secure enough as a discipline to present a truly self-aware, reflective, and consistent version of our program missions in both contexts.

Methodological Clarifications

Before moving any further, a few methodological clarifications are in order. First, to address the question of how to adequately capture both the internally and externally directed discourse on professional and technical communication pedagogy, I refer primarily to documents (paper or Web) that use such terms as *professional writing* and *technical communication*. Although professional and technical differ somewhat in their disciplinary connotations, they are commonly used together in academic programs. Moreover, in published literature, technical and professional have appeared side-by-side for over four decades (see, e.g., Estrin's 1963 edited volume, *Technical and Professional Writing: A Practical Anthology*).

Second, my method for adducing evidence is largely an interpretive process of identifying representative statements in the texts of both scholarly articles and websites. Early in my study of these websites, I created a detailed coding scheme, but quickly discovered it would be more useful to adopt a flexible, open-ended method. I shifted to such an approach largely because a coded content analysis is more fine-grained than necessary; the statements I've counted as evidence tend to sort fairly neatly into relatively coarse thematic groupings while still adequately serving my investigative aims.

Third, the representative statements are limited to those programs with links listed on the websites of the Association of Teachers of Technical Writing (ATTW), the Council for Programs in Technical and Scientific Communication (CPTSC), and the Society for Technical Communication (STC). From these lists, I have limited my study to four-year universities granting at least bachelor's degrees in the United States. However, I do include material from programs currently granting only minors or undergraduate certificates (but only if for credit) on the assumption that one key way in

which PTC programs pursue their pedagogical missions is by establishing more and higher degree programs. The point of using these criteria is to include as many sites as possible while keeping the scope of the project manageable. In total, I reviewed 123 college and university websites, each of which was accessed during February 2008. For my discussion of website texts, I quote no more than five representative statements, indicating contextually how prevalent the sentiments in the statement seem to be (as opposed, that is, to tabulating all of them). In addition, I refrain from mentioning schools by name to avoid any appearance of promoting or critiquing a particular program.

Finally, I would like to emphasize that my aim here is to draw reasonable conclusions from a reasonable comparison. One might argue, for instance, that journal articles and websites are apples and oranges and that differences among them are due largely to differences in their genres—that is, in their respective audiences, purposes, structures, and social functions. In response, I suggest genre differences alone do not account for what appear to be incompatible versions of our whole philosophical orientation as we move between these two discourses. Genre differences might account for a somewhat more practically oriented discourse online and a more theoretical one in journals, but as I mentioned previously and show later, the differences are simply too striking and consistent to suggest anything else other than an illustration of a deep, internal conflict within the pedagogical discourses of PTC programs.

Program Missions: What We Say in the Journals

If one central program mission is to help students become practitioners of a certain sort of *techne*, then the question arises as to what *techne* this is and what critical and productive knowledge we can expect students to demonstrate as a result of these efforts. With respect to these themes, what we say in journals is complex and multivocal. For example, we do acknowledge the importance of preparing students for work after college, but rarely proclaim that the *techne* of PTC ought to be essentially preparation for a particular job. In some cases, we critique such essentialization outright, and at the very least, we look for ways to augment it with humanistic or posthumanistic goals. In this section, I provide a brief survey of the various topics and themes that arise in professional journals when addressing, either directly or indirectly, the relationship between programmatic missions and pedagogical goals. This relationship includes not only the matter of pre-professionalism itself but also classical rhetoric, modern rhetorical theory (including imports from cultural theory and the social

sciences), concepts of literacy, service learning, and what might be called the pedagogy-practice gap. This brief survey of pedagogical approaches doesn't do full justice to their significance in pedagogy. A more in-depth discussion, however, is beyond the scope of this article.

Pre-professionalism Addressed Directly

First, it might be useful to look at academic discussions that address pre-professional preparation directly. The central question in this context is whether PTC pedagogy ought to be built on a framework that, in a sense, is already packaged and handed to us by employers, professions, the real world, and so forth (see, e.g., Casady & Wasson, 1994). For example, in a survey of ATTW members, David Dayton and Stephen A. Bernhardt (2003) collected responses about what instructors feel are the "most important skills for students to succeed as professionals" (p. 30). The two most frequent responses were "rhetoric" and "writing and editing," followed by "technology," "personal traits and work skills," "specialized expertise," "document design," and several others.

Few instructors would question the value of learning these skills, but the results do beg the question of why program missions should be constructed in terms of how we will help students succeed as professionals. The seemingly obvious rationale might be that program graduates will use their degrees to get jobs; so we are duty-bound to prepare them with the skills they will need to do so. But when that perspective is guided by the popular *doxa* about the meaning of a college degree, we leave ourselves open to questions about why we are following it in a seemingly uncritical way. Indeed, Jack Bushnell (1999) argues that the integrity of PTC programs is hurt more than helped by the pre-professional model:

> We have, willingly or not, become training departments for corporate "clients" who provide us with internships and fellowships for our students, and ever increasing numbers of good-paying jobs for our graduates. In our eagerness to obtain real workplace experience for our young technical-writers-in-training, we don't challenge students' own strongly held faith in the corporate model as a goal, an end point, characterized by affirmation, stability, prosperity, and meaning. So, to the extent that we allow that narrative to be perpetuated in our classrooms, we also run the risk of failing to encourage questioning and critique as important, self-distinguishing professional and political acts. (pp. 175–176)

Stuart A. Selber (1994) addresses the problem Bushnell (1999) identifies by raising several questions about the sometimes inordinate attention to training

students to use technological tools. Based on a survey of PTC faculty, he found that the most frequent responses included a common-sense rationale (i.e., why wouldn't we?) and a marketability rationale (i.e., computers skills help you get and keep your job) (pp. 378–380). Given these results, Selber identifies several challenges associated with training in these skills: "balancing technological with literacy and humanistic concerns," "re-envisioning our computer-related curricula" in light of these other concerns, and "educating teachers who use computers in their classrooms" about the pedagogical possibilities of new technologies (pp. 381–382). Following this observation some years later, Johndan Johnson-Eilola and Stuart A. Selber (2001) argue for a pedagogical mission grounded in the cultivation of three practices: thinking, which "focuses on understanding technical communication from a theoretic perspective"; doing, which involves the production of examples of technical communication; and teaching, which should also be seen "as a primary activity of technical communication" (p. 410).

Classical and Modern Theories

In the late 1980s and early 1990s, some of the first works exploring connections between classical rhetoric and modern technical writing appeared (Rivers, 1994), such as those by Edward P. J. Corbett (1989), Rosemary L. Gates (1990), and John F. Reynolds (1992). A decade or so later, Tracy Bridgeford and Michael R. Moore (2002) edited a special issue of *Technical Communication Quarterly* on "*Techne* and Technical Communication" that included several articles on how *techne* can help animate the discussions not only of the programs' pedagogical approaches (Dubinsky, 2002) but also the student's learning process (Moeller & McAllister, 2002) as well as the general relationship between classical rhetoric and modern views of PTC (Gordon, 2002).

Beyond appropriating classical rhetoric, the uses of contemporary theoretical and conceptual frameworks are eclectic. Carl M. Whithaus and Joyce M. Neff (2006), for example, adopted a social constructionist framework for examining the use of video (interactive television and video streaming) in teaching an online course in management writing. Filipp Sapienza (2007) applied the poetic theories of Imagism and Acmeism to the discussion of single-sourcing. Andrew Mara (2006) adapts the charette, a method historically used in design and architecture schools, involving an intensive and collaborative problem-solving process to model technical communication situations. And activity theory, based on Russian psychological movements inspired by the work of Lev Vygotsky, plays a part in discussions about genre and pedagogy (Freedman & Adam, 2000; Kain & Wardell, 2005).

Forms of Literacy

Given the last few decades' interest in the concept of literacy from several angles—educational theory, social history, and rhetoric and communication—it's not surprising to see the idea explored and applied to discourse about the aims of PTC programs. Recent work has focused especially on the varieties of literacy we ought to cultivate in students. For example, Ed Nagelhout (1999) argued that introductory PTC courses should promote four kinds of literacy: rhetorical, visual, information, and computer.

Nagelhout's argument, in his article, "Pre-Professional Practices in the Technical Writing Classroom," reinforced the notion that PTC pedagogy ought to aim primarily for pre-professional goals. However, literacy can mean more than simply the possession of knowledge and skills required to acclimate a person more efficiently to workplace discourses. Taking the multiple-literacies idea further, for example, Kelli Cargile Cook (2002) argued for not four but six types of literacy: basic literacy, "making appropriate reader-based decisions" (p. 9); rhetorical literacy, audience understanding and analysis as well as "awareness of one's own ideological stance as well as the audience's stance(s)" (p. 10); social literacy, understanding the social and cultural myths and practices within specific working environments (pp. 11–12); technological literacy (p. 13); ethical literacy (p. 15); and finally, critical literacy, "the ability to recognize and consider ideological stances and power structures and the willingness to take action to assist those in need" (p. 16).

Rhetorics of Technology

Associated with problems of technological literacy that Cargile Cook (2002) described are broader issues about technology's place in pedagogy and society in general, issues that might come under the heading of rhetorics of technology. Within the context of PTC program missions, a number of interesting discussions exist. For example, a special issue of *Technical Communication Quarterly* on "Computer Classrooms and Technical Communication Pedagogy" (Albers & Cargile Cook, 2002) includes articles on teachers' attitudes toward technology in the classroom (Selting, 2002) as well as how to put technology into a critical perspective (Breuch, 2002; Salvo, 2002). Not surprisingly, the globalization of communication networks has led to an interest in online education from both programmatic and theoretical perspectives (e.g., Paretti, McNair, & Holloway-Attaway, 2007; St. Amant, 2007). Others have discussed how to use concepts from technological development such as usability (Schneider, 2005) to enhance students' sense of the ways in which technical communication is socially situated.

Service Learning

Some PTC programs have been exploring the rich field of service learning, a mode of instruction that encourages students to apply their knowledge and skills to activities that help the local community. Additional work in this vein focuses on a wide variety of approaches, including those touching on themes of ethnography (e.g., Matthews & Zimmerman, 1999), cross-cultural outreach (e.g., Sapp & Crabtree, 2002), and engagement with nonprofit organizations (e.g., McEachern, 2001). At the heart of this form of service learning is a commitment to civic engagement (see special issue guest edited by James M. Dubinsky, 2002), which has been recognized not only in the scholarship but also in a recent textbook (Bowden & Scott, 2003) designed specifically for service learning courses in technical and professional communication (see also Scott, 2004).

The Pedagogy-Practice Gap

Over the years, an energetic discussion has emerged among instructors and program directors concerning a perceived gap between what students are taught in the classroom and what is demanded of them when they leave school to pursue careers. Indeed, at least one book-length study of the subject has been published (Dias, Freedman, Medway, & Paré, 1999). This work resulted from a seven-year study of writing in these two different contexts:

> It is largely in academic settings that writing calls attention to itself and, more often than not, is regarded in isolation from the larger social and communicative action to which it is so intrinsically bound. On the other hand, in non-academic workplace settings, writing is seldom regarded (when it is regarded at all) as apart from the goals, occasions, and contexts that engender writing. In these settings, writing is a means, a tool in accomplishing larger goals, which may involve actions other than writing and other participants who function in a variety of roles. It is just this kind of disjunction between academic and workplace settings that occasions the study from which this book derives. (p. xi)

The distinction Dias, Freedman, Medway, & Paré (1999) identify reflects a tension that goes back a long way. Donald H. Cunningham (2004) notes four practices that during the 1960s and 1970s kept the gap fairly wide: (1) literary texts were read as models of good writing in PTC classes, (2) students were expected to write on scientific and technical topics "in the form of literary essays," (3) no style textbooks were designed specifically for PTC genres, and (4) PTC classes were assigned "to just about anybody who was willing to teach them or who needed to have a class to fill out a teaching load for the term" (pp. 122–123).

It is unlikely that many students in PTC courses today encounter the same situation Cunningham (2004) described, but some would say that any perception at all of the pedagogy-practice gap is an illusion (e.g., Bushnell, 1999). It exists, the argument goes, only if we presume that PTC programs must attend to certain goals of pre-professional training and only if we presume that we know what those goals are. In other words, there is no reason to worry as long as we hold true to our ideals as educators in the tradition of the liberal arts.

This conclusion does not work for everyone, however, because it reflects deep questions in programmatic discussions about the role of pre-professional curricular approaches. Indeed, the sheer volume of texts on the pedagogy-practice distinction suggests that the perception of a significant gap or at least a tension is still widespread. Many of these distinctions offer various curricular suggestions as a way of closing the gap or resolving the tension. For example, Paul Meyer and Stephen A. Bernhardt (1997) argued that curricula should enculturate students into the forms of workplace literacy, and other scholars (e.g., Blakeslee, 2001; Hanson & Yee, 2001) offered proposals for courses and curricula that put students in contact with professional situations, in some cases (e.g., Bosley, 1992; Tovey, 2001) through the creation of alliances between academic programs and local industries.

Still others have attempted to address the pedagogy-practice gap by providing students with experiences simulating the professional setting. For example, Peter J. Hager (1990) argued for what he calls mini-internships on campus that provide students with the benefits of an internship, but with fewer of the costs of setting up a full-scale, off-campus program, and Lee-Ann K. Breuch (2001) discussed how to prepare students to work with clients, suggesting methods of "interviewing, listening, and seeking clarification" with what Ann M. Blakeslee (2001) called the "disorientation, frustration and double binds" students find themselves experiencing (p. 184; see also Kelly & Barnum, 1987; Zimmerman & Long, 1993).

With respect to PTC program missions, the extensive discussion of a perceived pedagogy-practice gap raises some important questions. Although many scholars believe the gap exists and work to close it, others seek to debunk the familiar dichotomy—that academia is one thing, and the "real world" is quite another. Gerald M. Parsons (1989), for example, has argued that referring to the real world as somehow divorced from academia hurts the field's prestige in several ways—it degrades students' academic work, it polarizes those who presume that a dichotomy exists as well as those who might not, and it is anti-intellectual because it implies that PTC scholarship is somehow disconnected from reality. Savage (1996) took up this theme as well, encouraging PTC instructors to seek alternative sites for students' practice. Framing the problem more

simply, Patrick Moore (1997) argued that we miss the point in trying to see technical communication as rhetorical discourse, a viewpoint that he believes represents an academic myopia because from his perspective, it is better seen as instrumental discourse.

Pedagogical Missions: What We Say on the Web

Turning from internally directed to externally directed discourse, from private to public statements, most of the variety and complexity of the former is lost. Some shift is to be expected, of course, because scholarly and online statements are two distinct kinds of discourses: the aim of scholarly articles, in the context of discussions of PTC program missions, is to provide commentary among ourselves on conceptions of those missions; the aim of program websites, in contrast, is simply to state one mission or another to a broader public (if a mission is stated at all; in many cases, any larger pedagogical mission is only implied). As different as their audiences and immediate rhetorical aims may be, they both reflect, even if only implicitly, a collective and general sense of what should constitute PTC program goals. To put it in terms of *doxa*, both the journal article and the website are discourse forms sanctioned and ritualized by the community of instructors and program directors and both presumably would reflect the same set of values and assumptions—the same *doxa*—if produced by like-minded persons.

Comparing these two discourses is not, therefore, simply to identify formal differences in their textual structure or immediate audiences or purposes. The purpose, instead, is to identify the underlying *doxa* that seems to inform the conception of the *techne* of PTC in each forum and to comment upon these differences. To that end, the following section provides some data about PTC program sites and degree offerings, a brief survey of website texts in terms of the main topics and themes they reflect, and some additional discussion of the relationship between the language of the websites and the *doxa* their statements seem to represent.

PTC Program Sites and Degree Offerings

The majority of PTC programs are housed within English departments, although an increasing number have their own departments or are associated with other departments such as communication or business. Specifically, of the 123 websites examined (see complete list of schools in the Appendix), 68 PTC programs (about 55%) were clearly housed in departments of English. This number increases to 88, or just over 70%, when including programs in departments that, due to the school's nature and size, would typically be covered by an English department, along with other fields (e.g., Languages & Literatures or

Humanities). The remaining 25% are distributed into a variety of institutional quarters. The largest single group includes nine in departments of communication, followed by a handful of programs housed in colleges or schools in the arts and sciences, but not within a particular department. Among the rest, PTC programs are located in business and engineering schools, in departments of rhetoric and/or writing studies, in interdisciplinary configurations (e.g., as a joint venture of English and Communication departments), and in two cases, in their own departments.

PTC programs take a variety of forms and offer several degree options. I looked only at programs in four-year institutions that offer at least a bachelor's degree, although from among these I examined statements from programs offering just a bachelor's certificate because directors of these programs presumably may wish to develop more and higher degree offerings. Although I attempted to identify precisely each degree offering, some ambiguities exist. For example, at times it can be hard to tell whether a bachelor's degree is in English with a concentration in a variant of PTC or a full major in its own right. In general, unless it was clear that the degree was in PTC (or a variant) specifically, I assumed that the degree was in the major of its housing department (almost always English) and that the PTC variant was a concentration or emphasis (see Table 1).

Table 1. Breakdown of Offerings in Terms of Degree Level and Type

62 BA degrees	23 in English with an option, emphasis, or concentration 31 in a variant of PTC remainder (8) appear under a variety of names that, based on website descriptions, seem to be variants of PTC in terms of their curricula (e.g., Digital Technology and Culture, Rhetoric and Technical Writing, and Technical Journalism)
23 BS degrees	20 in a variant of PTC remainder (3) appear in closely aligned fields (e.g., Multimedia Writing and Technical Communication)
35 MA degrees	13 in English with an option, emphasis, or concentration remainder (22) appear in a variant of PTC
20 MS degrees	all appear in a variant of PTC

As one can see, BA and MA programs are preponderant, but many BS and MS programs exist. There were very few PhD programs distinctly in PTC. It is beyond the scope of this article to examine the complex relationships among program offerings, curricula, and sites of institutional residence. However, my examination of program sites suggests the following

general trends. First, being situated in an English department did not seem to have any systematic influence on the curriculum offered. Second, the vast majority of bachelor's and master's programs, whether of arts or of science, were presented as pre-professional training grounds; BS and MS programs did not present themselves as especially more practical than their BA and MA counterparts. Finally, several MA programs presented themselves as both a terminal degree and as preparation for PhD work, so their goals might be seen as somewhat more complex than those of BA-only programs.

The Missions of PTC Programs

Because individual PTC program websites vary greatly in the type and amount of information they publish online, I found that using a flexible, open-ended method for adducing evidence was more useful than working up a fine-grained coding scheme. Web statements about PTC program missions are sorted into several thematic categories, as follows.

The Job-prep Mission

Not many program websites have a mission statement, but each of those examined had at least some description of general pedagogical goals. The vast majority of these mission statements refer directly, and almost exclusively, to the goal of preparing students for specific jobs or careers. It was not apparent that this goal approached the level of immersing students in an apprenticeship to a *techne* or what Donald A. Schön (1983) would call a reflective practice. Variants of this statement include those that mention training for specific jobs and careers and those reflecting the slightly different mission of helping students advance careers they already have. In some cases, too, the preparation involved is for work in academia. By far the most common statement at the BA and MA levels, turning up in nearly every program description in some form, refers simply to preparation for jobs, careers, or professional advancement in general, as illustrated in the following samples:

- Prepares students for careers as technical communicators in industry, business, government, and the non-profit sector [28][3];
- Will be prepared to enter a variety of careers in marketing, business, public relations, human resources, journalism, video production, and all levels and types of media work [39];
- Designed to teach students to write in industry, government, technology, and scientific disciplines [53];

[3] Bracketed numbers refer to the listing of schools in the Appendix.

- Prepares students to be professional information developers, technical writers, and editors [59]; and
- Prepares you for a career in Web design, organizational Web management, online communication networks, and a wide variety of Internet applications in marketing, business, and education [105].

The career advancement variant is not common, but it does show up with some frequency, particularly when the program includes nontraditional, working students, as illustrated in these two representative statements:

- Designed for working adults who are employed or who are seeking employment in the field of technical communication, one of the fastest growing sectors in today's global, high-tech economy [22]; and
- Whether you're a traditional undergraduate or a mid-life career changer, our practical program provides both the basics and a range of choices—plus advising and lab policies to make the program work best for you [94].

The Theory-into-practice Mission

Although the dominant mission reflected in these online statements is one of job preparation as an end in itself, there are those that display an interest in a slightly richer conception of their mission. Several statements make the point that they promote connections between theory and practice, albeit usually with few specifics:

- Blends theory and practice in training students for careers in industry, teaching, and/or doctoral programs [17];
- Provides students with theoretical and applied knowledge in academic and professional/technical discourse [28]; and
- Based upon rhetorical theory and practical application, the courses develop competence in writing skill, computer use, basic genres, audience awareness, and visuals and layout [35].

The Counter-culture and the Integrated Humanist Missions

Programs with public statements reflecting a mission counter to the conventional one of pre-professional training typically take one of two approaches. A minority of program descriptions take a position directly against the pre-professional mission. These statements could be called the counter-culture programs:

- See technical communication as a humanistic discipline; that is, we approach it as a set of principles, tools, and practices that enable people to communicate with each other for mutual benefit [11]; and

- Distinctly not a pre-professional program, PWR prepares students to be more critically reflective, civically responsible communicators in their daily lives and, primarily, workplace contexts [29].

To the extent that a connection to the humanities or the liberal arts is said to ground a program otherwise oriented toward job preparation, something like an integrated humanist approach is used in a few cases. These programs do not necessarily take a stand against the dominant mission of pre-professional training, but instead ground this mission explicitly in the context of a humanities or liberal arts education:

- Although based firmly in the liberal arts tradition, the major has a strong career orientation and is specifically designed to prepare students for successful careers as writers and communications specialists in a range of fields [15];
- The minor is rhetorically focused, reflecting the professional communication field's humanistic roots (as appropriate for a program housed in the Department of English), yet it also addresses the needs of today's workplace [79]; and
- With its humanities based and interdisciplinary curriculum, the program provides students a foundation in technical communication, in theories of rhetoric, composition, literature, and in applications of information technology [107].

Popular *Doxa* and the Missions of PTC Programs

I have suggested that in light of this survey of the statements found in the externally directed discourse of PTC programs, the job-prep mission predominates with relatively few variants. However, there is more to the language of these program statements than the bits of text regarding their program goals. Indeed, across nearly all the program statements, an additional layer of language highlights the difference between what is said in academic journals and what is said on the Web. These additional statements further illustrate the degree to which program websites are dominated by popular *doxa* regarding their purpose in contrast to the nuanced and varied disciplinary *doxa* grounding academic journal articles. These statements can also be grouped into a handful of thematic categories.

Needs of the Job Market

First, numerous references to the needs or demands of the job market beg the question of what ought to constitute the *techne* of professional and technical communication, the possession of which would make it possible for graduates of a program to fill such needs or meet such demands. Rather,

this language is deployed as a way of enhancing the marketability of the credentials granted by the program:

- Designed to fill a workplace need for people who know how to communicate ideas clearly [9];
- Those who can offer an employer writing skills and an in-depth understanding of a particular subject are highly in demand [37];
- Today's marketplace needs individuals who can translate technical information into easy-to-understand language. This is the niche that the technical/professional communicator fills [47]; and
- Because of the growing demand for highly skilled, professionally competent writers in business, industry, and government, the student with training in writing, speaking, editing, and communication skills has improved job opportunities [104].

Statistics Show

Closely related to statements about market needs and demands are those that refer to statistical data or general trends in a way that establishes the desirability of the credentials their programs offer. Specifically, a rhetorical device valued highly in popular discourse about the value of a particular degree program—reference to statistical data purported to demonstrate the program's value in some way—is deployed for its presumed appeal to prospective students:

- According to current statistics, skilled working professionals spend the majority of their time communicating in one form or another: giving presentations in meetings, creating reports, corresponding with clients and peers, writing emails, and designing and writing manuals and other technical materials [3];
- [Technical communication is] a field which *US News and World Report* (1998) named one of the top 20 Hot Job Tracks in the country, and what *Newsweek* listed as among the top 100 degrees in modern higher education [58]; and
- According to the US Department of Labor, Bureau of Labor Statistics… while employment of writers and editors generally is predicted to rise in line with the overall national employment average, opportunities should be best for technical writers and those with training in a specialized field [60].

The Information Economy

Another important way program statements appeal to popular *doxa* is through the use of language representing the culture of the information economy. This

use is not always a problem because one would expect to see attention to this discourse in PTC pedagogy. The point is, rather, that such language is often the primary linguistic register of program website statements, and in this way, such statements attempt to demonstrate an adherence to the public *doxa* of pre-professionalism much more prominently than to the private *doxa* of PTC's scholarly discourse. Numerous statements refer directly to the production, design, or management of information:

- Students will learn how to produce, to design, and to manage information, using both traditional and developing technologies [5];
- Hones students' abilities to shape technical, managerial and corporate information using written, oral and visual media [10];
- People who make information accessible, usable, and relevant to a variety of audiences are professional writers [30];
- Provides an understanding of communication practices, familiarity with information and communication technologies, and an awareness of the importance of collaboration in enhancing the flow of information throughout an organization [41]; and
- Offers an ongoing forum for the study and critique of theories and practices of information design [52].

Core Skills and Competitive Advantages

Finally, the specific knowledge and skills programs offer are often couched in the terms of the capitalist, bureaucratic economies out of which popular *doxa* concerning higher education arise. Themes of competition and isolable (and thereby accountable) competencies dominate.[4] Again, the point is not that such language is surprising, but that in the place of any other language, it becomes the basis for the presentation of program missions to the public. As such, this point further reflects adherence to popular *doxa* concerning what might be important or valuable in a PTC program:

- [Students] receive state-of-the-art training in the core skills demanded by the profession, including technical writing, technical editing, and graphic design [22];
- [Students] will demonstrate that they have the core competencies necessary for entry-level positions as technical communicators [43];
- Technical communication majors will have a wide variety of career paths available to them, and will be able to earn a competitive salary doing so [44];

[4] The commonly used term *core competence*, it should be noted, was first used in a seminal article on corporate management (see Prahalad & Hamel, 1990).

- Prepares students with core competencies in writing, editing, and designing of technical documents [67]; and
- Designed for students who want to learn the writing and editing skills required in today's competitive workplace [111].

Recommendations

In the foregoing account of what is said in journals and what is said on the Web, I hope to have raised some questions that program directors will consider seriously; in response to these questions, I offer both an explanation and some suggestions. First, I adopted the term *doxa* to address why Web-based program descriptions reflect a nearly monolithic rhetoric of pre-professionalism, although the scholarly discussions about program missions reflect a heterogeneous mix of conceptual frameworks, voices, and positions. Because both journal-based and Web-based discourses are forms of rhetoric, they are founded on commonly held, unspoken, and sometimes unconscious beliefs, or *doxa*. Adhering to popular *doxa* about the purpose and value of higher education, these unspoken beliefs include the idea that a college degree is a form of cultural capital useful primarily for getting a job, that this is the ideal purpose of a college degree, and that degree programs ought to aim for this ideal. Such popular doxa prevail on program websites. Yet in academic journals, the *doxa* reflects not only a broader conception of program missions but also alternatives to precisely those popular *doxa*. Genre differences alone cannot account for, in my view, this internal contradiction in the discourse.

What, then, should we do? A review of themes encountered in both journal-based and Web-based discourses suggests several tips and possible edits for websites. These four suggestions are meant to apply to the welcome page seen by the public. (For people just checking out a program, putting such nuanced information in a subdirectory is as good as burying it.)

Adopt language that reflects the scholarly discourse.
Using dense, theory-laden language may be unwise, but it would be a sign of self-respect to ground a public Web presence in a serious intellectual framework, making at least some reference—right at the start, right on the surface—to fields such as classical rhetoric, literacy studies, technology theory, and service learning. Even the inherently internal discussion of the pedagogy-practice gap can be addressed by identifying and articulating ways to prepare students to make the leap from coursework to careers.

Make it clear that pre-professional training is only part of the mission.
Phrases such as "prepares students for careers in…" should not be eliminated, but they should be reframed as one among several benefits of participating in the degree program offered. For example, writing a brief paragraph or two

(because brevity is key on websites) can help explain *how* programs prepare students for jobs and careers. In addition, many programs do have other major missions (e.g., serving the community) that can be foregrounded on websites as well.

Acknowledge or integrate humanism and humanist perspectives.
A theoretical framework also conveys that PTC is an intellectually rich, academic discipline that helps cultivate students' wielding of a complex *techne*. This emphasis can be done simply by making reference—on program websites, not just in classes—to problems of ethics and community awareness as well as through notions such as critique and theorization. I do not believe that this conception of PTC undermines its practical, real-world usefulness, but on the contrary, grounds it.

Keep it simple.
The previous suggestions are not meant to imply that program websites should be text-heavy, dull, theoretical expositions. Rather, the key is to use these suggestions to balance an online rhetoric that otherwise comes across as weighted too much in favor of a popular *doxa*, which narrows its perspective at best, and at worst, is contrary to the professional and pedagogical program values.

Closing Comment

In my role as PTC program administrator as well as unofficial department Web designer, I am well aware of the difficulty of adequately addressing and implementing the problems and suggestions I've outlined in this article. In addition to the practical challenge of creating and maintaining a good website (i.e., one that students and others will read and find useful), the rhetorical challenge is to create online discourse that captures student interest—which is informed in large part by popular *doxa* that casts higher education's role as one of job preparation—while maintaining the professional and intellectual depth I advocate. I have made this first step with my program's website, but in the process discovered it can be difficult to reframe one's program *without* constant reference to its capacity to prepare students for jobs and careers. However, I do believe it is possible to work through and address this rhetorical problem. The first step, which I hope I have provided, is to begin the discussion.

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Appendix

List of Schools Examined

1. Akron, University of
2. Alabama in Huntsville, University of
3. Appalachian State University
4. Arcadia University
5. Arizona State University at the Polytechnic Campus
6. Arkansas at Little Rock, University of
7. Auburn University
8. Austin Peay State University
9. Baylor University
10. Bentley University
11. Boise State University
12. Bowling Green State University
13. Brigham Young University
14. California Polytechnic State University (CalPoly)
15. Carnegie Mellon University
16. Cedarville University
17. Central Florida, University of
18. Christopher Newport University
19. Clarkson University
20. Clemson University
21. Colorado State University
22. Colorado at Denver, University of
23. Delaware, University of
24. Drexel University
25. East Carolina University
26. Eastern Kentucky University
27. Eastern Michigan University
28. Eastern Washington University
29. Elon University
30. Fairfield University
31. Farmingdale State College

32. Francis Marion University
33. George Mason University
34. Georgia Institute of Technology (Georgia Tech)
35. Georgia Southern University
36. Georgia State University
37. Hartford, University of
38. Hawai'i at Manoa University
39. Hilbert College
40. Houston–Downtown, University of
41. Illinois Institute of Technology
42. Illinois State University
43. Indiana University–Perdue University Indianapolis (IUPUI)
44. Iowa State University
45. James Madison University
46. Kansas State University
47. King's College
48. Kutztown University
49. Lawrence Technological University (Lawrence Tech)
50. Louisiana State University-Shreveport
51. Madonna University
52. Massachusetts Amherst, University of
53. Memphis, University of
54. Mercer University
55. Metropolitan State College of Denver
56. Metropolitan State University (Minnesota)
57. Miami University (Ohio)
58. Michigan Technology University (Michigan Tech)
59. Minnesota State University, Mankato
60. Minnesota, University of
61. Missouri State University
62. Missouri University of Science and Technology (formerly Missouri S&T)
63. Missouri Western State University
64. Montana Tech of the University of Montana
65. Morehead State University
66. Nazareth College
67. Nebraska at Omaha, University of
68. New Jersey Institute of Technology (NJIT)
69. New Mexico Institute of Mining and Technology (New Mexico Tech)
70. New Mexico State University
71. New Mexico, University of
72. New York Institute of Technology
73. North Carolina at Charlotte, University of
74. North Carolina State University at Raleigh
75. North Carolina Wilmington, University of
76. North Texas, University of
77. Northern Arizona University

78. Northern Illinois University
79. Northern Iowa, University of
80. Oklahoma State University (Stillwater and Oklahoma City)
81. Old Dominion University
82. Pittsburg State University
83. Pittsburgh, University of
84. Polytechnic University of New York
85. Portland State University
86. Purdue University
87. Radford University
88. Rensselaer Polytechnic Institute (RPI)
89. Rochester Institute of Technology
90. Rutgers University
91. Saginaw Valley State University
92. St. Edward's University
93. San Diego State University
94. San Francisco State University
95. Shepherd University
96. South Florida, University of
97. Southeastern Louisiana University
98. Southern Polytechnic State University (Southern Poly)
99. Missouri State University
100. State University of New York at Cortland (SUNY Cortland)
101. State University of New York Institute of Technology
102. Tennessee, University of
103. Tennessee Tech University
104. Texas A&M University
105. Texas at Arlington, University of
106. Texas at San Antonio, University of
107. Texas State University–San Marcos
108. Texas Tech University
109. Towson University
110. Utah State University
111. Virginia Polytechnic Institute and State University (Virginia Tech)
112. Washington State University–Pullman
113. Washington State University Vancouver
114. Washington, University of
115. Weber State University
116. West Chester University
117. West Texas A & M University
118. West Virginia University
119. Widener University
120. Wisconsin–Milwaukee, University of
121. Wisconsin–Stout, University of
122. Worcester Polytechnic Institute
123. Wright State University

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Designing Collaborative Learning Spaces

Where Material Culture Meets Mobile Writing Processes

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ABSTRACT. In May 2007, the Department of English at Utah State University (USU) redesigned its computer lab to increase mobility and collaboration during writing projects. Our study shows that despite the Professional and Technical Communication (PTC) field's efforts to promote writing as a socially active, collaborative practice, many students view computer labs as spaces for conducting isolated, single-authored work. In this article, we discuss how a combination of movable furniture and mobile technology, including wireless access and laptops, can enhance student collaboration in group-based writing assignments. The lab included both desktop and laptop seating areas, so the authors created a modified worksite analysis designed to evaluate team collaboration in this new layout. These material changes in the lab allow students to configure the space according to their needs, offering them some measure of control over three crucial elements of successful collaboration: formality, presence, and confidentiality.

KEYWORDS. collaboration, group work, lab design, materiality, mobility, space, writing

In writing studies, it is widely accepted that writing is a social, collaborative activity (Bruffee, 1984; J. Harris, 1994; Howard, 2001; Sullivan, 1994; Thralls, 1992; Winsor, 1990). Research in the area of collaboration covers topics from conflict among writers in collaborative situations (Burnett, 1993) to the benefits of conferences in planning a collaborative text (Bowen, 1993). Collaboration can be seen as "making thinking visible" (Flower, Wallace, Norris, & Burnett, 1994) when writers talk to one another about their writing, particularly about decisions made during their writing

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process. Much scholarly research related to collaborative writing discusses *how* writers collaborate (e.g., Burnett, 1991; Duin, 1986; Howard, 2001; Lunsford & Ede, 1990). This article—like many studies of collaboration in writing center sites (e.g., Bruffee, 1994; Clark & Healy, 1996; M. Harris, 1992; Lunsford, 1991)—addresses the *how* and *where* of collaboration. In particular, this study focuses on how student-writers collaborate given the material conditions of computer labs. In mobile labs, these conditions may be seen as affordances to collaboration, where in traditional labs, such conditions may act more like constraints.

Talk, Please! Creating Collaborative Computer Labs

Since computers were first introduced into the writing classroom, writing teachers have discussed the pedagogical implications of these machines and the rooms they inhabit. Instructors of writing have long realized that student interaction is affected by the physical space of a room just as much as it is influenced by the presence of a teacher or the technology. The unfortunate consequence of this realization is that the physical space is an aspect of the classroom that teachers often have little control over (see Mirtz, 2004; Nagelhout & Blalock, 2004; Palmquist, Kiefer, Hartvigsen, & Godlew, 1998). Thus, writing instructors have a rich tradition of subverting classroom design by asking students to meet outside classroom spaces, by arranging desks in circles or groups, or by extending conversations about writing online. According to Gail E. Hawisher, Paul LeBlanc, Charles Moran, and Cynthia L. Selfe (1996), the writing lab was born during a paradigm shift through which teachers of writing became more focused on process than on product. Prior to this shift, most students sat in individual desks so they could work alone, but those desks could be rearranged into small circles for group work and activities such as peer review (pp. 28–29). Hawisher and her co-authors noted that this style of classroom resembles the newspaper bullpen, where students have individual workspaces, but may confer with others when appropriate. However, this classroom design remains teacher-centered.

Since Hawisher et al.'s (1996) book came out, writing teachers have continued to be proactive in their studies of technological learning spaces. For instance, in *Sustainable Computer Environments*, Richard J. Selfe (2005) discussed how computer labs serve as community-building areas and social-networking sites for students. They constitute technologically rich spaces accessible to students to use as workspaces as well as to build friendships and collaborations that help them achieve their goals. Like much of the previous scholarship on writing labs, we posit that the physi-

cal spaces of the labs—the layout as well as the furniture and hardware—affect the relationships and work scenarios that take place within them.

This article documents some ways the physical and material space of the Department of English's computer lab at Utah State University (USU) changed over 15+ years, and how these change affected student collaboration, especially when ways of collaborating changed after the May 2007 remodel. Although many of us in the department had been teaching writing as a collaborative activity for some time, we were not supporting student collaborations outside the classroom in the technological space within the department's control, in part because that space had no pedagogical or administrative leadership. Our open-access computer lab was designed in a way that reinforced many students' perceptions that writing is an isolated, solitary event. The lab used individual desktop writing stations and discouraged talking through signage and lab consultants' policing. Most students would work hunched over their computers in uncomfortable chairs, speak to no one, and make as little noise as possible. Even lab consultants—student workers paid to interact with and help users of the lab—were themselves role models of isolation: They separated themselves through the use of headphones, mobile phones, and an isolated computer station.

Yet we knew that creating a space that reflects USU's philosophy of writing is critical, especially if users of the space are able to be mobile and transient (Harrison, Wheeler, & Whitehead, 2004, p. 23). Many computer lab users may enter the lab only a few times during the one semester of their college careers when they take a mandatory English course. These sporadic computer lab encounters can shape students' perceptions of writing for the rest of their lives. As often as we tell students that good writing is collaborative, they will likely believe it more when they see it reinforced in the thoughtful design of the workspaces we have under our control.[1] All areas of English Studies can potentially benefit from such carefully designed computer labs, particularly as teachers across the discipline incorporate more digital and multimodal assignments.[2] Although these areas have different foci and, at times, different pedagogical

[1] We understand that we speak from a privileged position when we refer to the classrooms under our control. Many English departments do not retain control of the technological spaces in which students work. We address this situation later.

[2] USU's Department of English, for example, houses multiple areas under the umbrella of undergraduate English (the primary user-population of the open lab), including American studies, British & commonwealth studies, creative writing, English education, folklore, literary studies, professional & technical writing, and medieval and early modern studies. In addition, graduate students take classes in literature, professional communication, folklore, and American studies.

goals, one commonality remains: collaboration. For example, creative writing incorporates a great deal of workshopping into their classes, and literature classes involve a great deal of discussion and peer review of their analyses. Hence, creating a lab that supports collaboration is an attempt to support each area of English Studies as well as to spread the idea across campus (via first-year composition students) that writing is social.

As technology becomes more ubiquitous and less expensive, it becomes even more critical that we make knowledgeable decisions instead of educated guesses about pedagogical needs in lab settings. For instance, in "The Inertia of Classroom Furniture," Ruth Mirtz (2004) discussed how the design of classroom furniture affected students during peer review sessions in first-year composition classes. She made three recommendations for designing classroom spaces:

- The physical environment should not determine the relationships among teachers and students or among ideas and reality;
- Relationships should remain in flux and nimble, able to reflect more than the will of the teacher or the will of a few students; and
- Teachers and students should be pushed to think past the traditional or the nontraditional, to get away from static arrangements and static learning, and to rethink classroom space as more than mental space. (p. 26)

Simply put, Mirtz urged us to take control over the classroom space by being conscious of it and how we relate to it. Moreover, as Richard Lanham (2006) suggested, these spaces are the material manifestations of how we think about the writing that they will do within them (p. 18). That is, the physical spaces we design for students to work in say a lot about what we think of the activities that take place within them. That being said, we want to call attention to the reality that most English departments do not have control over the ultimate design of most spaces in which we teach. In these instances, we do what we can to better approximate pedagogical choices through classroom design and through negotiation with those who do control those spaces.

With these ideas in mind, we conducted a small-scale research study of an open-access computer lab, designed over the 2006–2007 academic year and remodeled in May 2007. Our goal in the redesign was to create an environment intended to support and encourage collaboration. In this study, we wanted to observe how students would collaborate differently when using laptops versus desktops and when working in different seating

configurations. We analyzed students' perceptions of the lab according to three characteristics of collaboration as posited by Harrison, Wheeler, and Whitehead (2004): formality, presence, and confidentiality. We hoped to discover whether the lab spaces we designed would support these different configurations of student collaboration. Our findings, while limited in generalizability, indicate that the newly remodeled space is easier for students to use in collaborative ways such as working in collocated groups. In addition, students agreed that the material affordances of the room (Barnum, 2002, p. 109) facilitated collaboration well. In this case, these affordances include the layout of the furniture, the available equipment, the mobility of that equipment, the ambiance of the space, and the activities those items allow.

In an effort to explain the lab's history and the rationale behind the redesign that prompted this study, we first discuss the lab's history as an example of *praxis* supported by the literature on networked writing classrooms and workspace design. Next, we discuss the methodology, findings, and implications of this study with regard to the design and use of technologically enhanced instructional spaces in which collaboration is encouraged. In the end, we suggest that mobile, reconfigurable models for writing labs might better support collaboration than do the more traditional models that include static, individual workstations.

A Historic Look at Lab Designs and the USU Department of English Lab

The paradigm shift from product- to process-oriented theories of writing happily coincided with the distribution of an affordable microcomputer by Macintosh and was soon followed by a plethora of personal computing platform choices for the consumer (Hawisher, et al., 1996, p. 74). For the most part, composition instructors were enthusiastic about the inclusion of computers in the writing process and research in the area mirrored this enthusiasm, evolving into special interest groups and journals. During the introduction of computers into the writing classroom, teachers often chose the specific technologies they used in their teaching according to their individual preferences and goals. Scholarly articles at the time produced many widely differing, yet pedagogically based, arguments for particular software or technologies (Hawisher et al., 1996, p. 110). By 1989, these scholarly discussions began to examine the economics of computer use; specifically, these discussions question the investments in the time and money needed for teachers to learn each technology and to teach these technologies to students, investments that often interfered with the

actual pedagogical goals of a writing course (p. 200). According to Hawisher et al. (1996), computers were often introduced into classrooms without first considering the pedagogical implications of the technology or the design of the space, providing teachers with classrooms that were more of a hindrance than an aid (p. 202). However, one noticeable way teachers began to gain pedagogical control over these spaces could be seen in shifting furniture layouts. What follows is a discussion of the three primary layouts—rows, pods, and circles—used and modified since computers were introduced to writing classrooms.

Networked Writing in Rows, Pods, and Circles

Carolyn Handa (1993) discussed two layouts—rows and pods—as demonstrating elements of both teacher-centered ideologies and student-centered ideologies. Rows exhibit slightly more teacher-centered elements, involving a fixed teacher station (usually at the front of the room) and computers lined up in rows, whether facing the teacher station or perpendicular to it. This type of layout favors hierarchical teaching styles (p. 106) and reinforces the "sage on the stage" style of teaching in which professors stand at a lectern and transmit knowledge of a topic to students. Gordon Thomas (1993) referred to this teacher-centered design as a lab design—a statement that carries with it the implication of medical experimentation and that invokes the visual for writing scholars of rows of computers—instead of a classroom design. Meredith Zoetewey (2004) indicated that the name of a room serves as a metaphor for the room's function (i.e., lab versus classroom). Even something as seemingly benign as the arrangement of the room or its name can affect student perceptions of the activities that take place in the space.

The pod layout demonstrates slightly more student-centered elements by locating the instructor station among the students' stations, serving to dissipate some of the hierarchy between teacher and student. The student computers are arranged in pods (desks arranged in multiple, small inward-facing circles) around the room, similar to the bullpen style discussed by Boiarsky (1990) and Hawisher and Pemberton (1993). Handa (1993) argued that pods encourage student interaction and a teacher-as-writer atmosphere. The logic goes something like this: Because students face one another, a greater chance exists that they will confer with one another throughout the class time, and because teachers do not have a physically separated station, the pod design places them quite literally at the same level as students. Of course, the pod layout is not a utopian ideal. The computers, unless they are mounted low enough in the pods for users to see over, can create line-of-sight problems during large-group

discussions (Handa, 1993). Depending on the configuration, teachers can have students move their chairs into the center of the room for discussion, the unintended result of which would be to render the computers useless during discussion.

In addition to rows and pods, the circle is another common networked-classroom layout. The circle layout arranges computers around the perimeter of the room facing the outside walls. This layout leaves the center of the room open for a large conference table or space for class discussion. The circle layout incorporates elements of both teacher-centered pedagogies and student-centered pedagogies: The teacher may still command students' attention from an instructor's station, but class discussion is also easily facilitated by bringing students together in the center of the room. However, when working on the computers, students face a wall as they write and might easily interact only with the one or two people beside them. The net effect of turning away from the rest of the class to write is that students essentially cut themselves off from the rest of the class (Palmquist, Kiefer, Hartvigsen, & Godlew, 1998).

USU Department of English Lab Designs

The Department of English at USU has independently supported at least one computer lab since the early 1990s, when it was established through state funding and student fees. Since then, faculty members who teach in the lab have held periodic discussions to reevaluate how the material affordances of the lab affect the teaching and learning taking place within it. The first few layouts were, like many early university writing labs, designed to protect the computers. The Department of English computer lab first used a layout that included rows with computers facing the front of the room. This layout did not last long, however. Facilitators became concerned that students' backpacks would snag wires on the back of the computers (which were open to the front of the room) and pull the computers off the desks. They moved the computers into a U-shape around the outside of the room (a circle layout), so that the wires were more contained. These decisions were based mainly on a need to secure and protect the technology, not on student needs or the pedagogical goals of the instructors who taught in the lab. Later, the lab was moved from the top floor of the department's building into the basement and divided into two rooms, a networked classroom and an open-access lab. Because both rooms were smaller than the original space, the computer workstations were arranged in peninsulas, a variation that combined rows and pods. The desks were arranged in rows with a pod at the end of each row. The pods jutted out into the room, creating little islands of students. Although collaboration was possible in this peninsular layout, it was often impossible for teachers to work their way

to students in secluded parts of the room. By fall 2004, when two of us were hired, these space and layout problems manifested in gymnastic maneuvers over book bags and around occupied chairs to reach students. The problems also manifested in student evaluations, which noted that the teacher ignored certain groups of students—an accurate perception regardless that it was the layout that prevented the teacher from reaching them, not the teacher's willful ignorance of them. There were simply too many computers in either room with too little space, despite small class sizes.

During the 2004–2005 winter break, the furniture in the classroom was rearranged once again into a circular arrangement. Still in close quarters, the circle was better than tripping over students or, as often happened, invading their personal space to help them or the person next to them. The open lab used a circle layout with one large peninsula in the middle, arranged around a long-defunct partition closet. The lab consultants would sit at this peninsula, positioning themselves in the center of the lab. The classroom was not the focus of our lab redesign nor is it the focus of this usability study. We mention it here because its small size, limited software,[3] and limited availability outside scheduled class times prompted two of us to write a university grant (discussed later) to redesign the open lab into a collaborative, mobile working environment. This redesign would provide students with better access to the technologies they needed to complete writing assignments and an environment that would better support the collaborative projects. For example, students from the undergraduate program in professional and technical writing are assessed, in part, on their ability to demonstrate successful collaboration across several projects in their professional portfolios (see Cargile Cook, 2002).

The open lab is significantly larger than the classroom. At the start of 2006, it contained 28 six-year-old desktop computers with small CRT monitors—machines woefully inadequate to handle software upgrades to match the software teachers were using in the accompanying classroom space (e.g., Adobe CREATIVE SUITE). Although professional writing students were at the high-end of the technological spectrum among student users, both the classroom and the open lab had to attend to *all* students who enrolled in computer-fee-bearing courses, including approximately 75 sections of first-year composition, nine sections of professional and technical writing, two sections of grammar, and the occasional literature course, and a few creative writing and English as a Second Language courses. Between the

[3] Prior to 2005, only half the machines in the classroom had the software required for classes that met in it, and the open lab had incompatibly old versions of the same or, in some cases, similar software on the computers.

classroom and the open lab, the departmental computer suite serves over 1,900 students a semester.

During spring 2006, the department secured 25 two-year-old computers with flat-panel monitors and 50 ergonomic chairs from another lab on campus.[4] We moved the four-year-old machines, which also had flat-panel monitors, from the classroom to the open lab (replacing the six-year-old machines, which went to grad students and to surplus) and used the newer machines in the classroom. The flat-panel monitors took up less desk space than the CRTs, which helped us better accommodate the circle-and-peninsula arrangement in the open lab while retaining the same number of machines to accommodate the larger classes that occasionally met there (see Figure 1). Although this technology upgrade proved effective enough for basic writing tasks, it did not promote the best practices of collaboration or writing pedagogy in a more general sense. As a result of the various constraints,[5] the lab was not designed with teachers' or students' best practices in mind. In fact, students primarily used the lab to print the writing they drafted in other labs across campus. (A $30 lab fee covered printing.)

The Suite Lab

During summer 2006, department and college administrators asked two of us to write an internal grant proposal that would secure monies to support teaching in the department. We wrote the grant proposal with a complete redesign of the open-access lab in mind, hoping that such a redesign would prompt more collaboration among students and faculty across the department. We hoped that we would be able to argue for more money to redesign the teaching space as well. When we received $83,500 to redesign the Suite Lab,[6] we focused our attention on creating a mobile, reconfigurable space—

[4] Readers may notice that we are glossing over how we acquired more equipment, furniture, and better software between fall 2004 and the beginning of the remodel in fall 2006. This influx was due, in large part, to the changing technological ecology of the department, as evidenced by the hiring of two of the authors, both computers-and-writing scholars. For more discussion about these changes and how we were able to bring them about in a department that had been rather technologically static for many years, please see Moeller, Cargile Cook, and Ball (2009) in *Technological Ecologies and Sustainability*.

[5] Various constraints that affect any person tasked to maintain or upgrade a lab randomly include square footage, facilities issues (e.g., locations of doors, windows, electrical outlets, partition closets, and network ports), class scheduling, enrollment, and of course, financial considerations, which necessitated the use of nonergonomic tables and chairs purchased through university surplus until the open lab was remodeled in 2007.

[6] The original name for the lab was *The Learning Suite* because our plan was to include a suite of rooms—both large and small—where students could work. The small rooms would serve as studio spaces where students could work on extended projects throughout a semester. We quickly realized that to get the internal grant, we had to make do with the space we had in the open lab in which the studio space became a single workstation (with the MacPro)

Figure 1. Before image of the open computer lab. Notice the industrial aesthetic. The proximity and orientation of computers (not to mention the towers) encouraged users to construct personal boundaries around their workspaces.

aspects lacking in prior layouts of the room. We also secured money for a PhD student—our third author—to serve as the assistant director of the lab, tasked with many responsibilities, primarily training the lab consultants, assessing the redesign outcomes, and seeking additional funding opportunities.

The lab redesign is mobile insofar as it facilitates impromptu rearrangements of laptop computers and furniture for collaborative group work and easier group discussions where students can face one another and customize the workspaces according to needs. When writing scholars talk about the design of computer writing labs, lab mobility is often discussed, but generally and mainly in terms of teachers' ability to physically reach students or students' ability to "get up and confer with others easily" (Hawisher & Pemberton, 1993, p. 47). In our idealized mobile environment, we wanted students to be able to work in various places and ways and to position workstations in multiple ways to maintain proximity to their collaborators as well as to

until we could get more money and more space. The Suite name became somewhat metonymic, signifying the global plan, and we liked the nod to Adobe's CREATIVE SUITE, because it was also our intention that the lab would provide a space for teachers to infuse more multimedia into their curricula through access to the software. We also liked the cool factor in the connotation that the lab was a *sweet* place to work.

ensure personal comfort. This mobility would also allow for varying pedagogical needs of numerous instructors. We chose a combination of 15 laptop computers and 11 desktop computers to facilitate face-to-face collaborations as well as individual work and distributed collaborations. Our lab redesign, overall, is based on the theory that giving students the ability to create and adapt their technological spaces will help them work collaboratively in ways that meet their needs, including when they are meeting in the lab outside class time. In terms of pedagogy, instructors can reinvent the layout of the room according to their teaching styles and class needs. Considering the myriad constituencies and pedagogies in English Studies, such flexibility in technology and learning is crucial. For example, instructors who favor class discussions can move furniture into a central conference area. Instructors who want students to work on a project individually can offer them separate work areas through different furniture configurations. In short, by combining mobile laptop technologies, desktop computer pods, and mobile furniture, we hoped to facilitate greater collaboration among writing students as well as allow for multiple pedagogical goals.

The redesign of the Suite Lab included the following design considerations:

- 26 brand new computers: 15 wireless laptops (13.3" MacBooks), 10 midrange desktops (24" iMacs), and 1 high-end desktop (MacPro with 23" monitor)[7];
- mobile chair and couch combinations with small side tables for laptop use (see Figures 2 & 3);
- two pods of desktops with ergonomic task chairs (see Figure 4);
- two individual, stand-up stations, each with a desktop, positioned by the door for quick print-and-go functionality; and
- one open-backed cubicle for high-end multimedia work.

Because the print-and-go stations and the multimedia workstations were not designed with collaborative use as their primary function, we will focus the rest of this article on the laptop and pod desktop areas.

[7] We discussed the platform decision with various lab stakeholders including teachers, professional writing students, systems administrators, and computer sales representatives for *many* months. We chose Macs for the following reasons: (a) They would operate on either Windows or Mac operating systems, accommodating most of our stakeholders' preferences at the time; (b) our college systems administrator had recently hired a Mac support person, meaning that knowledgeable technical personnel were already in place; (c) Macs did not required any additional hardware (i.e., servers or network cabling) because they could run on the Windows servers the college had and could use the wireless networks already in place; and (d) Apple had the best bid proposal and most helpful and responsive sales representative.

Figure 2. One of the study-participant groups working in a mobile seating area with laptops.

Using wireless laptops reduced the number of stationary desktops and desks we needed to facilitate a more flexible and collaborative workspace environment. Students would be free to position the laptops and armless chairs in any way they chose, allowing them to see their group members better and for their group members to see each others' work better. In addition, we attempted to design a comfortable space where students would want to work, and as more students began to work in the space, we hoped more collabora-

Figure 3. Desktop group (foreground) and second laptop group (background) during the usability-collaboration study.

tion—both *ad hoc* and planned—would result. In the two years since the lab was redesigned, we have seen some positive results. Instructors have asked to be reassigned to the Suite Lab to teach instead of the computer classroom. Additionally, many students have begun to check out the laptops for use in their classes next door.

We have begun to think of the redesign as a success, at least in terms of the feedback we received from users. However, this article is our first step at formally studying the mobile aspects of the lab, which turned out to be quite a surprise for students. They did not expect to be allowed to reconfigure furniture or to talk and work together in the lab. The next section outlines the collaborative-usability study we performed by observing students working on a group project in the lab to determine the extent to which the material features of the lab afforded or constrained their collaborative efforts. Ultimately, our research points to the use of laptops as particularly conducive to collaborative activities, especially of their mobility.

Methods Used for Studying Collaboration between Laptop and Desktop Users

At the time of this writing, students have been using the Suite Lab for four semesters. To determine how well the lab space fulfills its collaborative mission, we conducted a usability study of the space during the 2007–2008 academic year, in effect, gauging students' ability to use the space collaboratively. In this study, we observed three groups of students—two working with laptop computers and one with desktops. The participants of the study worked on a collaborative document design assignment typical for introductory professional and technical writing majors. Participants were selected from an undergraduate introductory technical communication course taught by one of us. Participants volunteered to be a part of the study, and no penalty was given for those who chose not to participate. Ten students participated in the study: three males and seven females.[8] On the day of the study, students were randomly placed in groups as they entered the lab—the first student was in the first group, the second was in the second group, and so on, until the three groups were formed. We formed the groups in this way so students would not form groups with students they were familiar with, which might in turn affect the way they collaborate. (For example, many students in first-year composition do not know their classmates well. We hoped to mimic that environment in this way.) Our study included a pretest questionnaire, a task scenario, and a posttest questionnaire (included in the Appendix). We collected data for analysis by videotaping the test and analyzing the posttest questionnaires.

[8] This ratio reflects the typical enrollment by gender in our professional writing courses.

The pretest questionnaires collected demographic data as well as data about participants' computer experience. Participant groups contained both traditional and nontraditional students, an inclusion we felt important because it included two substantial student groups as representative of USU's student body. The task-scenario consisted of a typical class assignment for third-year professional and technical writing classes at USU. Students were allowed 50 minutes (equivalent to one MWF class period) to complete it. The assignment asked students to work in groups of three or four to collaborate on an effective document design for a fictional tourist company's billboard. The students were required to research images and use Adobe INDESIGN and PHOTOSHOP to create their designs. Immediately following the test, students were given a posttest questionnaire in which they reported on their experiences during the task. The questionnaire asked students how they felt about the experience in general, how they used the space, and how they would improve the space to make it more usable for group work. To measure the collaborative usability of the space, we analyzed students' use of the space on videotape in conjunction with responses from the posttest questionnaire.

Our analysis largely focused on how participants physically used the space during the test. We wanted to see them move furniture around, share documents and computers, and use the space for collaborating comfortably and productively. We focused our analysis of the videotaped data on what participants mentioned in the posttest questionnaires. For example, some participants noted that they had to crane their necks to share a desktop computer. Hence, we reviewed the data to see how many students in a group used computers, how close students sat to one another, and who appeared to do most of the work on the computer.

Findings: Usability of the Space to Support Collaboration

Our major findings tend to support our theory that giving students the ability to create and adapt their technological spaces will help them work in collaborative ways in a typical classroom writing scenario. The participants who used the laptop computers reported successful collaboration. Despite their positive reports, we were disappointed that none of the participants who used the laptop computers moved any of the furniture to accommodate their group work. Participants working at the desktop computers moved their chairs around to all work on one computer, but none of the groups used a course management system or a network drive to share documents. Each group worked on a single document either together or they passed it around by emailing it to one another. Later, we discuss participants' responses to how the physical layout of

the lab and the technology supported their work. Then, we discuss the mobility constraints of the space and participant reactions to those constraints. Finally, we discuss how participants perceived the atmosphere of the room and their ability to collaborate in a public lab space.

Students' Responses to the Redesign

The primary issues uncovered in this usability test involved inefficient furniture configuration and insufficient desk space. Although 7 of the 10 participants indicated that the workspace was adequate, the same number said that a change in physical layout of the furniture would help improve collaboration in the space. Our observations revealed that users never attempted to change the configuration of seating during the testing and that several participants felt a little uncomfortable collaborating in the space. We interpreted this discomfort as students' acceptance of computer lab ideologies presented by labs that discourage talking, working together, moving furniture, or making any changes to the atmosphere of the space.

Immediately after opening the redesigned lab, we realized the extent to which students had adopted this computer lab ideology that conflicted with the Suite Lab. Most obviously, we saw evidence of this ideology as students would enter the lab, look around with confused looks, only to leave a moment later. When we were able to catch them before they left, they would most commonly say that they were not sure that the Suite Lab was a computer lab—despite the 11 desktop computers scattered around the room—because it did not look or feel like a lab. We have tried to remedy this situation with more obvious placement of signs, particularly signs indicating how to check out laptops. Additionally, we trained lab consultants to approach everyone who enters the room, according to best practices in consumer relations, if not security protocol.

Other student concerns focused on the proximity of desktop computers to one another; students wanted more personal space on the tables for their books and papers. We largely resolved this issue by placing two computers across from each other on each table instead of placing four computers on each table. We purchased additional desks to place around the perimeter of the room, creating more spaces for students to work. With more desk space, students can sit together at desktop computers to work.

We were surprised to find that many students resisted the lab redesign altogether. These students bypassed talking to us and instead wrote letters to the university president, dean, and department head (all of whom referred the students back to us with their support). They also initiated student newspaper investigations into our use of student monies to remodel the space. We were stunned by this response, having surveyed student lab

users before the remodel for their feedback, meeting with several of these students to alleviate their concerns. The most common concern was that "students do not want expensive, comfortable places to work. They just want computers to work on and lower tuition and fees" (author Amanda Bemer's recollection of personal correspondence). Because the monies for the remodel came from internal research funds, we were able to alleviate their concerns regarding increased tuition and fees; however, we were reminded that students will keep us accountable for our designs of the spaces they use.

Study Participants' Responses to Collaborating in the Redesigned Space

In our test, half the laptop users indicated that the laptops with wireless connections were helpful for collaboration. Other laptop users felt that the laptops were, at times, a distraction for collaboration and even promoted individual work instead. Laptop users commented, "I think all three of us were doing our own thing because we had laptops"; "We all sort of did our own thing, so it didn't really contribute to the team effort"; and "Sometimes the laptops were a distraction." Laptop users did not synchronously share documents; they divided up the work into individual chunks they could share over email. Although collaborating, they resisted referring to their work as collaborative because they were not looking over each other's shoulders. These comments might be more indicative of how students think about collaboration than how they actually collaborate. Despite their lack of enthusiasm toward the laptops themselves, all participants using laptops either "strongly agreed" or "agreed" that the lab space was "a good space for collaboration." One student found the laptops particularly helpful, noting that "we were all able to see each other and share our work without having to move around." Another stated that "just using the laptops and sitting on the chairs made it easy to discuss." Yet another mentioned that there was "lots of space" and it was "comfy" in the lab. One noted that the mobility of the computers allowed them to "sit closely and easily see one computer." Overall, the laptop groups completed more of the project than the desktop group. One individual from the desktop group asked for more time to complete their project. Although the laptop groups might have achieved more efficient collaboration, we hesitate to say their collaboration was more effective because the quality of work completed by all three groups was comparable at the end of the test. It is interesting to note, however, that the desktop group felt that their project was less finished than the other groups did.

Despite concerns about the physical configuration of the space, all participants indicated that the Suite Lab was a pleasant place to collaborate. Some

users were concerned that their talking might disturb others using the space. When asked whether they were likely bring a group of students to the lab to collaborate on a project," one participant responded, "I worry that I am disturbing other students by talking." This response could indicate several different perceptions about working in a computer lab: (a) this participant has internalized the computer lab ideology that computer labs are designed for independent, solitary work; (b) the Suite Lab does not afford its users the perception that conversations are productive; or (c) this participant is simply concerned about bothering those hard at work around her. Interestingly, none of the participants used the networked capabilities of the computers to work on the project silently. Participants might have shared a Google Document, worked on a document in the course management system (Blackboard Vista), or used a network drive or external hard drive to share the document. This choice is an interesting issue of perception that we discuss later. No other issues were voiced concerning lighting, temperature, color, or other environmental elements. Overall, participants felt the Suite Lab was a pleasant place to work.

Finally, we worried that the large size of the desktop monitors (24") might make it difficult for desktop users using multiple desktop stations to collaborate with one another face-to-face. But the test results revealed quite the opposite problem. Several users indicated that collaboration was physically difficult for group members to crowd around a single desktop at the same time. User comments included, "We were very crammed around one computer" and "You can't see each others' computer screen very easily and have to move to see what the others are working on." Users did not have issue with seeing or hearing one another, not because they could see over the monitors, but because they did not need to see over the monitors at all. The entire group of four participants used one computer.

We discovered that participants determined the success of their collaborative experiences along a scale similar to that proposed by Harrison, Wheeler, and Whitehead (2004) in their book, *The Distributed Workplace: Sustainable Work Environments*. In that book, the authors discussed workplace configurations and how those spaces facilitate certain types of activities while simultaneously constraining others. Specifically, the participants in our study required a balance of three key factors that determined the success of their collaboration: formality, presence, and confidentiality. Next, we discuss our findings in more detail using these three points of collaboration.

Formality

Formality describes the relationships and sets of established behaviors that students (or coworkers) share with one another. Greater formality is

often employed in a workspace when group or team members see one another as acquaintances or coworkers rather than good friends, that is, when their relationship is less than intimate (Harrison, Wheeler, & Whitehead, 2004, p. 68). In a sense, formality refers to the unwritten rules of behavior that guide people's actions in a group or workplace environment. A good example of formality is evidenced when people establish boundaries or personal spaces for themselves. Formal salutations and names establish distance and formality while first names or nicknames and touching lessen formality significantly. Participants were pleased with the level of formality afforded by the spaces designed for collaborating via laptop computers. When working synchronously or face-to-face, the laptops and couch-seating area allowed participants to control their boundaries, therefore offering them control over the level of formality within their groups to a similar degree. This control is possible because each student had an individual screen and could sit as far apart (or close together, as one participant noted) as they chose. Participants did not experience this level of control over formality and space while working at the pod-desktop space, however.

One obvious difference in boundaries between the desktop and laptop groups concerns personal space or touching. In the laptop groups, students seemed very careful not to touch one another during the task. In the desktop group, participants were not as careful. During the task, one student leaned forward to gesture toward the screen and the student in front of him visibly recoiled, indicating an invasion of personal space or unexpected touching. Besides physical reactions, we noticed participants' dislike of the lack of formality in the desktop space through their use of negative language about its boundaries. One participant noted that "we were very crammed around one computer otherwise there would be no way for all of us to see what we were creating." The limited desktop space combined with the fairly tall and obtrusive desktop computers forced participants to invade what they felt to be one another's boundaries to collaborate around one computer. However, further review of the video data shows that desktop group participants were not sitting any closer to one another than the laptop participants were. Because the desktop group could not choose how closely they sat from each other, they felt as if they were sitting closer than they actually were, demonstrating an interesting twist of perception. The desktop group decided to drop their level of formality and share the space around one computer even though four desktop computers were arranged around one pod, and participants could have shared their work electronically over email, network drives, or other means. Participants discussed the desktop computer as an individualized workspace. After working in the desktop group, one student explained that while returning to the lab

for collaborative work wasn't likely. However, the students liked the space for "individual work," noting that "the computers were arranged in a way that was more conducive to individual work."

In contrast, because the laptop groups perceived that they had more control over physical boundaries, participants maintained a higher level of formality over the space and work. Participants in the laptop groups tended to use one laptop per participant and did not have to crowd one another for screen viewing, an act that allowed them to maintain spatial boundaries. In fact, as we mentioned previously, one user noted the ability to sit closely with her group as a positive attribute, in direct contrast to the feelings of boundaries associated with the desktop-pod group. Also, laptops allowed for documents to be more technologically mobile. Because each participant was working on a different computer at the same time, they chose to share their work digitally by emailing documents back and forth. The act of email, because it creates a tangible record of an exchange of information, is more formal than sharing documents in other ways such as with a flash drive. During our study, participants who collaborated via laptop computers contributed more often to the creation and revision of the documents on which they were working; they searched for images and made adaptations to design instead of merely suggesting changes, as most members of the desktop group did. Although suggesting changes is certainly a valid part of collaborative activity, students in the desktop group stated that they had trouble physically seeing one another, though they remedied this somewhat by "cramming" themselves around one computer. Hence, they felt that others were not participating as much because they could not physically see this participation. In the laptop groups, the formal record of communication (email) created a tangible method with which to define presence.

Presence

Presence refers to group members' recognition that other group members are actively contributing to the work at hand (Harrison, Wheeler, & Whitehead, 2004, p. 68). Because the participants in our study were collocated, they defined presence by actual, physical contributions made to the document. Because of this dynamic, the desktop group was hesitant to recognize vocal contributions made while everyone was looking at the same computer as actual contributions. So despite their obvious physical presence to one another, they measured presence through tangible, material input to the document. The laptop groups did not have this problem because they divided up the work, taking advantage of their collocation,

and they knew every group member was going to contribute to the actual document. Additionally, because the desktop group was working in such close proximity to one another, when one participant removed herself from the group to work on the document individually for a short time, she was seen as removing herself from the group's presence.

In comparison, laptop participants in our study reported being able to easily see and converse within their group. This presence was demonstrable by tangible contributions that participants using laptops made to the shared document (e.g., searching for and finding image files online to use in a document). This participation was easily observable on the video of the task. Participants using the desktop computers were forced to physically remove themselves from the group and walk to a different computer to effect the same contributions. Participants discussed such a removal as a barrier to successful collaboration, stating that "[we couldn't] see each other's computer screens very easily and [had] to move to see what the others [were] working on." Because the participants who worked on the desktops elected to have one primary contributor with several supporting collaborators, defined by who controlled input at the computer, some group members felt that the other group members contributed less to the overall results of the document, though they added input vocally. This vocal input is somewhat intangible in comparison to the physical input of the person sitting at the computer. This lack of tangibility might be the reason some students felt that those who were not sitting at the computer physically were participating less, although they were certainly active participants in the group through their vocal input. As writing teachers, we valued this type of input and saw it as demonstrating presence, although the participants did not.

Confidentiality

Confidentiality refers to the sense that one can keep one's work private and has a choice as to when to reveal it (Harrison, Wheeler, & Whitehead, 2004, p. 68). Participants using the laptop computers had more control over when to reveal their work to their group members. Instead of sharing their entire search process for an appropriate image, for example, they only shared the results of their search with the rest of the group. We did not observe this same level of control among the desktop users, who crowded around one another and were constantly aware of the work the primary contributor was doing. For example, members of the desktop group all went through each image that came up in a search, an act that may explain why they, according to their self-assessment, did not complete

as much of the assignment as the laptop groups. In the desktop group, because of the sheer number of eyes looking at each image, students were more likely to comment on particular images they found amusing or interesting, whether relevant or not (mostly not); this commenting process, although it appeared enjoyable, caused the desktop group to take more time to complete the task than the laptop groups. Of course, the laptop groups also participated in this playful activity, but less so, perhaps because they each had their own images to look at.

Confidentiality is particularly important to the writing process because students often feel insecure about revealing work they do not feel is perfect or finished, particularly when they find themselves in a fairly unfamiliar space at the beginning of a writing class and do not know other students enough to feel comfortable sharing unfinished work. This insecurity can be seen in the way that, as observed in the video, no one in the desktop group seemed overly eager to take on the role of group leader (e.g., the person in charge of creating the document itself on the computer). The desktop group took several more minutes to get started than the laptop groups did. This delay and lack of desire may be due to insecurities about others watching group members work as the active person in charge of input on the computer.

Findings Summary

We found that a level of formality, presence, and confidentiality was afforded by the laptop computers. Students seemed to appreciate this affordance because it helped them feel more comfortable with their collaboration. However, the inclusion of desktop computers is still necessary in a computer lab because students often work individually and collaborate virtually. To be successful collaborators, participants needed to control several aspects of their group work, specifically the formality or the level of familiarity, or rituals shared among themselves and their collaborators. They needed to physically contribute to the document to be seen by group members as contributing productively to the group effort. They also needed to maintain a certain amount of confidentiality over their work. These areas of control are all elements of successful collaborative workplaces that can be supported in key ways by the design of workspaces. Students desire familiarity, confidentiality, and presence, and they will take the affordances of a technology (such as a laptop) and shape it into the closest approximation of a boundary. By designing mobile, collaborative learning spaces, we can better accommodate students' individual and group writing processes in order to make those processes more visible and learnable for students in ways that support the disciplinary philoso-

phies that writing is not a solitary endeavor. Using laptops to help groups establish appropriate levels of formality and presence might help dissolve the perception of a group leader (i.e., the one sitting at the computer) who does the majority of the group's physical work. Giving students the authority to decide when to share their writing with their group or the class might give them a greater sense of ownership tied to their work. It makes sense that student writers would want to have control over their work by being able to perform it themselves and decide who sees it and when. Our study suggests that the layout and technologies of any workspace will determine, to a certain degree, how students will or will not collaborate successfully within it.

Although we found that the laptop computers and the comfortable, couch-like environment better facilitate collaborative activities, the inclusion of desktops in a computer lab is still important. Because collaboration does not always occur when students are physically together, the desktops allow an individualized space for students to write or collaborate digitally. Computer lab users are notably transient and unpredictable; not everyone in the lab at a given time is collaborating on a project. Some users may be researching topics for papers, other students might be writing drafts, and still others might be using email or other communication tools. Designing a space that can be reconfigured for individual and collaborative work seems ideal.

Finally, as an important aside in our study, some participants noted and appreciated the larger size of desktop monitors during collaboration. A large monitor is useful in many situations—when several people need to view a screen at once, when users need to view the screen from a distance, when accommodating low-vision users, or when users are working in multimedia programs that require a large amount of screen real estate. Although our study showed the laptop computers to be slightly more usable for collaborative work, the desktop computers (especially with large monitors) still have a place in computer labs and classrooms.

Although the Suite Lab is designed with mobility in mind, participants did not use the mobile aspects of most furniture. Based on comments from post-test surveys, users were unaware they were allowed to reconfigure furniture in the room to aid their group collaboration. For example, one student noted plainly that "if one chair was facing the others instead of being in a straight line," group work would have been easier. Seven out of the 10 participants expressed a desire to see specific furniture reconfigurations, but based on our observations and video footage, they made no efforts to enact these changes. After discussing this observation with the participants, we discovered students were unaware that they were allowed to move the furniture to suit their needs. As

we mentioned previously, the ideology of what constitutes a computer lab is at play here: (a) computer labs are for solitary writing; (b) you do not move the furniture in computer labs; and (c) the furniture is heavy and unmovable. We are attempting to solve these myths by making furniture easier to move by purchasing casters with wheels for the couch-like chairs. Also, we are hoping the inclusion of signs suggesting different configurations as well as periodically repositioning furniture in the room may dispel these perceptions. In addition, in the months after the study, as students used the space more, we have observed them moving furniture more often. Increased familiarity with the space has led to a sense of ownership of the space; familiarity has somewhat solved this problem and allowed students to embrace the mobility of the space.

Conclusion

This study revealed that the Suite Lab remodel was a success with respect to some material affordances of mobility in relation to collaboration—that is, laptops were more successful than desktops in collaborative group work. We are still battling some perceptions of what a computer lab is: Participants articulated the ideology that computer labs are institutional, solitary writing spaces, and this perception is difficult to dispel, no matter how dramatic our remodel may have been. This perception was demonstrated by the study participants' perceived lack of ownership of the space and fear that they might disturb the work of others by collaborating in the space. In the Suite Lab, we are working to dispel this myth. Since the study, users who come to the lab frequently, by two authors' observations, are much more likely to collaborate and speak freely in the Suite Lab. First-time users, who can sometimes be identified by their difficulty logging on to the lab computers, are much more likely to visit the lab alone. Future lab surveys may help us determine who is using the lab and for what purpose, particularly if they are using the lab collaboratively and without fear of disturbing others. This research will help us gauge how perceptions are changing and whether the perception shift is due to familiarity.

It is easy for us, as writing instructors, to teach students that writing is a collaborative process—we incorporate group work and peer review into our classes. It becomes much more difficult for us to show them that the writing process is collaborative by supporting it with specific technologies (i.e., laptop computers) and spaces (i.e., the Suite Lab). This material support requires money and control over a lab to design and outfit. The Suite Lab is an example of an attempt to show students that the Department of English at USU views writing as a collaborative process. Our study indicates students may have preconceived notions of computer labs that conflict directly with the idea that writing is a collaborative process. For the writing process, students like formality, presence,

and confidentiality in their workplaces. These three characteristics require that students have a level of control over their workspaces—they need to control their physical boundaries to be comfortable with their situation (formality); they need to be able to see other group members easily and see their active contributions (presence); and they need to be able to control when others see their work (confidentiality). Of course, in the open-access lab environment elements of informality come into play as well. During our study, students often bonded by sharing funny pictures they found while searching the Internet for project-specific images. The combination of the mobility of the laptops with the collocation of the research participants aided this informal sharing (students just moved their screen so others could see it); and, of course, students with desktops could also share these elements, although they came across images all at once as a group. These more playful elements of collaboration, according to feedback from participants, seem necessary for a collaborative experience that students will want to experience again. The Suite Lab design allows for these three characteristics with the use of laptops and movable furniture. The users of the lab, however, have had to become comfortable with the lab and learn the space to feel comfortable employing the movable aspects that make it suitable for collaboration. They've also had to decide that the lab is not necessarily a quiet space that denies speaking at levels required for conversation.

Pedagogically, we hope that the mobility of our lab environment helps to support numerous members of our department—each of whom teaches courses with somewhat different goals. The inclusion of desktops and laptops has allowed some of this freedom in a way we did not fully expect. This study has provided quantitative and qualitative data that shows students can use laptops well for collaboration, but they also have a strong appreciation for desktop computers. Understanding how students desire formality, presence, and confidentiality in their writing environments can help us to further incorporate these aspects into spaces—perhaps through creating a space with different spaces within it, as we have done with the Suite Lab's separate desktop and laptop areas.

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Appendix

Posttest Questionnaire

Question	Answer
1. How many people were in your group?	Number of members in your group _____
2. Did your group collaborate around the computers or the couches?	Computers_____ Couches _____ This space was a good space for collaboration (Circle one): 1. Strongly Agree 2. Agree 3. No opinion 4. Disagree 5. Strongly Disagree Why? _____
3. Was there anyone in your group who had a laptop with them?	Yes_____ No_____ If Yes, How many of your group members had laptops?_____ How do you feel this helped or detracted from your group collaboration? _____
4. Where did your group sit?	Couches _____ Computers_____ Other_____
5. Was there someone in your group who led the collaboration?	Yes_____ No_____ If yes, where did they sit? _____
6. Do you feel there was enough space in the room for everyone in your group to collaborate?	Yes_____ No_____
7. Would you likely bring a group of students again to the lab to collaborate on a project?	Yes_____ No_____ Why? _____
8. Would a change in the setup of the room enhance collaboration for your group?	Yes _____ No_____ If yes, what would you change? _____
9. Would a change in the setup of the room detract from the collaboration for your group?	Yes_____ No_____ If yes, what change? _____
10. Was the English lab a pleasant place to collaborate? How was the lighting in the room? How comfortable was the environment in the lab?	Yes_____ No_____ Would you add or remove anything to make the room a more pleasant place to collaborate? _____

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Programs in Context

Past, Present, and Future

Karen Rossi Schnakenberg
Carnegie Mellon University

This keynote was presented at the 2008 annual meeting on October 2, 2008, at the University of Minnesota in Minneapolis, Minnesota. The meeting's theme for that year was "Programs in Context: Past, Present, and Future."

In keeping with the conference theme for this 35th anniversary meeting, my presentation today focuses on key issues that have had and continue to have relevance to the development and administration of programs in technical and scientific communication. Although 90 minutes is a good chunk of time for any presentation, winnowing options has been a daunting, albeit interesting, task for a number of reasons: the breadth of possible topics, the difficulty of prioritizing them, and the depth of expertise in the field represented by the people in this room. What gave me the courage to move forward was the knowledge that what I needed to do—make choices, set priorities, and defend those choices—is exactly the kind of thing that we as program administrators do daily and weekly and year-in and year-out. Thus, I see my role not as providing the last or even, perhaps, newest word on any of the topics I'll discuss this evening, but rather as a reminder to all of us of the broad connections between our history and our current moment to set a context within which our more detailed discussions can continue over the next couple of days.

In deciding on an organization for this talk, I considered several frameworks, most notably the time periods involved and significant issues, but found that the project kept growing tentacles. What finally gave me focus was the primary goal that we share as program administrators, notably to produce well-educated, ethical professionals with the skills needed to move smoothly into today's job market and to prepare for meeting the future challenges that we know will come, even if we don't know what specific form they will take. Everything else we do as administrators (such

as program development, staffing, and curriculum) goes back to two fundamental, although not at all simple, questions:

- What are the core skills students need for the current and future workplace?
- What do our courses, curricula, and programs need to look like to adequately address and develop those skills?

I see these two questions as all-encompassing because the core-skills question leads us quickly to look at changes and trends in technology, in academic and disciplinary arenas, and of course, in the workplace, both nationally and internationally. From this set of categories, we can develop both a comprehensive sense of the skills and directions as well as the contextual knowledge that can help us prioritize those skills. And the questions about course, curricular, and program foci lead us quickly from wish lists and possibilities into a host of administrative issues and their enabling and constraining characteristics, including our academic homes and disciplinary allegiances, resources, staffing, and students, our academic careers and those of junior faculty, and so on.

Because it's obviously impossible to cover all these topics over the last 35 years as well as future projections, I'll proceed by focusing on three points in that time span: the founding year for CPTSC in 1973, the 1990 midpoint between that founding and today, and the topics and issues prominent in 2007 and 2008 that promise to challenge us as we move forward. As we transition from period to period, we'll look at some significant dates in the timeline of technology, which has assumed increasing importance in our programs as it has in our lives. For each of the periods, I'll then turn to discussing core skills and the related issues I mentioned. Along the way I'll make a few detours to talk about the history and developments in our program at Carnegie Mellon that are relevant to the discussion. I'll also be using the contents and images from *Technical Communication* and *Intercom* as a shorthand reference to events and trends.

Before looking briefly at 1973, however, I'd like to move back a few years to note that the first technical writing course we're aware of (thanks to Robert Connors' 1982 archival work) was offered in 1904**,** and the first technical writing textbook we're aware of was published in 1911. It was not until 1958**,** however, that the first technical communication undergrad degrees were established in the United States.

In a 1973 article in *Technical Communication*, "University Programs in Technical Communication," Thomas Pearsall indicates that he was able to locate only three graduate programs in technical communication or technical jour-

nalism—at Boston University, Illinois Institute of Technology, and Rensselaer Polytechnic Institute, with RPI's being the oldest—and nine undergraduate programs—Arizona State University, California State University Fullerton, Carnegie Mellon University, Colorado State University, Georgia Tech, Michigan Tech, University of Minnesota, and South Dakota State University. Pearsall indicated that Colorado State, founded in 1958, was the oldest of these undergraduate programs. Although I greatly respect Tom Pearsall's work as one of the founders of the field and of CPTSC, I do have to set the record straight on one point: my recent research into the CMU archives indicates that our bachelor of science in Technical Writing & Editing degree was also founded in 1958. To give you a sense of what things seem to have been like at that time, I'd like to share with you an article from the October 3, 1958, edition of *The Pittsburgh Press* reporting on our new major.

First, however, a bit of context. Carnegie Mellon was then Carnegie Institute of Technology, and the English Department was a unit within the Department of General Studies that offered literature courses to engineers and a bachelor of arts in English Literature to the women of the then Margaret Morrison Carnegie College for Women (MMCC). Erwin Steinberg, whose work in plain anguage and style many of you might know, and who recently retired after 60 years of active teaching and administration at CMU, was then Head of the Department of General Studies as well as a writing consultant to local technical industries such as Westinghouse. Drawing on that industrial consulting experience, he began offering courses in technical report writing to MMCC students and in 1958 instituted the bachelor's of science in Technical Writing and Editing. All serious stuff when told this way, but *The Press* article gives you a sense of then-current perceptions of technical communication and of women as professionals that are a bit different from our perspectives today.

As I hope you can see in this not-very-good copy of a microfiche image of the article (see Figure 1), Erwin and a group of his students are sitting around a table examining what looks to be a collection of reports. You'll note that the article appears on the "Women's Pages." The caption formally describes this activity, but the headlines and the lead paragraph provide a somewhat different perspective. The headline reads, "Wanted: Writer for Outer Space Job," and the subhead, "Tech Can Supply Just [the] Right Girl." In case you miss the general drift, here's the lead paragraph:

> Five pretty freshmen of MMCC get drooly when they think of writing about the newest medical discoveries, jet flights that tablehop from continent to continent or even to the moon and back. They tingle at the prospect of writing about the most exciting scientific doings in the world. Or another world. Or outer space. Dr. Erwin R. Steinberg, their BMOC, professor-wise . . . says that

> he can teach them to do those things—to write and edit technical articles, reports or manuals; coordinate technical information, or be whiz-bang successes in public relations, advertising, or sales promotion.

The gender roles are pretty clear, and Steinberg is portrayed as the mastermind of the new curriculum, which the article describes as involving a number of departments—the basic sciences, math, English, social studies, and design. Two quotes by Steinberg are worth citing:

> Technical writing is an obvious choice for women who like science. It's a growing profession in which a woman can make a beginning salary of from $350–$400 a month [$4200–$4800 per year]. Women aren't discriminated against particularly. After marriage, the hand that rocks the cradle can pursue technical writing part-time.

And the final sentence of the article:

> I don't expect our girls will have any trouble finding jobs.

Although the general tone of the article and the final quote from Steinberg seem patronizing to our ears today, it's clear that Steinberg had developed a serious and noteworthy program and that his goal was to address a real need in industry while providing substantive careers for women students. One interesting side note is the obvious assumption that there would be stability within the profession and that the focus of technical writing would involve engineering and manufacturing firms. As a second interesting side note, I looked back at that earliest curriculum, fully expecting to see a basic literature degree with a few technical communication courses tacked on, and while I did find that this was the case in 1957, when students interested in technical communication were urged to add some courses in

Wanted: Writer For Outer Space Job

Tech Can Supply Just Right Girl

By JOAN HERROLD

Five pretty freshmen at Margaret Morrison Carnegie College get simply when they think of writing about the newest medical discoveries, how flights that take-hop from continent to continent or even to the moon and back.

They tingle at the prospect of writing about the most exciting scientific doings on this world. Or outer space.

Dr. Erwin R. Steinberg is their BMOC (big man on campus) professionwise. Dr. Steinberg says he can teach them to do those things—to write and edit technical articles, reports or manuals; coordinate technical information or be whiz-bang successes in public relations, advertising or sales promotion.

As head of the department of general studies at Carnegie Institute of Technology, of which Margaret Morrison is a division, Dr. Steinberg is master-minding the latest addition to Tech's power-packed scientific program.

The course draws on the experience of faculties of five schools and colleges at Tech. The largest percentage of study is in basic sciences and mathematics. English language, writing and literature, social sciences and arts.

In addition courses in graphic arts processes, layout and design, typewriting and technical research and report writing are included.

On Nov. 17 and 18 Dr. Steinberg will address the National Society of Technical Writers and Editors at the Shoreham Hotel in Washington, D. C.

"Technical writing is an obvious choice for women who like science. It's a growing profession in which a woman can make a beginning salary of from $350 to $400 a month. Women aren't discriminated against particularly. After marriage, the hand that rocks the cradle can pursue technical writing part-time."

Dr. Steinberg declares, "The preparation of literature has taken too much time of trained technical personnel whose research skills are currently in short supply."

Dr. Steinberg and Dr. William M. Schutte of Tech's English department have just proofread copies of "A Guide to Effective Communication in Business and Industry," which they wrote. It will be released by Henry Holt and Co. next spring, perhaps, in three different editions, for trade, industry and college use.

Technical writing dates historically to papers scientists used to write to tell about their discoveries and observations. Those who were the best writers got the biggest hearing and the greatest slice of fame—like Galileo, Newton, Franklin and Darwin.

"I don't expect our girls will have trouble finding jobs," Dr. Steinberg maintains.

The Pittsburgh Press Women's Pages

TRAINING FOR CAREERS in technical writing includes evaluation of current company reports. Nancy Ferree, right, gives her verdict to group including Ellen Brady, Sara Shook, Sally Connon, Janis Ceisle and Dr. Erwin R. Steinberg, department head.

Figure 1. *The Pittsburgh Press* article reporting on CMU's bachelor's of science in Technical Writing and Editing.

report writing and complete an internship in industry to prepare for TC careers, I was quite surprised at what I found for the degree in 1958. The degree had 25 specific requirements, only three of which were literature courses. Six courses focused on technical communication skills and communication, including a requirement in the psychology of industrial behavior, two in design (Graphic Arts Production and Layout and Design), and 13 were in science and math. The final course was Typing. As you can see, the degree was substantive and interdisciplinary.

Snapshot of 1973

Before turning to 1973, let's take a look at some important technological changes taking place that soon, and ever more quickly, affected the profession. The timeline I'm about to show you (see Table 1), and those scattered throughout the talk, are drawn from a number of secondary sources, most notably Katherine T. Durack's 2003 *Technical Communication* article, "From the Moon to the Microchip: Fifty years of *Technical Communication*" and Thomas J. Bergin's 2006 word processing timeline from the *IEEE Annals of History of Computing* as well as bits and pieces from other sources. Given the secondary nature of the sources, this timeline is not definitive, but for my purposes here it's sufficient for getting a sense of the pace of change and the ways technology has influenced communication.

Table 1: Timeline 1953–1973

1953	RPI offers masters degree in Technical Communication; first graduate degree in 1955.
1954	IBM's first mass-produced computer, which ran business and financial applications, becomes available.
	Newly founded Society of Technical Writers publishes the first issue of Technical Writing Review, the predecessor of Technical Communication.
1956	Concept of AI (Artificial Intelligence) is formulated.
1958	Colorado State & Carnegie Mellon begin first undergraduate technical communication degrees.
1961	IBM Selectric is introduced.
1964	IBM introduces the term word processing to describe its new version of the selectric typewriter with a magnetic tape drive that provides document storage (referred to as "memory") and thus the first means of editing text without physically changing a paper document.
	First proprietary Computer Assisted Design (CAD) programs are developed in a joint project between General Motors and IBM.
	Prototype of a dot matrix printer is developed.

1965	Rudimentary predecessor of email built at MIT using hard-linked machines.
1966	First practical modems are introduced.
1967	First laser printers are introduced.
1968	Computer mouse invented.
1969	Introduction of Unix and prediction that all future programs would be Unix-based.
	Arpanet established to link research institutions.
early 1970s	Word processing systems existed but were or hard-wired systems used by newspapers, printers, and large organizations that produced commercial publications (the systems were specialized, dedicated, and proprietary and cost around $10,000).
1971	First text message sent over a network.
1973	Founding meetings of CPTSC and ATTW.

I'll intersperse just a little personal history here. In 1967, I was a junior majoring in English at MMCC and taking a programming course. I don't recall my motivation for taking the course, but I vividly recall using punch cards and programming in a language called ALGOL on a mainframe computer that was so large it required a new building to house it. We would write out our programs, generally designed to carry out relatively simple mathematic procedures, and submit them to be run by the technicians in charge of the machines, coming back a day or two later to learn whether we'd succeeded in our appointed task. In education, and in industry during this period, computers were used mainly for computation. The communication aspects of the technology were just beginning to emerge.

To provide a convenient overview of the status of the field of technical communication in 1973, we'll take a look at the covers of the four issues of *Technical Communication* published that year (see Figure 2).The first and fourth covers feature images of word processing and computer-aided design; the middle two have obvious travel in outer space themes. The fourth issue has a special focus on word processing and begins with Benjamin Piscopo's (1973) article, "Word processing—New Approach to Corporate Profit." The article indicates that most companies were then using electric typewriters and urges adoption of word processing to increase efficiency and thus profit.

The first issue of 1973 includes Tom Pearsall's article on university programs, indicating that most programs were located in communication or humanities departments and featured a combination of science, engineering, and humanities courses with little explicit teaching of professional

Figure 2. Journal covers from 1973 *Technical Communication*, published by the Society of Technical Communication.

genres and a general assumption that these applications would be learned via internships or job experience. Given what I'd discovered about the MMCC program in 1958 and its clear difference from the general curricula Pearsall was describing in 1973, curiosity led me back to the archives to look at CMU's 1973 curriculum. Surprisingly, it had changed considerably. Whereas the 1958 version had 25 requirements, the 1973 had only eight. Four were literature courses, and four represented a sequence in exposi-

tory writing, which included two courses in academic and popular expository writing, one in technical writing and editing, and the fourth was a required internship as the fourth course. In addition, students were "urged" to include science, math, and design courses among their free electives, and most strongly urged to take the elective typing course. In retrospect, this change was not really surprising. We know from various academic histories that the late 1960s and early 1970s was a period of upheaval at universities, with many moving toward less specific degree requirements and more elective choices. In keeping with this more generalist bent of the period, Pearsall (1973) noted that 208 of 226 technical communication majors that he was able to locate were enrolled at Colorado State, with most of them going into technical journalism. Another article by James M. Lufkins (1973) makes clear that whether technical writing could or should be taught in the university versus being learned on the job was also an issue.

We get something of a sense of what the technical communication profession looked like at this point from a survey done by Austin C. Farrell published in *Technical Communication* in 1971. Farrell surveyed the Society for Technical Communication's 4,386 members and had 1,874 (43%) return but for simplicity analyzed only 1,250 returns: 1,000 from men, 250 from women, average age of 44, with women entering earlier in their careers and dropping out for a period in the middle. The most frequent job titles included editor (33%), writer (26%), and manager (17%). Salaries had changed a bit from the under $5,000 that Steinberg talked about in 1958, but not significantly, ranging from a low of $5,000 to a high of $25,000, with 61% reporting earnings between $10,000–$16,000. The professional genres in which technical communicators reported working on most frequently were manuals (35%) and engineering reports (20%). Only 2% of the respondents reported working in the software industry. As other articles from the 1971–1973 period as well as the previous timeline suggest, computers were not entirely absent, but appear to have resided primarily in large organizations such as JPL, which used them for design, and the United States Naval Ordnance Laboratory, which worked on a project to program a computer to translate technical manuals into Vietnamese.

Although the specifics of this 1971 survey indicate some differences from today, other articles suggest that a number of the issues we face today were very much a part of the profession during that period. A 1972 article by Louis Perica, "Honesty in Technical Communication," warns against the deceptive practice of airbrushing photographs for publication. Another article mentions a panel at the 1972 conference on "Sexual Politics

in Industry." Other article titles, "The Visual Effect of Printed Matter" and "A Project Management Model," suggest these issues were also of concern.

Snapshot of 1990

Before turning to 1990, I return to the timeline for a quick overview of the period from 1973–1990 (see Table 2).

Table 2. Timeline 1973–1990

1973	Meetings of CPTSC and ATTW are founded.
	First plain paper (Xerox) and color (Canon) copiers are introduced.
1974	First WYSIWYG word processor built at Xerox PARC introduced.
	Wang 1200 Word Processor linked to IBM Selectric that could store up to 20 pages of text.
1975	First widely available laser printers.
1976	Apple founded.
	ELECTRIC PENCIL, the first word processing program for personal computers, became available.
1977	Microsoft was founded.
	Apple II, the first PC with color graphics, hits the market.
1979	WORDSTAR was introduced @ $495 + $40 manual.
1980	First hard disks for PCs were marketed by Seagate.
1981	First successful "luggable" computer, the Osborne, which was the size of a small suitcase and weighed 20+ pounds, is introduced.
	The IBM PC and MS-DOS debuted.
1982	WORDPERFECT with WYSIWYG editing interface and keyboard shortcuts for the PC became available.
1983	Arpanet connected 213 United States universities.
	Microsoft WORD debuts.
	Apple's Lisa, the first PC to use a GUI interface and feature the desktop metaphor, mouse, icons, and pull-down menus, hits the market.
	FCC approves mobile phones and first commercial cell phone call is made. The first commercial cell phone, the Motorola DynaTAC8000x (aka "the brick") weighed 28 ounces and retailed for $3,995.
1985	The first commercial desktop publishing program, Aldus PAGEMAKER for the Mac, debuts along with the Apple LaserWriter, the first desktop laser printer to use PostScript.
1985–1986	The first hypertext application, ZOOMRACKS, a shareware database management system used a card-file metaphor for displaying and manipulating data, becomes available.
1986	SGML is adopted as an international format standard.
1987	POWERPOINT 1.0 debuts for Mac, but is soon purchased by Microsoft.

1988	HYPERCARD for Mac becomes available.
1989-90	The World Wide Web debuts and consists of only one server housed at CERN, a text-based browser, and one webpage describing the Web. The system goes public in spring 1991.
1990	The first commercial search engine, Archie, hits the market.
	HTML is introduced.

Once again we turn to covers from *Technical Communication* from the year in question (see Figure 3). I've presented only two of the four covers for 1990 because all have the same look. One possible reason is suggested by a series of four articles in the February issue that focus on desktop publishing, explaining how to use computer technology and software in "processing documents" and "retrieving information." The discussion makes clear that there is great ferment, although few standards, and that there's more than a little tension between early and later adopters. Arguments against the software included concerns about who will do document design, what is lost when drawing, and illustration is abandoned in favor of grids and text-dominated designs.

One surprise in the topics covered in 1990 was the clear presence of concerns about internationalization, including a recurring column by Fred Klein on "International Technical Communication." Interestingly, all issues for that year include ads for various translation services, suggest-

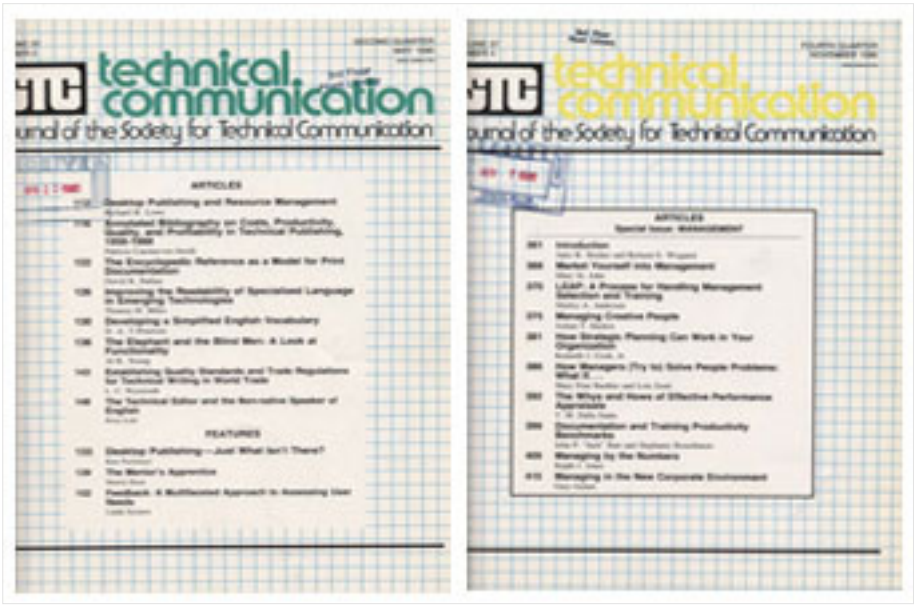

Figure 3. 1990 journal covers from *Technical Communication*, published by the Society of Technical Communication.

ing that such work was being done, but not by technical communicators themselves. And although the ongoing discussion in Klein's column is consistently enthusiastic about the possibilities for working internationally enabled by the new technologies and equipment, it is also clear about the complexity of doing so when the available communication tools involve complex linkages of PCs, fax machines, modems, scanners, courier services, electronic bulletin boards, electronic mail, satellite communications, multilingual terminology databases, and a CompuServe service called the Foreign Language Education Forum (FLEFO) that links computers in 95 countries.

We get a sense of change in the profession from a 1990 article by Lauren Livo on "What We Call Ourselves," which provides an overview of the job titles of 397 presenters at the 1988 International Technical Communication Conference. Although the number and sample are not large enough to compare directly with the Pearsall report of 1971, what's interesting is the broad range of titles emerging among the group that in Pearsall's survey was covered mainly by the categories of "editor" and "writer." In the group Livo examined, variations on technical writer or editor were most common, accounting for 55% of the group. Another 20% self-identified as "information developers" and 10% as "documentation specialists," both categories not seen in the earlier survey. The remaining 15% included 28 different titles covering specialties such as audio/visual production, electronic publishing, text management analysis, marketing, and public relations. From these categories alone, we get an impression of the kinds of changes taking place in the field and the kinds of challenges academic programs preparing students for this marketplace were experiencing.

Interestingly, the Carnegie Mellon technical communication curriculum of 1990 had returned to a model that resembled the original 1958 model more than the much looser 1973 model. In 1990, the degree had 21 specific requirements. The four literature courses from the 1973 model are still present, but the four-course writing core now features courses with a specific technical communication focus. There's been a return to including two courses in design, and the "suggestion" for math and science courses of 1973 has become a requirement for 11 courses in math and the sciences, including at least one course in statistics and one in computer science.

In the period between 1990 and now, the pace of technological developments in communication media quickened dramatically, moving, for example, from the introduction of Google in 1998 to its celebration of achieving the benchmark of one trillion pages indexed by its tenth anniversary in 2008. Table 3 provides a quick look at the major communications innovations in this period.

Table 3. Timeline 1992–present

1992	Apple's pocket-sized PDA, the Newton, is introduced.
1993	Mosaic, the forerunner of Netscape and the first GUI web browser available.
	First Adobe PDF is available.
1994	Yahoo! aunched.
1995	Amazon.com debuts.
	FireWire and USB make it easier to connect devices.
	CPTSC has first website and listserv.
1996	XML developed.
	Hotmail, the first free web-based email provider.
	Browser wars between Microsoft and Netscape lead to practice of quarterly releases of software.
1998	Google launched.
	Open source coined and open source consortium formed.
	First iMac G3 ("i" for Internet) with USB ports introduced.
	WWW Consortium published first recommendations for XML.
1999	Blackberry introduced.
2000	First exclusively e-book, Stephen King's *Riding the Bullet,* is released.
	Single-sourcing and knowledge management are hot topics.
2001	iPod introduced.
2002	Wireless networking becoming more available.
2003	MySpace and Mozilla debut.
2004	Gmail becomes available.
2005	YouTube debuts.
2007	iPhone debuts.
2008	Google celebrates 10th anniversary and hits one trillion benchmark for number of pages indexed.

Before moving to contemporary issues, I'll make a slight detour to 1997 and to successive covers for the May and August issues of *Technical Communication* because the redesign that occurred that year is emblematic of changes in publications and publication software and their implications for technical communication curricula (see Figure 4). The clear difference between the May cover that closely resembles the covers from 1990 and strongly suggests a focus on content and text, and the August 1997 cover that re-introduces color and images suggests a shifting focus to document design even as it celebrates the tradition of hand lettering.

Contemporary Issues & Core Skills

In this final section, I examine current issues and conceptions of the core and supplementary skills students need to have and our curricula need to

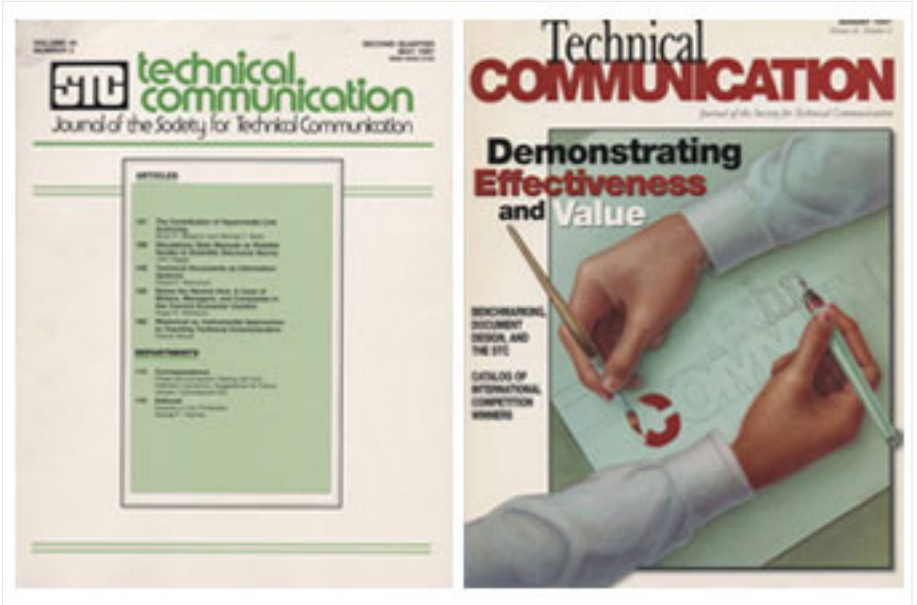

Figure 4. May 1997 and August 1997 journal covers from *Technical Communication*, published by the Society of Technical Communication.

consider. In discussing core skills, I'll focus on both the fundamentals and the areas of change and growth with some discussion about which we should bet on as we make necessary curricular changes. Interestingly, both industry and academia agree on the fundamentals, although this agreement is changing somewhat with the proliferation of possible topics and skills. The two groups do not agree, however, on the details or the priorities. As we move into the areas of change and growth, we very quickly see considerations of changes in technology and the workplace, both nationally and internationally, and we encounter significant differences concerning which directions to bet on. As a shorthand for looking at contemporary issues and priorities, I turn to selected covers from *Technical Communication* and *Intercom* from 2006–2008 and their topics of focus (see Figure 5). For anyone working in the field, the issues represented by these covers don't bring any startling revelations, but they do point to areas that have particular salience at the moment and that also offer challenges to us as program administrators as we work to keep curricula current. The focus on academic program review and assessment reminds us as well that although we have strong responsibilities to adapt to changing needs within the profession, we are also ultimately academic programs that exist with the world and standards of academia and professional accrediting bodies, and it is these procedures that exert the most important, and increasingly proactive, shaping influences within which we work.

Figure 5. Select covers between 2006–2007 from *Technical Communication*, published by the Society of Technical Communication.

Two consecutive *Technical Communication* covers from 2008 nicely illustrate the continuing currency of traditional skills such as copyediting of print documents and the more recent addition of sound, color, animation, and movement to the skill repertoire expected of technical writers today (see Figure 6).

Figure 6. The 2008 May and August covers from *Technical Communication*, published by the Society of Technical Communication.

The *Intercom* covers of the same period show a similar range, although it's interesting to compare the *Technical Communication* 2006 cover on International Communication that features the American flag at the center and suggests a strongly positive future with the United States in the lead, with the February 2007 cover of *Intercom* with a much less positive focus on "Protecting Yourself from Offshoring." The March 2007 issue on content management features a similarly defensive and somewhat gloomy tone indicated by the cover question: What's Become of the Tech Pubs Department? As the professional magazine of the field, *Intercom* is naturally concerned with both preserving and enhancing the profession and keeping its readers up-to-date on the latest industry trends and their implications for technical writers. Not surprisingly, seven of the 14 covers from this period focus on intra- and internets, Web 2.0 software, e-learning, netnography (online ethnography), and animation. At the same time, we see traditional concerns with translation, usability, and building effective business cases (see Figure 7).

It's also interesting that the more object-based covers of 2007 are followed by 2008 covers in which the technical writer is much more physically present but portrayed in a variety of roles (see Figure 8). Images of control—the hand harnessing the power of the Internet, the puzzle/problem-solver, and the conductor—dominate, and although imagery also conveys challenge, the technical writers appear to be up to the task. But there's also

Figure 7. Select covers between 2007–2008 from *Intercom*, published by the Society of Technical Communication.

obvious concern and ambivalence, most specifically in the image on the May 2008 cover in which the writer, working with pen and paper, appears to be overshadowed and overwhelmed by an anthropomorphized piece of software. The July/August cover with what look to be supplicant hands pleading for money and the somewhat whimsical September/October cover in which the bride is abandoned and clearly about to slip over the edge as "good projects go bad" suggest some troubled waters. It's possible, of course, to read too much into these images, and I know we'd need to find corroborating evidence to make any interpretation stick, but there is a clear sense of change and challenge and multiple new skills to learn represented in these various images.

This sense of multiple options and foci coupled with lack of agreement on priorities is repeated and reinforced by the overviews provided in recent publications and the newly developed Society of Technical Communication's Body of Knowledge (BOK) project,[1] the first systematic attempt to gather and prioritize the skills and abilities considered essential for TC professionals. The goal of the BOK project is to provide one-stop shopping for all things related to technical communication, first by pointing interested parties to existing knowledge and then by developing a portal website as a means of expanding and tracking knowledge in the field. The first step has been to seek agreement from both professionals and academics on what the major "knowledge do-

Figure 8. Select covers between 2006–2008 from *Technical Communication*, published by the Society of Technical Communication.

[1] See ‹http://stcbok.editme.com/›.

mains" are and then to ask experts in each domain to populate the categories. The current configuration features 11 knowledge domains, beginning with the catch-all first category, "About TC," and including topics as diverse and varying in breadth as management, information design & development, tool knowledge, collaboration, deliverables, research & practice, business knowledge, technical communication standards, professional development, and, last but not least, at least to us, academic programs.

The BOK project is still in a draft phase and features a process under which each domain is developed by separate drafting committees. Not surprisingly, this process encourages both spread and inconsistencies in the topic categories and hierarchies. For the academic programs category, the current draft was developed by Nancy W. Coppola, Marjorie Davis, Sandi Harner, Norbert Elliot, David Dayton, and Tommy Barker based on their extensive knowledge of existing programs, including feedback received about the original overall map be presented at the STC Annual Summit and International Professional Communication Conference (IPCC). Harner will be presenting a session on the BOK project in general and the academic programs domain in particular session tomorrow [October 3, 2008] to solicit feedback.

Some other recent and useful sources for examining trends and directions in the field include special issues of the lead journals, including the *Technical Communication Quarterly* January/March 2008 special issue on "Content Management and Technical Communication," the summer 2007 special issue of *Technical Communication* on "Technical Communication in the Age of Distributed Work," and a recent *Intercom* issue focusing exclusively on Darwin Information Typing Architecture (DITA). The last few years have also presented us with academic collections focusing on these issues, including Barbara Mirel and Rachel Spilka's 2002 *Reshaping Technical Communication* and Mark Zachry and Charlotte Thralls', 2007 *Communicative Practices in Workplaces and the Professions*. Both collections provide a similar sense of the current range of topics and specialization within the field.

At Carnegie Mellon, our sense of these evolving changes led to a major revision of our technical communication degree. The redesign involved a move from the flexible, generalist curriculum developed over 30 years ago to a more specialized and specified curriculum that both updates the curriculum and aligns it strategically with related Carnegie Mellon programs. The newly redesigned degree, which went into effect in fall 1999, includes two main tracks, one in Technical Communication (TC) and one in Scientific and Medical Communication (SMC). We revised the core to add a course in style and to require both document design and online information design. For each track,

we created a distinct set of relevant core electives. Finally, we revised the former requirement for 11 courses in science and math, so that the TC degree now features more work in computer science but doesn't require work in the natural sciences, and the SMC degree requires work in both computer science and the natural sciences. In place of science courses, the Technical Communication track includes electives in business, technology, and communication.

As the various sources indicate, it's easy to generate ideas for possible directions but much harder to answer the question of where to place our curricular bets. As we work through these questions, we naturally consider questions such as what to include in our curricula and what amount of time and attention to give to each. Of course, we also need to consider the constraints of individual situations, particularly with regard to staffing, funding, and what's possible in the short term. All these considerations shape our thinking and immediate decisions, but we all also need to address the important question of what direction(s) to head in (or speed toward) for the long term.

This last consideration is necessarily influenced by current and projected trends including what's happening in technology, in the workplace (United States and internationally), in the broader world around us, and within academia itself. With regard to technology, I'm sure I don't need to remind this group of the many challenges we face in terms of keeping our programs, labs, and courses (as well as instructors) up-to-date as technologies proliferate, costs escalate, and both students and employers push us to include all the latest developments in our programs. Within academia, there's much current discussion, for example, about using the various interactive platforms known collectively as Web 2.0, while industry is quickly moving forward from the social networking aspects of Web 2.0 toward the Web 3.0 platforms that will support the interactive development of knowledge and provide more flexible and easier-to-use platforms for both individual research and collaboration across distances. As these new technologies develop, they naturally affect user expectations. A recent presentation that Stephanie Trunzo of the IBM Information Architecture Group (one of our MAPW alums) for Carnegie Mellon students brought this clearly into focus when she showed us the following slide (used with permission) of what they see in terms of the evolution of online help (see Figure 9).

Working back from the slide to curriculum, we can see that we're quickly into requirements for Web, online, and multimedia production software along with the alphabet soup of new mark-up and authoring tools including XML, CSS, CMS, and DITA. These changes obviously put pressures on curricular content, but they also, and importantly, facilitate distance learning and thus are a factor in the increasing pressures many programs feel to put some, or much, or all, of their curriculum online. Although all these changes are important as

well as significant influences on the decisions we make as program directors, it's equally important for us, and not unrelated, to consider current trends in the workplace.

My recent review of the literature (see Appendix) brought up four trends of particular interest. First are the shifts occurring in types of industries and in relationships between organizations and their clients or customers. We've heard much, of course, about the shift from product-based to service-based and then to information-based organizations (see, e.g., Faber & Johnson-Eilola, 2002), but Pine and Gilmore (1999) take these ideas one step further by suggesting that experience-based and transformation-based services are the wave of the future. These assessments are also supported by recent trend data from the Bureau of Labor Statistics (BLS) as shown in Figure 10. This seemingly simple picture is confounded, however, by a recent analysis by Richard O'Sullivan for STC published in the September/October 2008 issue of *Intercom* also based on BLS statistics. According to O'Sullivan's analysis, technical communication employment has increased most in manufacturing and decreased in the software industry and, not surprisingly, in the financial services field.

The second trend concerns a shift in the structure of organizations and the role of technical communication within organizations. Shifts to intra-company and across-companies teaming and to distributed and virtual

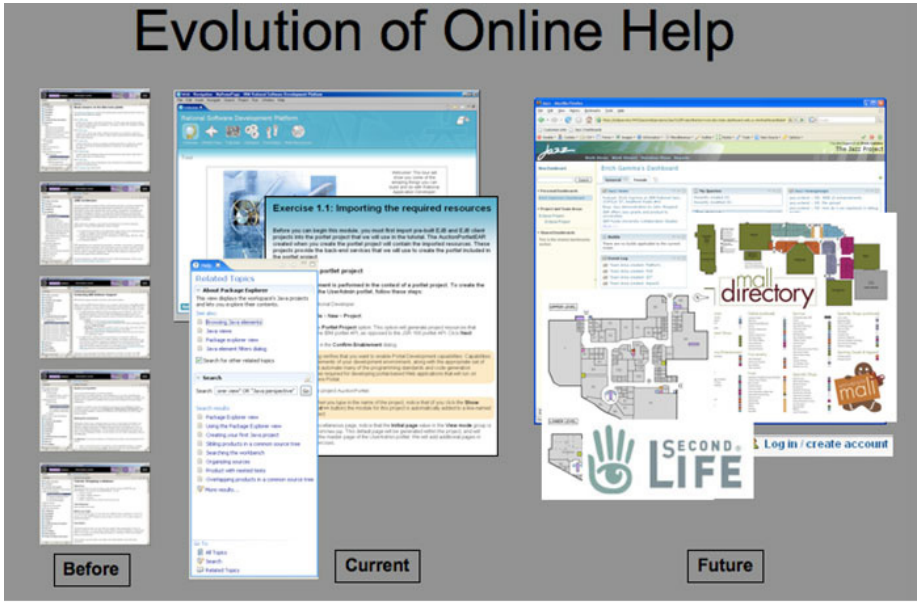

Figure 9. IBM Information Architecture Group's presentation of the evolution of online help systems.

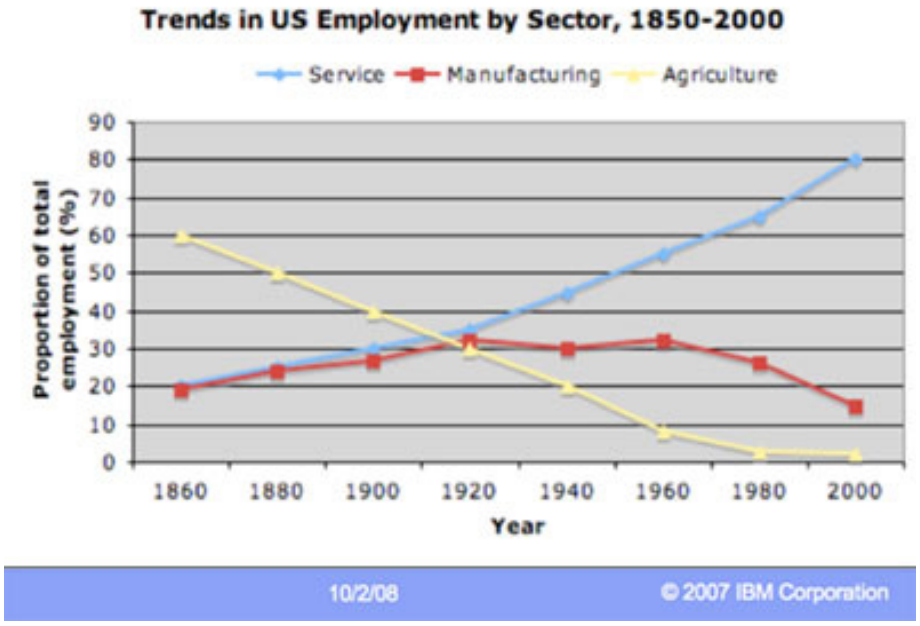

Figure 10. Data display from the Bureau of Labor Statistics, used with permission from IBM.

work environments are occurring across all workplace sectors, particularly prevalent in service- and information-based organizations. Jennifer Ciroli, an information manager for IBM, recently showed internal IBM reports that predict that by 2010 the average knowledge worker will have days divided up something like this: 30% working alone (office or telecommute), the remaining 70% spent on a variety of team arrangements: 5% in same time/place, 40% with different time and space, and 25% with different space and same time. The potential impact on curriculum is obvious; what we can and should do about it is less so.

The third workplace trend is an increasing demand for accountability and measurement of value and a related demand that incoming employees have some knowledge of business models and a focus on contributing to the overall financial health of organizations through individual and unit efforts. This trend is most common in the corporate world, and we're all certainly aware of it in journalism and in publishing. It has, however, also made inroads into nonprofits and academia, as we all know from recent pressures for outcomes-based evaluation of programs and institutions. In terms of curriculum, this trend implies the need for more organizational and financial acumen as well as an understanding of tools needed for measurement and arguments for value when no clear metric is available.

The fourth workplace trend is the gorilla, or perhaps more accurately, the trio of gorillas in the room: outsourcing, internationalization, and

globalization. The challenges here are multiple. At a minimum, graduates clearly need to have intercultural awareness and communication skills. But at what level should we address these issues in curriculum. Should we teach general principles of the relationship between language and culture? Simplified English? World Englishes? Writing for translation? Or translation itself? Should we develop partnerships with international companies or partner with instructors or institutions in other countries to develop projects in which students work on teams with international counterparts? Should we develop study abroad programs and exchanges? Should we seek out (or perhaps even require) internships with an intercultural focus? Should we develop tracks or specializations in these areas within programs? Can we partner with other departments at our universities to make such tracks feasible without needing to invest in new faculty positions? Should we be requiring or teaching second languages? And if we do, which language(s)? And as we consider adding these elements to our programs, what do we take away? As with the changes in technology, an additional challenge is that to add any of these elements to our programs, we ourselves need to have the requisite knowledge and skills.

A number of recent articles (see Appendix) have addressed some or all of these issues, and several panelists listed in the conference program will be presenting information on their initiatives. We also have the first book on the subject making its debut tomorrow, the 2008 volume, *Designing Globally Networked Learning Environments: Visionary Partnerships, Policies, and Pedagogies*, edited by Doreen Starke-Meyerring and Melanie Wilson. What the literature suggests, and what Starke-Meyerring in particular has strongly advocated, is that what's needed (and most effective) is not the piecemeal addition of an intercultural component or course here or a short study abroad experience there, but rather a close integration of global experiences into overall curricula. The general sense is that intercultural communication, like document and web design, is destined to become central to our programs. As we contemplate this possibility, it's sobering to consider comments Starke-Meyerring made in her 2005 *Journal of Business and Technical Communication* article on "Meeting the Challenges of Globalization." In that article, she describes both current projects in technical communication programs and technical communication professionals' interactions with international counterparts in the workplace as consisting primarily of work in global virtual teams or with clients or customers in other countries. In addition to pointing to the various literacies involved in these exchanges, she also brings up the critically important point that these interactions take place within a framework of an often conflicting

network of customs, laws, and national and international regulations as well as often-conflicting ideologies—all suggesting that in addition to intercultural literacies, students (and we as instructors) need critical literacies and an open-ended (and open-minded) inquiry-based approach to such interactions.

Although this characterization might seem overwhelming, several resources and opportunities are becoming available. Starke-Meyerring predicts, for example, an increasing demand for technical communication teaching and programs for international students in India, China, other Asian nations, and Eastern Europe, with the proviso that much of this instruction is likely to be done via distance education. Additionally, many institutions are encouraging such connections and even making some funds available to support such initiatives. Many are also supporting various initiatives, majors, and minors involving globalization, and it doesn't seem too crazy to see a role for our programs in these initiatives. With regard to the integration of foreign languages into the curriculum, the State Department and other federal agencies are working to encourage such interaction and have limited funds available, particularly for those languages considered to be strategic. Finally, we have at least anecdotal evidence that such connections can have a recruiting advantage.

Like most of the topics I've touch on today, this one is vast, so I'll just do some hand-waving here and point you in the direction of a few things to consider. The first is the CPTSC annual meeting, which will be held in Denmark in August 2009 to overlap with the European Symposium of Languages for Specific Purposes (which considers technical communication to be one of its special purposes). The conference will feature the pioneers working at the intersection of technical communication and international communication and offers a good opportunity for networking with European colleagues. Another good resource is a 2007 article in *Technical Communication* by Doreen Starke-Meyerring, Ann Hill Duin, and Talenee Palvetzian, who overview 15 existing programs and point to eight programs in the planning stages. I'd also point you to a number of people in this room, including Bruce Maylath and Dale Sullivan, from North Dakota State University (NDSU), who have developed partnerships with European universities; the faculty from Southern Polytechnic, which has Chinese students coming the United States to study technical communication; the University of Washington with its well-established program in Japanese technical communication; and Maylath's work on the changes taking place at the intersections of translation and documentation.

Although this topic is far from exhausted, I turn to the final area of consideration, academic and disciplinary trends and the ways in which they

influence us as we prioritize and implement new directions and priorities. One trend that has become increasingly evident on our campuses is the proliferation of specializations that both compete and interface with technical communication (e.g., information design, interaction design, usability, information systems, multimedia production, and so on). In our case at Carnegie Melon, for example, five of the seven colleges offer courses in web design. A similarly common trend is the development of interdisciplinary fields that blur the question of who does what and who can create tensions about accountability and how teaching and scholarship are measured. They can also, of course, provide some interesting opportunities. My institution, for example, has programs in Engineering & Public Policy and Social & Decision Sciences that include work in organizational and crisis communication. Statistics is involved with data visualization. And then there are the broad interdisciplinary fields such as global studies, international relations, and green curricula.

Another influence is seen in expanded definitions of literacy at the general education level. Various universities have established, or are considering establishing, requirements in technological, media, visual, and intercultural literacies among other possibilities. The University of Iowa and Syracuse University provide good examples, but they're certainly not alone, and the links both programs forge between their entry-level courses and required upper-level courses that feature communication within specific disciplines are also becoming increasingly common.

Finally, I'll turn to just mentioning some of the factors affecting curriculum and program development. I've mentioned some of these already in passing but they're significant enough factors in our lives to bear repeating. Resources and resource constraints obviously need to be mentioned, as do staffing, and staffing constraints. There continue to be more positions than qualified candidates coming out of doctoral programs, with areas such as new media experiencing particular shortfalls, as Carolyn Rude (2004) and Kelli Cargile Cook (2004) and those who have studied the academic job market as well as the first-hand evidence we all have from various faculty searches supports this observation. This situation has created a thriving market for those already in the field but certainly introduces challenges to us as program directors seeking to maintain strong and stable faculties and move in new directions.

Another challenge is posed by a convergence of academic trends, at least some of which have conflicting aims. One I've encountered in recent reading and heard already today at the start of this conference discussed being in not-too-hushed terms is the increasing focus on developing rev-

Figure 11: August 2008 cover from *Technical Communication*, published by the Society for Technical Communication.

enue streams in the form of fundable initiatives, technology transfer, and university-initiated start-ups. Thomas Barker (2007) has recently described this trend as a shift from endowment-funding models to models based more on market economics, which produces increasing pressure for technical communication programs to align themselves with both industry and institution's strategic plans. Another challenge putting pressure on programs and resources is the push for distance, online, and networked classrooms, all of which require substantial investments of time, labor, and equipment. At the same time, programs, like universities in general, are coming under increasing pressures from accrediting agencies and state agencies to provide evidence of outcomes-based planning and assessments. Taken together, these trends both impact existing programs and not infrequently energize the long-standing debate about the appropriate academic home for technical communication programs. It's much too late in the evening to jump into those waters, so I'll end here with one final image from *Technical Communication* and the hope that my comments this evening will prompt more detailed discussion over the next few days (see Figure 11).

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The Master of Applied Arts in Written Communication at Missouri Western State University

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ABSTRACT. This article describes the development, successful proposal, and curriculum of the Master of Applied Arts in Written Communication at Missouri Western State University. A program profile, institutional and program history, and faculty profile are included.

KEYWORDS. applied learning, interdisciplinary programs, program development, New American Regional University, technical communication, writing studies

In August 2009, Missouri Western State University will welcome the first students into its Master of Applied Arts (MAA) in Written Communication program, the final step in a process that began in 2004. In addition to profiling this interdisciplinary, applied degree, we offer a portrait of the development of a master's program at an institution that had only recently begun offering graduate programs.

Program History

Institutional Context

Located in St. Joseph, Missouri, north of Kansas City on the Missouri River, Missouri Western State University has strong roots in the local community, founded in 1915 as St. Joseph Junior College, a two-year liberal arts transfer institution. In 1969, it became Missouri Western College after voters in the five-county area surrounding St. Joseph approved bond and tax levies to add baccalaureate programs to the junior college and to build the present campus. Western added "State" to its name in 1977 when it joined the Missouri system of public, four-year

Programmatic Perspectives, *1*(2), September 2009: 197–181. Contact authors: ‹kadkins@missouriwestern.edu› and ‹frick@missouriwestern.edu›.

institutions. In 2005, Western achieved university status, and the legislation that enabled the name change also authorized Missouri Western to offer professional master's degrees. This legislation specified Western's mission as the state's only applied learning institution of higher education, a recognition of the role already played by applied learning in Western's undergraduate curriculum, where over 80% of Western's students participate in an internship, clinical practicum, service learning, study abroad, and/or faculty-student research prior to graduation.[1]

Western's student body of approximately 5,200 consists primarily of undergraduates enrolled in four-year degree programs, two-year associate degrees, pre-professional transfer programs, and one-year certificates. Western is an open-door, teaching-centered institution, with graduation rates of baccalaureate degree-seeking students at 31%, with another 31% transferring to another institution.[2]

Western's tenured and tenure-track faculty teach 23–26 hours per year, usually four courses per semester. In support of Western's applied learning activities, faculty might apply for summer research grants to work with high school and undergraduate students; grants to fund applied learning research and/or presentations at conferences have been in place for over 10 years. Faculty members also receive support for their research not directly related to applied learning. They are expected to present at national conferences and to publish in peer-reviewed journals and encouraged to share research with regional organizations and businesses through workshops, presentations, and consulting.

Departmental Context

The undergraduate English major offers concentrations in journalism, literature, public relations writing, and technical communication. (Journalism, public relations writing, and technical communication students are often treated as a single group—professional writing students.) The core of the English major includes introductory courses in journalism and technical communication; English education students are required to take courses in composition theory and pedagogy; and all English majors take an upper-division writing course. According to MWSU's *Major Information Report* (2009), the majority of the department's majors opt for a professional writing concentration: 44% in 2005, 46% in 2006, 53% in 2007, 44% in 2008, and 47% in 2009.[3]

Writing has always been a strong component of the undergraduate English program at Missouri Western. To serve students at this open-door institution, Missouri Western's developmental writing program was initiated by tenured and

[1] Reported in 2007 for students entering Missouri Western in 2001.

[2] Missouri Western State University. Building the New American Regional University: A Five-Year Strategic Plan 2007–2012. 15.

[3] See ‹http://www.missouriwestern.edu/ird/institutionaldata.asp›.

tenure-track English faculty in the early 1980s. Today, approximately 40% of the entering student body have EACT scores that place them in the developmental writing course. In 2008, the program received the Conference on Basic Writing's Innovation Award for its successful delivery of ENG 100 Introduction to College Writing.

Given the demographics of Western's student body, faculty accepting tenure-track appointments here have done so knowing they would likely be teaching one or more general studies composition courses on a regular basis throughout their tenure. New and replacement hires in the department since the 1980s, then, have deliberately been targeted toward strengthening the writing and technical communication programs. Faculty involved in the Master of Applied Arts in Written Communication hold graduate degrees in Rhetoric and Composition and Curriculum and Instruction. Some participating faculty have degrees and practitioner experience in technical communication, and all faculty in the program teach composition as part of their regular course load. Areas of faculty research and specialization include computer-mediated communication, technical documentation, visual rhetoric, assessment and curriculum development, writing in the public sphere, and feminist rhetoric. Faculty members have published articles on scientific rhetoric, writing assessment, and rhetorical theory, and two faculty members have published technical communication textbooks. Faculty members have consulted in and conducted workshops for industry and educators.

Development of the Program

As proposals for Missouri Western's university status were in development, no one knew what form graduate programs at Western might take. One thing was clear: Because of non-compete agreements, when Western was given permission to offer graduate programs, they would not look like traditional master's programs. Western is located within 60 miles of two other state universities, so developing a mission that set it apart from other state universities was necessary. To respond to this need, Dr. James Scanlon, president of Missouri Western, coined the term *New American Regional University*. The New American Regional University focuses on serving the economic, cultural, and social needs of area communities through partnerships with area businesses, schools, government, and social agencies. It emphasizes the connection of "theoretical and experiential learning" through applied learning and research."[4]

Applied learning was already a key element in writing courses at Missouri Western. The newspaper and yearbook are part of the journalism curriculum.

[4] See entire document at ‹http://www.missouriwestern.edu/AboutWestern/visionmissionvalues.pdf›.

Students serve on the editorial staffs of a national literary magazine, *Mochila Review*, and a student creative writing publication, *Canvas*. Journalism, public relations writing, and technical communication students are required to complete internships. Even students in the developmental writing program have their outstanding work published in an anthology every year. The strong undergraduate writing curriculum was a natural foundation for an applied graduate degree.

As the legislation for Western's university status was being introduced in 2004, English faculty prepared materials to support a graduate program in writing. We studied master's programs in composition and rhetoric and technical communication. We also drew on published studies of writing curriculum (listed in the Appendix A) and on the resources from the National Writing Project (NWP), the Association of Teachers of Technical Writing (ATTW), the Council for Programs in Technical and Scientific Communication (CPTSC), and the Master's Degree Consortium of Writing Studies Specialists. Later, the department surveyed members of the Kansas City Chapter of the Society for Technical Communication (STC) as well as professional writing students and alumni.

When Western finally received its university designation in 2005, there was still no clear picture of what form its graduate degrees would take. As policies and requirements for full master's programs were still under development, Prairie Lands Writing Project (PLWP), the home of the University's National Writing Project site, began developing a proposal for a graduate certificate in the Teaching of Writing. The PLWP director studied graduate certificate programs offered at other National Writing Project sites and surveyed teachers who had participated in its institutes and workshops. The graduate certificate, which would serve as a foundation for the Writing Studies program, was approved in 2006.

One of the first decisions made about graduate degree programs at Western was that they would be *applied* degrees—Masters of Applied Arts (MAA) or Masters of Applied Sciences (MAS). Applied graduate programs offered by Missouri Western were expected to meet these criteria:

- To be interdisciplinary,
- To include a core and at least two options,
- To be designed as a terminal degree,
- To emphasize the application of theory to practice, and
- To meet the economic, cultural, and social needs of the region.

Additionally, new graduate degrees were offered with as little budgetary impact as possible through the use of shared and existing courses and existing resources. The first three graduate degrees to be approved were

the Graduate Certificate in the Teaching of Writing, a Master of Applied Science (in chemistry, human factors and usability testing, and information technology management), and a Master of Applied Arts in Integrated Media with media and convergent media options. The MAA and MAS became models for our Master of Applied Arts in Written Communication, and the Graduate Certificate served as the foundation for the Writing Studies option. By including some of the existing courses in the Graduate Certificate and already-approved MAS and MAA degrees, we designed a program that is both interdisciplinary and low-impact. Courses have been included in the MAA in Written Communication from programs in integrated media, mathematics, communication studies, business, and psychology. The need for new courses and resources was also kept to a minimum by creating 500-level courses that could be paired with 400-level undergraduate courses. Dual-listed courses in the MAA in Written Communication include ETC 420 Technical Documentation, ENG 503 Literature for Children, ENG 567 Grammar and the Teaching of Grammar, and ENG 574 History of the English Language. ETC 408/508 Technical Editing is a new course offered at both graduate and undergraduate levels.

Composition/rhetoric faculty and the writing program director in the English department began formulating plans for when the "Building Graduate Programs" emerged as the first "opportunity area" in the university's 2007 five-year strategic plan, using principles from Western's "Building the New American Regional University" mission.

The pre-proposal was sent to Western's Graduate Council in fall 2007. The Graduate Council approved the program, complimenting the department on the thoroughness of its research and preparation and the completeness of its proposal. Especially helpful were letters of support from colleagues at other Missouri universities that offered degree programs in technical communication. They supported our assertion that the interdisciplinary and applied nature of the program made it different from programs offered at other Missouri institutions.

The complete program proposal was posted on the website of the state-wide Controlling Board of Higher Education for comment by other institutions in December 2007. In the spring 2008 semester, the program received approval from our Controlling Board, and we were given permission to accept students in spring 2009 and offer classes the following fall. At the same time that the proposal for the MAA in Written Communication was being considered at the state level, we began developing admission standards and procedures, internship expectations, thesis project requirements, and other policies and procedures for the program. The process of creating policies and procedures continued through spring 2009.

Program Overview

The Master of Applied Arts in Written Communication was designed for educators, communications specialists, and subject matter experts interested in pursuing graduate education as a step in career advancement. The program includes a 22-hour core of courses and one of two 12-hour options: Technical Communication or Writing Studies.

The Technical Communication option was designed for students with a wide range of undergraduate degrees and careers. This option should appeal to students currently working in business, government, or industry and looking for a program that will add value to existing skills. The Writing Studies option is designed for teachers looking for a graduate program that strengthens their background in writing and for students interested in preparing to teach composition at the post-secondary level.

Distinctive Features of the Program

As noted previously, two features especially characterize this program—its interdisciplinary nature and its emphasis on applied rhetoric. Both features were created in response to the institutional requirements for the degrees, but both also are a key part of focusing the program to meet specific needs of the region's students and employers. The interdisciplinary nature of the program is immediately obvious in the curriculum. In developing the program, we worked with colleagues in business, journalism, education, and psychology to integrate courses that would meet student needs, and we have developed courses in our curriculum to serve students across the university. We also collaborated with the Department of Education on a writing option in its Master of Applied Science in Assessment. Applied learning is key to Missouri Western's undergraduate mission, and its graduate degree programs are all designated as applied degrees. For the MAA in Written Communication, this designation has meant an emphasis on the application of rhetoric in the workplace and in the classroom. The applied nature of the program is clear in the curriculum.

Curriculum

Core Courses[5]

AIM	505	Converging Media Theory and Practice
MAT	609	Technical Analysis for Decision-Making
or		
ENG	609	Qualitative Research Theories and Methods

[5] Curriculum Abbreviations

AIM	Arts and Integrated Media	ETC	English/Technical Communication
COM	Communication Studies	MAT	Math
ENG	English	MGT	Management
EPR	English/Public Relations	PSY	Psychology

COM	501	Professional and Organizational Communication
or		
MGT	503	Organizational Theory
ENG	620	History and Theory of Rhetoric
EPR	620	Proposal and Grant Writing
ENG	695	Thesis
or		
ETC	695	

We assume that many students interested in the MAA in Written Communication will have practitioner experience, so the program core was designed for reflection and building on experience through an understanding of rhetorical theories. Three courses in the program's core teach theory: AIM 505 introduces students to theory as related to multimedia, COM 501 or MGT 503 addresses communication theory, and ENG 620 addresses rhetorical theory through a historical lens. In addition, during the first semester, students are expected to take either ENG 664 or ETC 600, courses that provide the theoretical and practical foundations for each 12-hour option.

We also assume most students in both the technical communication and writing studies options will be interested in helping others to become better writers, using technology more effectively, and in career advancement. The core was designed with these goals in mind. AIM 505 examines multimedia from a range of artistic and practical perspectives. Courses in organizational theory and communication introduce students to issues that they will face as they move into supervisory and decision-making positions. English/Public relations 620 addresses concerns of students in education, government, business, and industry careers, by including requests for proposal, grant proposals for government agencies and private foundations, and industry proposals for potential clients and contracts; this course has also been designed to meet the needs of students in education or in the sciences interested in practicing grant writing strategies.

The research methods courses and thesis hours provide students with an additional opportunity to develop as professionals. In their first semester, students are expected to enroll in the foundation course for their option (ETC 600 or ENG 664). As part of this course, students begin planning for thesis projects. In the second semester, students are expected to take the research methods course, quantitative or qualitative, that will be most helpful for the projects. The thesis project is broadly defined in this program. Students interested in pursuing a PhD are welcome to write a traditional thesis. However, most students will likely conduct classroom or workplace research that results in something different from an academic research paper. Instead, theses may be practitioner research, whether the

practitioner is a teacher or an industry professional. Final thesis projects may include grant proposals or reports for clients or employers that apply theoretical research to practical concerns. These projects are to be accompanied by a reflective essay that serves as a review of the literature and explains the research methods. Because these projects are primarily transactional, dissemination of the research results is an important component. In addition to submitting projects in written form to the institution—and to supervisors, granting agencies, or clients as appropriate—students are strongly encouraged to share results in a professional forum such as a workshop, conference, magazine, or journal article.

The impact of technology on written communication is a key element in both options of the degree program and another element of the program's applied nature. All campus classrooms are smart classrooms with uniform hardware (desktop presentation computer, video/data projector, document camera, VCR) software, and controls, and fiber optic connections, which provide excellent broadband access to the Web. Courses in both options are taught in computer labs maintained by the English department. Students have access to the Adobe CREATIVE SUITE, Adobe TECHNICAL COMMUNICATION SUITE as well as DIRECTOR MX, FLASH, OMNIPAGE PRO, and Microsoft OFFICE. This emphasis on technology in the undergraduate technical communication program and in the Prairie Lands Writing Project is carried into the graduate programs. Students learn to apply technology to communication problems and to examine the problems introduced by communication technologies.

The MAA in Written Communication is not purely technical, however. Both options in the program share an emphasis on a humanistic approach to writing and technology. When graduate programs were first discussed at Western, we were offered the opportunity to include technical communication as an option in a Master of Applied Science program. However, we wanted to focus on the field's humanistic aspects (Miller, 1979). Throughout the program, we expect students to explore how textual and visual language are used in a variety of settings as well as expect them to explore the problems within language.

Technical Communication Option

Required Courses

ETC	600	Graduate Studies in Technical Communication
ETC	616	Internship in Technical Communication

Electives (6 credits)

AIM	540	Interactive Web Design
ENG	601	Practicum in the Teaching of College Writing

ENG	540	Writing for Management and Supervision
ETC	508	Technical Editing
ETC	520	Technical Documentation
ETC	612	Seminar in Professional Writing
PSY	610	User Centered Design Methods and Tools

The technical communication option is designed not only as a program for technical communication practitioners but also for industry professionals interested in improving their writing as a way of advancing their careers. We hope to welcome not only students whose undergraduate work was in English or English Education but also those students currently working in technical fields such as software development, engineering, medical services, and animal health. In our program proposal, the key justification for the technical communication option included this statement:

> Technical communicators are the bridge between technical specialists and less expert readers, between product designers and users, between government and citizens. Within organizations, they improve collaboration between co-workers, they provide necessary documentation, and they advocate for users' interests. As leaders in the Plain English movement, technical communicators have advocated for clarity in all areas of government and industry communication. Technical communicators can play a key role in globalization, as they seek to improve international communication and an understanding of local audiences. As "knowledge work" becomes more important in the economy, technical communicators will design documents and document-handling systems to make information more accessible to decision makers, workers, and citizens alike.

We have approached technical communication as applied rhetoric, that is, as the study of rhetorical principles as applied in professional and technical settings. We recognize that the field has expanded from its writing and editing roots to online documentation and help files, information architecture, web design and content creation, international communication and technical translation, training, usability and user advocacy, technical illustration and document design, and project management. The required courses give students a solid background in workplace writing and new experiences in the workplace. Students are encouraged to complete internships with organizations other than their employer. If this arrangement is not possible, then on-site internship supervisors will be asked to ensure that internships consist of experience outside their usual responsibilities.

The electives give students the opportunity to focus graduate studies on writing, training, technology, or supervision. Students who want to focus on improving their writing may choose to take ENG 540 Writing for Management and Supervision and ETC 508 Technical Editing. ENG 540 is also designed as a service course for students in other graduate programs. ETC 508 will also be useful to students interested in training because it includes approaches to helping others become better writers. A student interested in training may also enroll in ENG 601, the practicum that is part of the program's teaching assistantships. Students interested in technology and writing might choose to take AIM 540 Interactive Web Design and PSY 610 User Centered Design Methods and Tools. ETC 520 Technical Documentation gives students practice in writing and addresses current issues such as content management, management of writing projects, and supervision of writers. Supervision issues are also addressed in ENG 540. Students are encouraged to choose electives that meet professional as well as research goals.

Writing Studies Option

Required Courses

ENG 512 or EDU 512 Teaching Writing With Technology
ENG 664 Composition Theory and Pedagogy

Electives

ENG 501 or EDU 501 Topics in Teaching Writing
ENG 502 or EDU 502 Professional Learning Community
ENG 503 Literature for Children
ENG 567 Grammar and the Teaching of Grammar
ENG 574 History of the English Language
ENG 601 Practicum in the Teaching of College Writing
ENG 610 or EDU 610 Prairie Lands Writing Project Invitation Institute
ENG 612 or EDU 612 Seminar in Professional Writing for Teachers
ENG 540 Writing for Management and Supervision

The writing studies option was designed primarily for area English teachers, especially those who wanted to strengthen their understanding of writing theory and pedagogy. However, we were careful not to limit its scope to only those currently teaching. We also designed this option for students interested in writing program administration, doctoral work in rhetoric and composition, or community college level or adjunct teaching. In fact, we have already received inquiries from professionals interested in teaching writing as adjuncts after they retire. In our program proposal, we included the following justifications for this option:

> Education and industry leaders are now recognizing the relationship between writing skills and student achievement: "Writing is how students connect the dots in their knowledge" (National Commission on Writing, 2003). Consequently, many high stakes exams—including the Missouri Assessment Program, the ACT, SAT, and AP—have recently initiated a required writing component in all content areas undergoing testing. This renewed emphasis on writing performance as a measure of student learning has resulted in a need to provide teachers with the tools to teach writing effectively, including using Web 2.0 technologies.

Both required courses in the Writing Studies core had previously existed in some form. ENG 512 Teaching Writing With Technology is a hands-on course previously taught three times as a requirement for the graduate certificate students and area teachers, grades K–12. ENG 664 Composition Theory and Pedagogy is currently paired with the undergraduate course ENG 364 Introduction to Composition Theory. These two courses are not technically dual-listed because dual-listed courses are offered at the 400/500 levels. This level is by design; we did not want to raise the 300-level course to the 400 level, and we felt that the foundational course in each option should be offered at the 600 level. As part of keeping the impact of this program at a minimum, we will offer these courses in a dual format—in the same classroom at the same time—but we will offer them separately as soon as graduate enrollments will support a separate class.

Many electives in the Writing Studies option are part of the graduate certificate approved in 2006. Some electives are dual-listed 400-level courses already offered in the English department. Courses developed for the graduate certificate include ENG/EDU 501 Topics in Teaching Writing, ENG/EDU 502 Professional Learning Community**,** ENG/EDU 610 Prairie Lands Writing Project Invitational Institute, and ENG/EDU 612 Seminar in Professional Writing for Teachers. Only ENG 601 Practicum in the Teaching of College Writing, the required course for first semester Graduate Teaching Assistants, and ENG 540 Writing for Management and Supervision are new in the electives for this option.

Challenges

The initial challenges for this program are shared by all graduate programs at our institution. Missouri Western's move to university status, and to offering graduate programs, did not receive universal support in the state legislature; consequently, all new programs have been under careful scrutiny. Because of noncompete agreements for state institutions, Missouri

Western was given a specific mission for its graduate programs—applied learning. In addition, we were asked to offer programs with as little initial impact as possible, using faculty and resources currently available. Western has also faced the challenge of establishing policies and procedures for graduate programs and introducing a culture of graduate study across the institution.

Although interdisciplinarity is one of the program's greatest strengths, it also presents one of the program's greatest challenges. The biggest problem here is communication. When a course is included in the programs of several departments, coordination of curriculum offerings and changes becomes essential. Because the programs are all new, schedules are in flux, and courses are sometimes offered or canceled with little warning. It has occasionally been difficult to get information about course offerings from other departments. We have tried to encourage communication by giving departments that offer graduate programs a seat on the Graduate Council.

The biggest challenge for any new program is recruiting students. Although we do have contacts with area teachers, with businesses where our alumni are employed, and with the Kansas City Chapter of the Society for Technical Communication, we are still looking for ways to reach beyond this core constitutency. We want to build contacts with area educators and employers not just to recruit students but to continue developing a program that meets student needs.

Lessons Learned

The need for communication is obviously one of the most important aspects of starting any program. Before Missouri Western attained university status and was given permission to offer graduate programs, the administration worked to communicate with faculty about the applied nature of any programs that would be offered. As we prepared the program proposal, we gathered information from a variety of sources:

- Published studies of graduate curriculum gave us a sense of what educators and industry found valuable in writing programs;
- Course offerings from other departments were developing and showed us how their graduate programs shaping up;
- All members of our department contribute to discussions;
- Area educators, alumni, professionals, and students responded to a survey that not only indicated their interest in graduate programs but also suggested the best formats and schedules for offering classes; and

- Professional organizations and colleagues provided valuable insight and recommendations. Molly Johnson of Eastern Washington University gave us excellent advice about planning and preparing for a graduate program, and Diane Scollay, Gateway Writing Project director at the University of Missouri–St. Louis was especially helpful in providing course and program descriptions.

To those beginning the process of program development, we also recommend patience. We began researching and planning our program in 2004, four years before it was approved and five years before we offered our first classes. The preparation, research, and time spent developing a complete, well-thought-out proposal paid off when we sent it to the Graduate Council. We received compliments for such a complete, well-designed program, and the proposal moved through the approval process smoothly.

Now, as we begin accepting students and offering classes, we are reviewing the program's progress, noting anything that we might want to change. We plan to use the same patience and care in maintaining and revising the program that we used in designing the program.

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Mutual Mentoring

An Editorial Philosophy for a New Scholarly Journal

Karla Saari Kitalong
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Everyone reading this editorial today knows that *Programmatic Perspectives* publishes scholarship that theorizes and thereby promotes sustained attention to the disciplinary knowledge-making dimensions of technical communication program administration. The idea of mutual mentoring underlies the work that this journal does to help shape a new scholarly space.

For a while, Bill, Tracy, and I operated under the illusion that we had invented the term *mutual mentoring*, but in fact, it's not a new concept. Educators (Landay, 1998), educational administrators (Sorcinelli & Yun, 2009), youth mentors (Fritzberg & Alemayehu, 2004), enterprise computing specialists (Mader, 2008), and even members of religious orders (Rexing, 2002) characterize their work as mutual mentoring. Some people use the term *co-mentoring*.

Mutual mentoring eschews the labels *mentor* and *protégé* or (heaven help us) *mentee*, preferring instead a more egalitarian relationship that Sorcinelli and Yun term *mentor partners* (2009). For us, the term incorporates several ideas.

Collaboration

As Bill, Tracy, and I prepared to propose this journal to the CPTSC executive board, and later to the membership, we discussed, among other things, how we wanted to function as editors of a scholarly journal focused on the scholarship of administration. For us, mutual mentoring captures all the nuances of the collaborative endeavor in which we are engaged. The philosophy came about in part because the three of us have collaborated together since graduate school, and we have lived the truths embedded in well-worn clichés such as "Two—or in our case, three—heads are better than one," and "Many hands make light work." We work together, we disagree, we battle, and sometimes (well, OK, frequently) one of us even argues vociferously in favor of a particular punctuation option. This edito-

Programmatic Perspectives, *1*(2), September 2009: 211–216. Contact author: ‹kitalong@mtu.edu›.

rial collaboration is downright messy, but in the end we like it because we mentor each other and thereby learn from each other.

Theory Development

Another impetus for mutual mentoring comes from the reality that theories and practices of program administration are by no means commonly understood or valued in the technical communication field. Thus, an emphasis on program administration appears to render the journal "suspect" in the eyes of potential authors, other scholars, department chairs, and tenure and promotion committees. In fact, it's entirely possible that CPTSC's annual conference format may discourage theoretical development. At the conference, as most readers know, the program's panels are formed from clusters of related five-minute position papers followed by approximately 45 minutes to an hour of lively discussion. Although this long-standing format yields a high level of engagement and generates ideas that lead to immediate action and implementation, authors may need to do considerable development to achieve the depth of argument expected in an academic journal article. If a 20-minute conference presentation needs sustained attention, consider the labor involved in readying a five-minute position paper for scholarly publication.

Because many article ideas stem from CPTSC position papers, then, each time we receive an article for publication, we are afforded another opportunity to engage in mutual mentorship as we articulate with the author what is meant by the scholarship of program administration. We read each submission not to identify reasons to reject the piece because it doesn't comply with the journal's guidelines, but instead to identify ways in which the article contributes, or could potentially contribute, to defining, shaping, and furthering the work of technical communication program administrators. If its contributions are not obvious to us or to other readers, we usually issue a "revise and resubmit" rather than an outright rejection. Part of the reason is that we don't have many submissions yet because the journal is new, so we don't want to discourage potential authors. But, more significantly, we view every submission as an opportunity to explore with the author and the peer reviewers how a particular piece *could* contribute to and help shape the field given a little rethinking and rewriting.

Relationships with Authors

A conventional mentoring approach would position us—the editors of the journal—as the experienced "insiders," explaining to potential authors how they should revise to meet a set of well-established standards. The mutual mentor-

ship role, however, leads us to consider with the author how readers might respond to the piece. Because we are teachers and scholars as well as program administrators, we know that readers are busy administrators of various types of technical communication programs—bachelor's, master's, or doctoral degree-granting programs, undergraduate minors, and graduate and undergraduate certificate programs. These readers depend on the author's mentorship as well as ours to help them situate claims within an intelligible, relevant, and thoroughly reviewed conversation; clearly explain the theory and methods employed; distill results and/or conclusions; and, perhaps most importantly, help readers visualize how the ideas set forth in the article could be applied in their programs. This is not the job of a single "insider," but of the community at large, which, as the editors of this journal, we represent.

The most visible and far-reaching mutual mentorship comes, then, in our interactions with authors through the editing process, where the power of naming is also illustrated. When we began articulating how the journal would look and feel, we originally thought that we would showcase particular articles by graduate students and early career faculty members. We called these highlighted articles "Emerging Scholars" pieces. But as we reflected on the process, through the mentorship of Laurence José, associate editor, Michigan Tech, we came to believe that we shouldn't single out early career professionals' work from that of more experienced colleagues. Besides the worry that we might be conveying a condescending attitude toward these colleagues, it has become increasingly clear that everyone associated with *Programmatic Perspectives*—authors, editors, reviewers, sponsors like Michigan Tech, Saginaw Valley State University, and the University of Nebraska at Omaha, as well as the CPTSC executive committee and the membership at large—all of us are mutually engaged in the important enterprise of forming and shaping a scholarly community. In this regard, early career scholars' ideas may be fresh and new, even if their writing needs work. On the other hand, some experienced scholars and program administrators might be more sophisticated writers (or not), but may see their work as primarily functional, as an activity separate from theory and scholarship.

By including in our editorial philosophy a willingness to give writers the opportunity to develop their ideas fully, then, we incorporate them into the mutual mentoring process. Although we acknowledge that not every article or idea is suitable for publication in *Programmatic Perspectives*, mutual mentoring encourages us to seek, in conjunction with the author and peer reviewers, the nugget that, if further developed, would provide new insights for program administrators.

Interns and graduate assistants are also part of the mutual mentoring relationship that we enjoy. For example, Laurence José is a Michigan Tech doctoral student whose assistantship is partly allocated to help edit the journal. A native of France with a background in linguistics, Laurence is in the midst of writing a technical communication dissertation and is, as such, perhaps more familiar with the program administration literature than I, at least, could ever hope to be. Laurence functions as a full member of the *Programmatic Perspectives* editorial team. Her mentorship in testing and articulating the journal's processes helps our work go more smoothly. And I've already mentioned how her frank questioning of some of our early ideas, especially the idea of the Emerging Scholars forum, helped set the journal's direction.

The University of Nebraska at Omaha also offers similar journal support through internship credits. Krystal Gabel, an English master's student and UNO associate editor, has worked with the journal for the past year. Krystal participates in the copyediting and production aspects of the editorial and mentoring process, marking up manuscripts for production, drafting responses to authors, and preparing pages for publication. Through its graduate certificate program in technical communication and its five-course sequence, UNO does offer master's students insight into the field of technical communication, but it does not fully engage students as future scholars. Working on the journal affords Krystal, and students before and after her, to engage the field through its scholarship. Mentoring activities in this relationship occur mostly in the act of copyediting practice as Tracy and Krystal discuss and debate meaning for each sentence and for the field and its scholarship. And it is through this work that Krystal has developed an interest in applying to PhD programs in Technical Communication.

The Online Venue

The fact that *Programmatic Perspectives* is an online journal affords another exigency for mutual mentoring. Although academia is becoming more accepting of online publications, there are still many pockets of resistance and suspicion. However, CPTSC does not have the financial resources to fund a printed journal, and CPTSC members are accustomed to a very low annual membership fee that supports a "no-frills" organization. Thus, electronic publishing is the way to go, and the journal would not exist were this not an option.

At the same time, the world of online publication is an interesting one, filled with questions and opportunities. So despite the risks inherent in publishing an exclusively online journal, we accommodate this transitional time frame by publishing the journal in PDF format, so that its pages

replicate as much as possible the look and feel of the standard academic journal. Like our more established counterparts, we have a double-blind peer review process.

Eventually, we hope to offer more interactive features. Already, a discussion space is linked to each article, with the intent of encouraging follow-up interaction. Although little used as yet, over the next few years, such interactivity may well be not only available and widely used but also even essential for our disciplinary community, serving functions similar to those served today by e-mail lists. Mutual mentoring among the members of the community—not to mention some kind of exigency—will be necessary to launch these interactive spaces; this cannot be achieved by mandate. Until people see a need for it, fully interactive online spaces will remain underutilized.

In the meantime, we strive, through our actions and expressed attitudes toward e-publishing, to mentor those who are skeptical about the validity and rigor of online publication, including the authors who choose to publish in *Programmatic Perspectives* as well as the reviewers, department chairs, tenure and promotion committees, and other colleagues in the academic community at large. At the same time, we seek to be mentored by other editors who have more online experience. The field of computers and writing is home to two such models. The journal *Kairos* has been publishing online in native hypertext for more than 10 years.[1] This journal provides a high-quality model for other aspiring interactive, peer reviewed scholarly journals. Similarly, the online book series edited by Cynthia Selfe and Gail Hawisher[2] affords a vision of what *the book* might look like without the limitations of paper. We have much to learn from these models that represent the present and future of e-publishing

Aside from *Writing Program Administration,* the WPA journal, very little scholarly work about—or interest in—the topic of academic program administration has been manifested in the rhetoric-related disciplines. We believe that a mutual mentoring approach is an effective way to develop our community's sense of the importance of program administration work as a scholarly endeavor in its own right.

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In Memory of Vickie Mikelonis

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The first meeting I had as a graduate student at the University of Minnesota was with my newly appointed advisor, Vickie Mikelonis. I remember her office well (shelves overflowing with books, knickknacks from Eastern European countries, pictures of Tony and Ted), and her uncanny ability to find anything in the numerous stacks within seconds. In class, she would literally bounce in carrying about 5–6 heavy binders, ready to go with at least twice as much energy as any of us had. One day we had to change rooms, and she grabbed those binders and moved so quickly to the new place that she had been sitting for five minutes before we finally came tripping through the door. She just winked at us and then continued class discussion.

Her energy and love for students and work was amazing and having the opportunity to share the classroom with her from 1999–2005 was inspiring. Our team teaching began when I misunderstood her suggestion that I come to her Grant Writing class back in 1999. She later confessed that she only meant I should come to one class session, but at the time I heard, "Come to class, and maybe you will get to come to Ukraine with us." So I started coming to every class that semester. She also told me later that it surprised her so much that she figured she might as well put me to work. My class observation quickly became team teaching because she simply wouldn't let me sit there, but kept drawing me into class discussions and activities, and after a while, into the planning as well. If I close my eyes, I can still see the sparkle in her eyes as she watched students engage (and struggle a bit) then transform and share their new understanding with the class. One of the last classes she taught was a small undergraduate academic writing class. I can still hear the glee in her voice when she told me about how the students really got it, and they were able to move from writing as intuitive to writing as conscious understanding of the structures they were using.

This energy not only came out in the classroom but also from her love for Eastern Europe and extensive work on United States Agency for Interna-

Programmatic Perspectives, *1*(2), September 2009: 217–219. Contact author: ‹cka@asb.dk›.

tional Development (USAID) projects. She not only taught grant-seeking but also lived it. I remember the day she bounced into the office with a sparkle in her eye, saying $20 million in 20 years! She had just helped write a grant that helped universities in Ukraine adjust to the switch from a command to a market economy. She had previously worked on environmental projects in Eastern Europe during the 1990s and was fascinated by the cultural changes she observed during that time. I think by the time she finished her grant writing career, she had brought in $30 million for environmental and academic projects in Eastern Europe.

Vickie Mikelonis

Her affinity for Eastern Europe came from her Polish roots. She once told me about her Polish-speaking grandmother and thought that maybe the language came so easily to her because she had heard it as a child. She was a fabulous cook and often filled her kitchen table with pierogi and other Polish delicacies. She joked that her boys, Tony and Ted, whom she adopted from India, were Polish on the inside because they preferred Polish cooking to Indian food. These boys were her passion outside school, and she often said, in some ways, her greatest teachers. Each boy had his own challenges; she savored the differences that made each of them special and learned about overcoming challenges from their experiences as well as her own. She was a single mother and loved those boys as much as any two parents could have done together.

Culture was one of her passions, not just looking at the abstraction of it from a theoretical perspective, but living it. She advised many international students, two of which I remember her admiring, Marianna Mendez, first as a master's then a PhD student from Venezuela, and Gertrude Hewpathirana, a master's student from Sri Lanka. She really listened to them and did everything she could to help them bridge the cultural gaps between their academic experiences at home and the academic culture in the department. She appreciated their struggles and understood them with an open mind, identifying and working with them to overcome the cultural biases built into the assessment of academic writing.

Mentoring was another passion that she had, and it led me from not only sharing her classroom but also her writing space—a cozy porch heated by a wood-burning stove in the winter. During the two years that we wrote *Grant Seeking in an Electronic Age*, we, along with Signe Betsinger, would sit and write in the evenings, mixing writing, stoking the fire, and drinking tea together. Her amazing energy showed through here as well. I

remember one night we had been writing and I looked up at the clock and remember saying, "Please don't tell me it is 10 minutes before 1:00 a.m." And with the customary twinkle in her eye, she said no. It was actually five minutes to 1:00 a.m.; the clock was a little slow. The next time we sat down to write, she told me she had worked until 3:00 a.m., and then woke up at 6:30 a.m. to drive the boys to school.

Nothing stopped her from giving all she had, not even cancer. During my last semester, while I was pulling together my dissertation, she slipped and fell on the ice in February. When the doctors realized that she had broken the strongest bone in her body, they also discovered that she had bone cancer. That semester, as she went through chemotherapy, and struggled with side effects like diabetes, she still had me come visit and bring my work for her to review and give formative feedback. I would work on giving feedback to her master's students, as she would work on giving me feedback. At times when she felt better, she would insist we all go out for dinner together afterwards. Her generosity of spirit, even in the toughest of times, was amazing.

To me, Vickie will always be one of the heroes of the discipline. During the last part of her career, she tended to stay at home for her boys, consequently was less active on the conference circuit, and therefore out of the spotlight. Many of her publications were not in English, and not necessarily recognized in our discipline. Yet she continued to work on developing materials and books for people in Eastern Europe, founding the Consortium for Enhancement of Ukrainian Management Education (CEUME), an organization in Ukraine designed to help academics adapt to an education system supporting a market, rather than a command economy. She was one of the most creative people I have ever encountered, creating the bachelor's of Applied Business Program at the University of Minnesota, conceiving interesting projects in Eastern Europe that USAID found worth sponsoring, and listening to the cultural differences the international students encountered to help them create cultural bridges. The source of her creativity was deep listening and a problem-solving attitude. The fruit of her creativity still lives on, influencing the minds and perspectives of students.

David Morgan Memorial

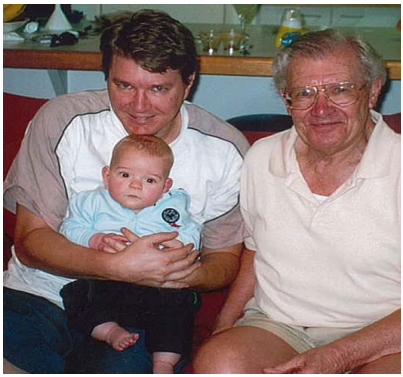
TyAnna Harrington
Georgia Institute of Technology

I've always thought that CPTSC is an outstanding organization, as much for the spirit of its membership as for its organizational content, and David Morgan's contributions to this characterization as a member only strengthened my opinion. I met David at the CPTSC annual conference in Utah in 2005. I learned that he had traveled to the United States from Australia, a 19-hour flight, landing only the day before, and arrived at the not-easily-accessible town of Logan, Utah, after a day's road trip across the country. I characterize the drive as a road trip because David told me about the stops he made to sightsee along the way and take in as much of the country as possible during his visit. Even after his trip to Logan, piggybacked from the long flight to the US, David was eager to join in an impromptu dinner after the first night's evening reception and keynote address. While at dinner, others mentioned their fatigue after traveling from in-country locations. David, with neither a yawn nor hint of irony, asked where we'd make our next stop on our night on the town. The next day, as we talked more, I learned that David had just retired (at the age of 77) and had become interested in technical communication as a post-retirement venture in which he was developing a unique communication manual to be used in workplace settings. I knew then that this was a man who never stopped seeing, learning, or interacting with people and places and appreciated all the opportunities that travel, interaction, and communication had to offer.

For many years, David and I kept in touch by mail—snail mail, in fact. David, undaunted by my dependence on email, waited patiently for replies to his letters, full of interesting details about his life, and that of his sons, John and Stephen, his daughter, Gwyn, and, later, his grandson, Alex. Stephen observes that David "revelled in his children's lives. He lived his own later life somewhat vicariously, and it brought him great joy to see his children involved in things that they loved rather than simply what paid the bills."

Programmatic Perspectives, *1*(2), September 2009: 220–223. Contact author: ‹tyanna.herrington@lcc.gatech.edu›.

David's letters were also brimming with earnest assessment of our United States political policy and the failure of our politicians (2005–2008). David was directly, unapologetically engaged with the people and beliefs he encountered and made the effort to deepen his consideration of ideas, squeezing as much out of intellectual interchange as he did from the land, history, and culture of a country during his travels.



David Morgan with son, Stephen, and grandson, Alex.

Four years after our first meeting, good fortune led me to teach in Australia in spring 2008, and by chance, in Brisbane, near David's home. This proximity allowed us to meet and spend the day walking the town. After we enjoyed trading news, only a few days before my return to the United States, we discussed how I should spend the rest of my time in Australia. David not only had plenty of suggestions but also called the next day to make sure that I had arranged to make the most of my time while in Australia, insistent that I should take advantage of my trip to his country as he had to ours. It might be David's enthusiasm and drive that I miss the most.

As much as we are diminished by David's passing, we continue to be enhanced by his spirit as individuals who had the privilege to know him and as an organization that expanded not only in international reach but also more importantly in heart.

I cannot express as well what Stephen conveyed, reflecting the same force of humor and good nature that characterized his father:

Letter from Stephen Morgan's to TyAnna

David Morgan was born on 28 September 1928 in Invercargill, the southern most town in New Zealand. If you have a look you can see it… lower, lower, a little bit lower… there. He was the older of two boys, his brother Keith arriving a couple of years later.

His father Llewellyn (the Welsh influence is strong, with links to the Tredegar Morgans) worked in a variety of jobs as Pa grew up. Although the Depression didn't hit New Zealand the way it hit the United States, that's because the Kiwis started from a lower level, and the family moved wherever the work was to be found. But there was at least always a family car—because Llewellyn was often employed selling them. And mother Doris was a fastidious homemaker, in the days when fastidious was a word and not an answer on Jeopardy.

There seems to have been little of note from his childhood that would distinguish it from that of any child of the 1930s. And the war had little real effect either… Llewellyn was too old for service, and Japan was already adequately supplied with earthquakes and obnoxious neighbours to be too concerned with conquering the shaky isles.

A good student, Pa went through school with colours regularly flown above half-mast and was accepted to the prestigious Victoria University in windy Wellington, where he received a master's degree in English. He also became heavily involved in his new found Catholic faith, and after finishing university, he headed to mother England with the view to studying in a seminary and perhaps becoming a priest… an affliction his children are grateful he overcame!

On returning to New Zealand, he became a fashionable man about town; his travel experiences, a pipe and a sadly archetypal open-topped sports car topped off the package… and many hearts were broken when he announced his engagement to a delicate flower from the provinces.

Marriage ensued, and the family moved to Australia, first in Sydney and then in 1965, husband, wife and two young children headed to Canberra—the bush capital (and in those days it certainly deserved that name!).

Throughout all of his life Pa had exhibited dangerous symptoms of Anglophilia, and after a short stint back in the mid 70s, and following the breakdown of his marriage he returned to Wales in 1979 with sons John and Stephen, although this meant leaving daughter Gwyn behind, which did affect him deeply.

With no parental reinforcements, the tribulations of Thatcherite Britain and two sons heavily into "godless heavy metal music" it is no surprise that he grew up and discovered that the real world offered considerably more challenges than he had imagined. The Welsh experiment was a failure in some ways, but the affinity that he and the boys felt for the land is still there… and it was an easy choice that some part of him be taken back to reside there.

On his return to Australia, he continued his teaching and became involved in a dangerous cult of technical communicators based in America. He was continually kidnapped and taken back to the States, where he would be thrust into a car and forced to drive to places with historical interest only to the most esoteric, and involve himself in conferences laced with chilli-eating rituals and obeisance to obscure country and western music. And my word did he love it. Photographs exist of every part of every trip—when pictorial evidence of motel forecourts, standard model rental cars and United Airlines 727s finally become as valuable as they should be—there's a fortune to be made!!

Pa also revelled in his children's lives. He lived his own later life somewhat vicariously, and it brought him great joy to see his children involved in things that they loved rather than simply what paid the bills. One son was based in London,

the other worked around the world, and his daughter Gwyn based herself in Melbourne… so there was always a bed and a welcome to be had somewhere on the planet.

Having spent most of his Australian life in Canberra, he moved to Brisbane to be near his most established (and only reproducing) child. The weather never suited him that much, and he knew few people… but he buried himself in his own world, visited Stephen and wife Jo regularly… and was never seen happier than when he was presented with a grandson, Alex.

He kept active and healthy… and when he was suddenly and mortally struck down it seemed vaguely unjust. But he went with dignity, he went surrounded by his family and smothered with love… and he left us all a legacy of simple decency in a world that often doesn't even recognise it, let alone value it.

We're all a little less for the loss… and a whole lot more for having the chance to know him and love him.

There's a story he loved to tell about his fastidious nature; he had finally been allowed to walk home from school by himself. He had learnt all the landmarks and studied the route, and at the first opportunity made it without a problem and proudly presented himself to his mother… at 10:45a.m., during the first school break!!

David Morgan left the world that same way… inevitably to the right destination, but just a little too early.

Call for Proposals

Special Issue

Open Source Software and Technical Communication: Global Implications and Local Practices

The Journal of Technical Writing and Communication is soliciting article proposals for an upcoming special issue that will examine how open source software (OSS) is affecting technical communication processes and practices on local and international levels. This special issue will be published in the spring of 2011, and the guest editors are Kirk St. Amant of East Carolina University and Brian Ballentine of West Virginia University.

Special Issue Description

Software is a vital tool that is a central factor guiding the global information economy. Within this international context, open source software (OSS) is increasingly becoming a tool for consideration—if not a tool of choice—for many technical and professional communication practices and processes. The open nature of OSS development and the community-oriented approach to providing OSS support present new situations for organizations and individuals interested in using OSS products. Technical and professional communicators can benefit from an effective understanding of OSS and its uses. Moreover, the growing international use and diffusion of OSS for a variety of communication and technical tasks means an effective understanding of OSS can be key to professional success in today's global workplace. This special issue of the *Journal of Technical Writing and Communication* will examine what OSS is, how it is developed, how it is used, how it is supported (both technically and financially), and what OSS products populate the current global marketplace.

Possible Topics for this Special Issue

The guest editors invite proposals for papers on applied research or theory, case histories/studies, commentaries, teaching approaches, and/or annotated bibliographies that address the following issues:

- How are open source software and open source community practices changing the field of technical communication? How are they making the community and its practices more international in nature?

- What does the increased use of OSS in international outsourcing/offshoring practices mean for current and future practices in technical and professional communication?
- How will OSS use in industry and academia affect the nature of technical communication education? How will OSS affect conventional (face-to-face) and online approaches to technical communication education? How might it facilitate or lead to the internationalization of educational programs in technical communication?
- What legal and ethical issues—including copyright, licensing, and liability—need to be addressed when considering and using OSS products? How do OSS development and user support practices make these legal issues a matter of global concern, and what steps can be taken to address such international legal factors?
- Do technical communicators need a skill set upgrade to operate effectively in OSS environments? How do they get that upgrade? Or, do technical communicators need something more than what can be gained via conventional training?
- Does the use of OSS mean technical communicators and their employing organizations need to reevaluate their ideologies, especially in relation to concepts of shared work and ownership? How does operating in international contexts complicate this issue?
- How should technical communication instructors address OSS in the classroom? Should they be teaching OSS apps alongside proprietary apps or even in place of them? How do we justify doing so when many graduates of technical communication programs will be required to be proficient with proprietary apps?
- What OSS tools are in use in the field of technical communication on a local and a global level? In the various international industries in which technical communicators work? How well do they work? What are best local and international practices related to using OSS for technical communication tasks or for providing support for users?
- What can technical communicators bring to the international OSS community? There is a lot of documentation to write—is it being done? How effectively? What avenues are available for those interested in getting involved?

Submission Guidelines

Proposals should be no more than 500 words in length. All proposals should include submitter name, affiliation, and email address as well as a working title for the proposed article.

Production Schedule

The schedule for the special issue is as follows:
September 28, 2009—500-word proposals due
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Contact Information

Completed proposals or questions about either proposal topics or this special issue should be sent to Kirk St. Amant and Brian Ballentine at ‹jtwc.oss@gmail.com›.

(Re)mediating the Conversation

Undergraduate Scholars in Writing and Rhetoric

Special Issue
Summer 2011

Kairos: A Journal of Rhetoric, Technology, and Pedagogy
‹*http://kairos.technorhetoric.net*›

Shannon Carter, Texas A&M-Commerce
Bump Halbritter, Michigan State University
Guest Editors

Summary

We propose a special issue devoted to digital scholarship composed by undergraduates. We know a lot of exciting work is being done in this area, and we wish to provide a venue for these important multimodal texts. Moreover, this special issue will celebrate the collaborative nature of student scholarship generated within the context of instruction. Thus, we invite significant contributions from the student author's collaborating instructor.

Call for Webtexts

For years, the print-based, peer-reviewed journal *Young Scholars in Writing: Undergraduate Scholars in Writing and Rhetoric (YSW)* has been publishing top-notch scholarship created by the country's undergraduates. For undergraduates creating multimodal scholarship on the subject, however, no such dedicated venue yet exists.

Until now.

With the 2011 special issue of *Kairos* tentatively entitled *(Re)mediating the Conversation: Undergraduate Scholars in Writing and Rhetoric*, we will bring together digital scholarship produced by undergraduates composing with new media. We know such work is plentiful. We've seen it—at campus-wide celebrations, at area conferences, in our classrooms, in your classrooms. We've found it in in-house publishing venues resulting in local circulation and even nationally, published alongside some of the most established scholars in our field. Circulation like this is important. It is how

such work gets started, celebrated, mined, and seeded into new classrooms, programs, and approaches to composition. Given this important work, the time is right to bring these exciting projects together, highlighting the fabulous work that's possible amongst our undergraduates working with new media.

> In other words, this special issue invites undergraduates and their instructors to join the scholarly conversation in writing, rhetoric, and literacy studies through their own digital contributions.

The subject of this multimodal work will address rhetoric, technology, pedagogy, and writing studies—the same scope published in the recurring issues of *Kairos*. The limits of what counts as scholarship will be drawn no more tightly than they are around *Kairos* submissions more generally. We want to publish projects that are intellectually rigorous, engaging, and important. Due to our experiences in working with multimediated texts, we come to this collection with some expectations for what such scholarship looks and sounds like; however, we remain open to submissions that challenge these preconceptions as well. We are hopeful that these submissions will expand the field's understandings of "digital scholarship" and "writing instruction"—both in content and in form. We are also hopeful that this issue will promote further integration of new media in the undergraduate curriculum by sharing exemplar examples of student work and offering the tools for instructors interested in assigning and supporting this kind of work.

(Re)mediating the Conversation: Undergraduate Scholars in Writing and Rhetoric is calling for submissions that will make use of four sections of *Kairos*—Topoi, Inventio, Praxis, and Reviews. The primary difference between Topoi/Praxis and Praxis/Inventio submissions is how tightly the topic of the student text adheres to the topics of rhetoric, pedagogy, technology, writing, new media, and other topics *Kairos* typically publishes. Student texts that fall outside of usual *Kairos* topics should include a student-authored **Inventio** component. See below for further descriptions.

1) **Topoi/Praxis submissions:** collaboratively-authored webtext comprised of the following two subsections: (a) student-authored **Topoi** webtexts on issues **tightly related** to rhetoric, pedagogy, technology, writing, new media, and other topics *Kairos* typically publishes, and (b) a teacher-authored **Praxis** webtext that situates the student's work within the pedagogical aims of the assignment that invited the student's work. Student-authored **Topoi** texts should be mediated as appropriate, and may include, but are not limited to, any combination of text, hypertext, images, digital video, and/or sound.

Instructor-authored **Praxis** texts should articulate the instructional context that shaped the text (assignment, course, learning objectives, revision/feedback structure, institutional infrastructure). In other words, the instructor-generated Praxis text should complement the student Topoi submission by providing the context from which the multimodal project emerged, but the undergraduates remain the stars of this feature so the Praxis texts needn't be more significant than a description of the assignment itself and a brief discussion of other relevant contexts.

2) **Praxis/Inventio submissions:** collaboratively-authored webtext comprised of the following three subsections: (a) a student-authored, multimedia text of **any** topic or genre (in other words, texts **not tightly related** to topics *Kairos* typically publishes), (b) a teacher-authored Praxis webtext that situates the student's work within the pedagogical aims of the assignment that invited the student's work, and (c) a student-authored *Inventio* webtext that discusses the rhetorical decisions, contexts, influences, and material resources that directed the production of the multimedia work the student submits.
3) **Reviews**: In addition to the above multimodal contributions, we invite reviews (by students or by whole classes) of student-produced work that is circulating in or outside of the academy.

Collaborations among groups of student authors are encouraged on all submissions. For more information regarding these four sections and the kinds of submissions they usually attract, please see ‹http://kairos.technorhetoric.net/submissions.html#sections›. All media included in these submissions must be cited and used fairly. Please see *Kairos*' copyright policy (‹http://kairos.technorhetoric.net/submissions.html#copy›). If you have any concerns about copyright or which section to submit to, please contact the guest editors. We welcome any chance to help potential authors work through these issues.

Instructors and the student authors with whom they are collaborating are encouraged to contact the special issue editorial staff early in their project's development.

All authors accepted to the issue will be invited to submit Disputatio texts in response to the work of their special-issue peers for possible publication in a subsequent issue of *Kairos*.

Proposal Guidelines

Proposals should come from students and be submitted in a single word-processing document and emailed to the two guest editors below. The proposal should include

- Author name(s) and full contact information.
- Section for which the proposal should be considered (*Topoi/*

Praxis, Praxis/Inventio, or *Reviews*). If you are unsure, just ask! We'll be happy to help you find the best place for this submission. See *Kairos*' submission information with section descriptions here: ‹http://kairos.technorhetoric.net/submissions.html›.

- Instructor's name and full contact information.
- Instructor's brief description of the context, assignment, and/or course from which the proposed project emerged/will emerge. (If this is unavailable, student may submit a note stating that he/she was an undergraduate when he/she first composed this piece.)
- One-page description of the project you wish to develop for this special issue, including information about how far you are in the process and what you will need to develop the project you propose.

You are welcome to include a prototype (i.e., sample URL, screenshots, audio or video excerpt, etc.) to accompany your description. We cannot accept attachments over two megs via email. If your submission is larger than that, email us at least a week prior to the submission deadline so we can suggest alternative modes of delivery. Prototypes are not required, however, so please don't feel you must be that far along with a project to consider submitting it. A written proposal is all that is required. **Deadline for proposal submission is October 1, 2009.**

Email submissions as attachments to guest editors at:

Shannon Carter, ‹Shannon_Carter@tamu-commerce.edu›
Bump Halbritter, ‹drbump@msu.edu›

Timeline

October 1, 2009	Proposals due
November 15, 2009	Authors notified of proposal acceptance
February 1, 2010	Full webtexts due
June 2010	Authors notified of webtext status
August 1, 2010	Revised webtexts due
May 15, 2011	Publication date

Call for Proposals

23rd Annual Research Network Forum at CCCC

Wednesday, March 17, 2010
Kentucky International Convention Center & Marriott
Louisville, KY

‹**http://www.rnfonline.com**›
Questions? ‹*chairs@rnfonine.com*›

Deadline: Saturday, October 31, 2009

The Research Network Forum was founded in 1987 as a pre-convention workshop at CCCC. The RNF is an opportunity for published researchers, new researchers, and graduate students to discuss their current research projects and receive responses from new and senior researchers. The forum is free to CCCC convention participants. You need not be a work-in-progress presenter to attend.

As in last year's RNF, the 2010 RNF will begin with a morning plenary session featuring leading scholars in the field of composition/rhetoric.

At the subsequent dialogic roundtable discussions, held in the morning and afternoon sessions, Work-in-Progress Presenters discuss their current projects and gain the responses of other researchers, including the discussion leaders. Rather than present a formal conference paper, Work-in-Progress Presenters are grouped by thematic clusters, in which they will discuss their projects with other researchers and a discussion leader, who is a senior researcher, in an eight-minute writers' workshop presentation. Work-in-Progress Presenters should bring 3-5 typed questions which they should copy and distribute to participants at their tables (15 copies for the two sessions will do; participants present in both the morning and afternoon sessions). Multimedia equipment will NOT be available for Work-in-Progress Presenters to use.

The afternoon session will start with the Editors' Roundtable. Participants also include editors of printed and electronic journals of composition/rhetoric who will discuss publishing opportunities of completed works-in-progress. We encourage participants to bring a copy of the journals they edit/publish, any other publications, and announcements,

which will be displayed at the RNF meeting and highlighted at the Editors' Roundtable.

Please join us in **Louisville** on **Wednesday, March 17, 2010**, to **present a Work-in-Progress** presentation or **serve as a Discussion Leader** (for those who are seasoned, established researchers) and/or **Editor** (for those who edit journals/presses). Electronic proposal forms will be available at ‹http://www.rnfonline.com/blog›. **Deadline: October 31, 2009.**

You may appear on the *RNF Program* in addition to having a speaking role at the Conference on College Composition & Communication. **Questions:** contact ‹chairs@rnfonline.com›.

Colloquium on Modern Rhetoric

October 22–24, 2009 in Minneapolis, the faculty in the Departments of Writing Studies and of Communication at the UM–Duluth campus will sponsor a colloquium on Modern Rhetoric. There is no fee for attendance. Information, including a schedule, will be available at ‹http://www.ias.umn.edu/collabs09-10/ModernRhetoric.php› as the date draws more near; questions can be emailed to ‹dbeard@d.umn.edu›

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> In other words, this special issue invites undergraduates and their instructors to join the scholarly conversation in writing, rhetoric, and literacy studies through their own digital contributions.

The subject of this multimodal work will address rhetoric, technology, pedagogy, and writing studies—the same scope published in the recurring issues of *Kairos*. The limits of what counts as scholarship will be drawn no more tightly than they are around *Kairos* submissions more generally. We want to publish projects that are intellectually rigorous, engaging, and important. Due to our experiences in working with multimediated texts, we come to this collection with some expectations for what such scholarship looks and sounds like; however, we remain open to submissions that challenge these preconceptions as well. We are hopeful that these submissions will expand the field's understandings of "digital scholarship" and "writing instruction"—both in content and in form. We are also hopeful that this issue will promote further integration of new media in the undergraduate curriculum by sharing exemplar examples of student work and offering the tools for instructors interested in assigning and supporting this kind of work.

(Re)mediating the Conversation: Undergraduate Scholars in Writing and Rhetoric is calling for submissions that will make use of four sections of *Kairos*—Topoi, Inventio, Praxis, and Reviews. The primary difference between Topoi/Praxis and Praxis/Inventio submissions is how tightly the topic of the student text adheres to the topics of rhetoric, pedagogy, technology, writing, new media, and other topics *Kairos* typically publishes. Student texts that fall outside of usual *Kairos* topics should include a student-authored **Inventio** component. See below for further descriptions.

1) **Topoi/Praxis submissions:** collaboratively-authored webtext comprised of the following two subsections: (a) student-authored **Topoi** webtexts on issues **tightly related** to rhetoric, pedagogy, technology, writing, new media, and other topics *Kairos* typically publishes, and (b) a teacher-authored **Praxis** webtext that situates the student's work within the pedagogical aims of the assignment that invited the student's work. Student-authored **Topoi** texts should be mediated as appropriate, and may include, but are not limited to, any combination of text, hypertext, images, digital video, and/or sound.

Instructor-authored **Praxis** texts should articulate the instructional context that shaped the text (assignment, course, learning objectives, revision/feedback structure, institutional infrastructure). In other words, the instructor-generated Praxis text should complement the student Topoi submission by providing the context from which the multimodal project emerged, but the undergraduates remain the stars of this feature so the Praxis texts needn't be more significant than a description of the assignment itself and a brief discussion of other relevant contexts.

2) **Praxis/Inventio submissions:** collaboratively-authored webtext comprised of the following three subsections: (a) a student-authored, multimedia text of **any** topic or genre (in other words, texts **not tightly related** to topics *Kairos* typically publishes), (b) a teacher-authored Praxis webtext that situates the student's work within the pedagogical aims of the assignment that invited the student's work, and (c) a student-authored *Inventio* webtext that discusses the rhetorical decisions, contexts, influences, and material resources that directed the production of the multimedia work the student submits.
3) **Reviews**: In addition to the above multimodal contributions, we invite reviews (by students or by whole classes) of student-produced work that is circulating in or outside of the academy.

Collaborations among groups of student authors are encouraged on all submissions. For more information regarding these four sections and the kinds of submissions they usually attract, please see ‹http://kairos.technorhetoric.net/submissions.html#sections›. All media included in these submissions must be cited and used fairly. Please see *Kairos*' copyright policy (‹http://kairos.technorhetoric.net/submissions.html#copy›). If you have any concerns about copyright or which section to submit to, please contact the guest editors. We welcome any chance to help potential authors work through these issues.

Instructors and the student authors with whom they are collaborating are encouraged to contact the special issue editorial staff early in their project's development.

All authors accepted to the issue will be invited to submit Disputatio texts in response to the work of their special-issue peers for possible publication in a subsequent issue of *Kairos*.

Proposal Guidelines

Proposals should come from students and be submitted in a single word-processing document and emailed to the two guest editors below. The proposal should include

- Author name(s) and full contact information.
- Section for which the proposal should be considered (*Topoi/*

Praxis, Praxis/Inventio, or *Reviews*). If you are unsure, just ask! We'll be happy to help you find the best place for this submission. See *Kairos*' submission information with section descriptions here: ‹http://kairos.technorhetoric.net/submissions.html›.

- Instructor's name and full contact information.
- Instructor's brief description of the context, assignment, and/or course from which the proposed project emerged/will emerge. (If this is unavailable, student may submit a note stating that he/she was an undergraduate when he/she first composed this piece.)
- One-page description of the project you wish to develop for this special issue, including information about how far you are in the process and what you will need to develop the project you propose.

You are welcome to include a prototype (i.e., sample URL, screenshots, audio or video excerpt, etc.) to accompany your description. We cannot accept attachments over two megs via email. If your submission is larger than that, email us at least a week prior to the submission deadline so we can suggest alternative modes of delivery. Prototypes are not required, however, so please don't feel you must be that far along with a project to consider submitting it. A written proposal is all that is required. **Deadline for proposal submission is October 1, 2009.**

Email submissions as attachments to guest editors at:

Shannon Carter, ‹Shannon_Carter@tamu-commerce.edu›
Bump Halbritter, ‹drbump@msu.edu›

Timeline

October 1, 2009	Proposals due
November 15, 2009	Authors notified of proposal acceptance
February 1, 2010	Full webtexts due
June 2010	Authors notified of webtext status
August 1, 2010	Revised webtexts due
May 15, 2011	Publication date

Call for Proposals

23rd Annual Research Network Forum at CCCC

Wednesday, March 17, 2010
Kentucky International Convention Center & Marriott
Louisville, KY

‹**http://www.rnfonline.com**›
Questions? ‹*chairs@rnfonine.com*›

Deadline: Saturday, October 31, 2009

The Research Network Forum was founded in 1987 as a pre-convention workshop at CCCC. The RNF is an opportunity for published researchers, new researchers, and graduate students to discuss their current research projects and receive responses from new and senior researchers. The forum is free to CCCC convention participants. You need not be a work-in-progress presenter to attend.

As in last year's RNF, the 2010 RNF will begin with a morning plenary session featuring leading scholars in the field of composition/rhetoric.

At the subsequent dialogic roundtable discussions, held in the morning and afternoon sessions, Work-in-Progress Presenters discuss their current projects and gain the responses of other researchers, including the discussion leaders. Rather than present a formal conference paper, Work-in-Progress Presenters are grouped by thematic clusters, in which they will discuss their projects with other researchers and a discussion leader, who is a senior researcher, in an eight-minute writers' workshop presentation. Work-in-Progress Presenters should bring 3-5 typed questions which they should copy and distribute to participants at their tables (15 copies for the two sessions will do; participants present in both the morning and afternoon sessions). Multimedia equipment will NOT be available for Work-in-Progress Presenters to use.

The afternoon session will start with the Editors' Roundtable. Participants also include editors of printed and electronic journals of composition/rhetoric who will discuss publishing opportunities of completed works-in-progress. We encourage participants to bring a copy of the journals they edit/publish, any other publications, and announcements,

which will be displayed at the RNF meeting and highlighted at the Editors' Roundtable.

Please join us in **Louisville** on **Wednesday, March 17, 2010**, to **present a Work-in-Progress** presentation or **serve as a Discussion Leader** (for those who are seasoned, established researchers) and/or **Editor** (for those who edit journals/presses). Electronic proposal forms will be available at ‹http://www.rnfonline.com/blog›. **Deadline: October 31, 2009.**

You may appear on the *RNF Program* in addition to having a speaking role at the Conference on College Composition & Communication. **Questions:** contact ‹chairs@rnfonline.com›.

Colloquium on Modern Rhetoric

October 22–24, 2009 in Minneapolis, the faculty in the Departments of Writing Studies and of Communication at the UM–Duluth campus will sponsor a colloquium on Modern Rhetoric. There is no fee for attendance. Information, including a schedule, will be available at ‹http://www.ias.umn.edu/collabs09-10/ModernRhetoric.php› as the date draws more near; questions can be emailed to ‹dbeard@d.umn.edu›