Programmatic knowledge management: technology, literacy, and access in 21st-century writing programs

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Programmatic knowledge management: Technology, literacy, and access in 21st-century writing programs

by

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Growing out of research in Technical Communication, Composition Studies, and Writing Program Administration, the articles in this dissertation explicitly seek to address changes in the practices and products of writing and writing studies wrought by the so-called “digital revolution” in communication technology, which has been ongoing in these fields since at least 1982 and the publication of the first Computers and Composition newsletter. After more than three decades of concentrated study, the problems posed by the communication revolution have been brought into clear relief by a succession of scholars, and the complex and semi-coordinated project of remediating ourselves, our discourses, and our disciplines is in many respects well underway. Nevertheless, significant challenges face multimodal pedagogy in the context of Writing Program Administration, challenges that take the form of entrenched conflict regarding the ownership and distribution of personal information and intellectual property. These articles examine problems at the level of the student, the teacher, and the program and argue for a new kind of Writing Program Administrator who uses multiliteracies to rethink how writing programs should produce and practice writing and the teaching of writing in the 21st-century.
When famed media scholar Marshall McLuhan reminded us “the medium is the message” in 1964, the dawn of the Internet Age was still over the horizon. Nevertheless, McLuhan’s arguments about an increasingly global media environment now seem to presage the major technological conflicts of the early part of the 21st-century: conflicts driven largely by and for access to and ownership of intellectual property and personal information, including the technologies that mediate them. This is due to a curious feature of all communication, as McLuhan recognizes, which is that “it is only too typical that the ‘content’ of any medium blinds us to the character of the medium” (8).

McLuhan warned that our failure as a society to really study the media themselves would make these vital cultural resources into “prison[s] without walls,” inasmuch as “a man is not free if he cannot see where he is going” (20). From McLuhan’s time to now, the media landscape has changed a great deal. For much of the period, the Computers and Writing movement has been at the forefront of this change, in the fields of Rhetoric and Composition at least. Yet, when Cynthia Selfe looks back at 17 years of Computers and Writing in a 1999 College Composition and Communication retrospective, she finds that we haven’t paid enough attention to the “social or material conditions” associated with the use of technology, and so she can only echo McLuhan with bitterness, writing that our intentional blindness “allows us to ignore, except for some occasional twinges of conscience” how the “technology in which we invest so readily (and in which we ask
students to invest) contributes to our own tenure and promotion, to our own wallets, and to our own status in the profession and in the public eye” (Selfe 413). Much as McLuhan relates, the very invisibility of technology makes it highly resistant to change, sometimes to truly hideous consequence.

For Selfe, much as for McLuhan, allowing technology to blind us can have other consequences as well. In the context of higher education, Selfe argues, uncritical acceptance of the articulation, or “linkage” (415), of technology and literacy as major cultural formations has led to a situation where composition instructors themselves help perpetuate a system of iniquity. When we do not pay attention to technology, Selfe writes, “we share in the responsibility for sustaining and reproducing an unfair system that . . . enacts social violence and ensures continuing illiteracy under the aegis of education” (415). Selfe’s are the strongest possible terms: violence and illiteracy, and she invokes them deliberately to chide the field to pay attention, and to admonish us for our failure to do so. In the decades since, this has remained a significant discursive concern, and one that has been refined and sharpened over time. In arguing for a more critical pedagogy of multiliteracies in 2002, Douglas Kellner writes for the need for “educators . . . to rethink established curricula and teaching strategies in order to meet the challenge” (Kellner 198) of the digital age. In 2005, Stuart Selber, in advancing a comprehensive model of multiliteracies, claims that writing program administrators themselves are at the crux of the issue because “those who are centrally involved in the change process itself must have the requisite knowledge and skills needed to get the job done” (Selber 226).

Carrie Leverenz takes this even further in 2008, targeting Writing Program Administrators directly when she writes, “common sense tells us that in order to create
new media composing assignments and to help teachers teach them, we have to know how to do that kind of writing and teaching ourselves” and, furthermore, “if the writing teachers and WPAs I know are representative at all, most of us still have a ways to go to become functionally literate in terms of producing texts that go beyond traditional academic writing” (Leverenz 48). Likewise, Jeff Rice also directly addresses writing program administrators’ lack of functional literacies, arguing that writing instructors are forced to use tools “without knowing how the tools work at even the most basic levels” (Rice 95) and so “the WPA must use critique to rethink administration and teaching, so that each encompasses technology not as an afterthought . . . but as a thread interwoven throughout” (102). Clearly, in the years following Selfe’s chastisement we see an increase in awareness of this issue, focusing especially on the personal functional literacies of teachers and writing program administrators themselves, and this trend has continued up until today.

In an important 2009 collection Technological Ecologies and Sustainability, which Sidney L. Dobrin called “one of the most dynamic discussions of ecology to have surfaced” and whose methodologies he argues “should become . . . the primary theoretical lens through which we study and teach writing” (Dobrin 181), Michael Day also addresses the functional literacy of WPAs directly, arguing the administrator should be a “technorhetorician—that is, . . . an administrator who understands and has experience in technology, including the rhetoric of technology, and uses that knowledge for the benefit of as many of the program’s stakeholders as possible” (Day 131). Day’s vision of a technorhetorician administrator, one who can negotiate the complex intersecting concerns at the nexus of technology, culture, and education, relies as a matter of course on acquiring necessary technical literacies and on learning “as much as
possible about available technologies for teaching” (145). Finally, in a 2013 collection on ePortfolios, Beverly D’Angelo and Barry Maid address this issue in terms of the “teaching the tools’ controversy” (D’Angelo and Maid 74) and find in in student evaluations in their program, “Lack of direct instruction in tools or software is the most common negative comment” (80), pointing to how students themselves can recognize lack of literacy as a significant issue. Even this abbreviated survey of our field’s failure to pay attention to technology, or our failure to acquire for ourselves the necessary functional literacies, tells the story, over the years, of a consistent avoidance of our field as whole to remediate itself, that is, to acquire on a large scale an effective understanding of how the teaching and learning of writing must change. As a digital scholar myself, in 2015, I sometimes despair that this will change anytime soon, and at the least I must acknowledge the distinct possibility that it is already too late, that our moment has passed us by, and that the impossible project of true remediation will remain beyond us in the decades to come.

Scholars such as those cited above have suggested a variety of explanations for our field’s continued avoidance of this issue. Of these explanations, a few common threads emerge. These are explanations based primarily in practical, theoretical, and systemic concerns (that is, what we do, how we think about what we do, and what structures we build to continue doing it). Perhaps the most common explanation for our continued lack of technological literacies is the problem of time—WPAs simply don’t have enough time to make the significant investment needed to master new literacies. This has immediate recognition value. Indeed, as Leverenz puts it, “For every webpage I need to update, every multimedia presentation I choose to create, something I used to do will have to go” (47). Day extends the time problem beyond WPAs alone to
encompass compositionists in general, writing that “one of the biggest factors working against technology adoption is the lack of time—teachers are overworked and simply too busy to learn to use new tools” (131). However, when Rice addresses the issue of time, he acknowledges the difficulty of learning new technologies “because of the already overloaded workdays WPAs endure, because of the time restrictions WPAs face” (99), but importantly he notes:

[T]he argument that time prohibits us . . . could just as easily be leveled against other important program administrative issues we have come accept as part of our jobs: assessment, theory, maintaining academic currency, etc. Only technology seems to be dismissed because of time constraints” (104).

Here Rice makes the critical point—lack of time by itself cannot be the only factor, because were that the case, it would have shown up elsewhere. I would further note in other contexts, that to assert “I don’t have time for that” is often to express scorn.

Scorn is perhaps related to the second explanation offered in common by these scholars, which is the theoretical split between the kinds of knowledge we value in academia and the kinds of knowledge necessary to learn how to program with code, or how to use complex software applications. As D’Angelo and Maid explain, as academics “we are concerned with ‘how’ and ‘why’ not with ‘what’ and ‘how to’” (74). Selfe puts it more bluntly, writing

many teachers of English composition feel it [computer technology] antithetical to their primary concerns and many believe it should not be allowed to take up valuable scholarly time or the attention that could be best put to use in teaching or the study of literacy (412 emphasis added).
A decade later, for Leverenz, the issue is crystalized when she writes “for many WPAs, technology can seem to pose a threat to our humanist values” (45 emphasis added). Now the puzzle Rice pointed out with the lack of time argument begins to make a little more sense. It is not only that there is not enough time, it is also that there is a deep-seated ideological opposition to engaging in the kinds of activities that would lead to increases in literacy. The lack of time argument is an outgrowth of the devaluing of the study of machines and how they communicate with one another, and as such it is little more than de facto justification.

The ideological opposition to technology noted by these writers has led to the establishment and maintenance of systemic discouragement in all aspects related to acquisition of technological literacies. Digital publishing and digital dissertations are two examples of practices that should be well supported, but are not. In addition, in a recent article on this systemic discouragement, the authors point out “not all graduate programs equally foreground the role of technology in the composition curriculum or even as part of the rhetorical tradition” (Graupner, Nickoson-Massey, and Blair 13). Leverenz acknowledges this thread more broadly when she writes “If WPAs are going to take responsibility for writing in new ways, as I have argued they should, then this new writing will need to become recognized as intellectual work by the institution and the profession more generally” (48), pointing out that the activities related to the acquisition of functional literacies are not given intellectual value by institutions and professions. This is true both with digital publications, which are seen as less prestigious, and with digital composition, which rarely counts towards tenure, despite the fact that both require significantly more investment in terms of time and expertise than simply writing a 30-page article would. Indeed, to be tenurable, digital scholars
must maintain two distinct bodies of expertise—those that relate to publishing in academic (print) journals and those that relate to publishing digital texts, i.e. “texts” composed primarily of code. Considering that merely maintaining currency with coding literacies is itself a full-time job, this dual burden can be prohibitive, especially when it is not readily understandable by the people who will grant tenure, nor is it generally valued by peers.

By juxtaposing these common explanations for our field’s continuing inability to remediate itself, we reveal the cyclical nature (if we needed another example) of ideological reproduction. In order to maintain humanistic values and our own material advantage threatened by new technology, indeed by the very “scale it introduces into human affairs” (McLuhan 7), the discipline reacts at the institutional and professional level to devalue the work done by technology specialists and to maintain the dominance of the primarily print technology which sustains it. In this effort, the profession is joined by the print industry itself whose bottom lines we support. This tendency is also evident, according to Selfe, in the way we’ve relegated technology specialists to professional isolation ‘in their own separate world’ of computer sessions and computer workshops and computers and writing conferences that many CCCC members consider influenced more by the concerns of ‘engineers, technicians, and technocrats’ than those of humanists. (412)

This is a situation that allows us to have “the best of both worlds” (Selfe 413)—we get to use and benefit from technology in our own work without having to deal with computer issues or problems directly. And so, when the “boring or frightening” (Selfe 412) subject of technology arises, WPAs so far have felt justified in saying “I don’t have the time,” effectively re-inscribing the dominant ideology, re-establishing on the micro-level what
Andrea Lunsford calls the “hegemony of writing” (170), and ensuring the cycle will continue.

It is precisely because of the cyclical and reinforcing nature of ideological reproduction that I believe that our discipline is unlikely to change fast enough to really master the new literacies. Instead, it seems we are likely to remain consumers of digital technologies, rather than become producers ourselves. Such densely articulated ideological formations are difficult to change. Increasingly it seems more prudent for administrators and decision makers to outsource technological support to the corporations that specialize in it, and so there is no real need for actual technological literacy within departmental units. This is the future Jeff Rice envisions in “cooltown,” his name for the generic, corporate educational environment that has merely repackaged print-based and lecture-based materials to sell to a new generation through a new technological gimmick. What cooltown peddles, Rice argues, are merely the “images” of digital learning, rather than authentic and transformative literacy experiences. From this perspective, it seems easy to say, as D’Angelo and Maid do of learning how to use PowerPoint or a blogging software to create an ePortfolio, this might be important for getting a job, “not the kind of skill one gets academic credit for mastering” (D’Angelo and Maid 75). At what point, however, do these two things become distinct? Does knowing how to add and use headings with a text-editor or in HTML not involve to some extent the ability to locate a specific control and select the correct option, which itself depends entirely on the software environment? How does one in practice distinguish between functional and rhetorical literacy when, to an outside observer, the ability to use headings rhetorically must also include the technical knowledge of the interface or code that provides the ability to locate and use the control
that turns text into a heading? What does this say about the actual difference between functional and rhetorical literacies? We must be careful not to forget that even the text produced here in this article was executed at the command of a program, and so my ability to punctuate these sentences correctly relies on a mixture of functional and rhetorical literacies. Indeed, one might argue, the idea that solutions shift as circumstances dictate is a profoundly rhetorical perspective, and so one might say the same of the ability to produce headings in different software environments. Personally, as doing so does not support my own ideological frame, I do not see much value in making a distinction between these kinds of knowledge, and so when my students seek to produce webpages that use headings, I try to supply both rhetorical and technical guidance by teaching when and why writers use headings, but also how to create the effect that the heading seeks to exploit. To do otherwise is to close ourselves off to an entire class of human communication.

The need for such technical literacies has never been more pressing, either, as we can see by looking at just three points of data. First, according to the most recent National Center for Educational Statistics, at the institutional level in 2012, online-only enrollments, that is, the number of enrollments in online-only courses and programs in US institutions of higher education that did not include any physical, in-person experience, comprised over 25% of all enrollments, totaling about 5.5 million students (Ginder). If recent trends have continued, this percentage has grown. Second, as of 2013, according to the decade’s-long record established by the Campus Computing Project, the percentage of all institutions that have adopted ePortfolios in some form has climbed to 55% (or 248 of the more than 400 reporting institutions) (“National”). Third and finally, according to Edutechnica data published in 2014, more than 75% of the
educational technology market is dominated by just a handful of corporate-owned learning and content management systems (Hill). The accelerating growth of online education and digital or electronic portfolios alone, coupled with the complete domination of the industry by capital, should be a red flag for Writing Program Administrators concerned with preserving humanistic values in the face of rampant technological change.

The cooltown future Rice envisions is probably one that some of my readers don’t have the context to properly appreciate. After all, readers might ask, so what if corporations own the virtual educational environments we teach in? So what if they are somewhat generic, somewhat pandering to a bland sensibility? So what if they’ve been packaged in advance and set up by “engineers, technicians and technocrats” (Selfe 483)? Surely the input of actual teachers must be part of the development process? Surely our goals and the goals of the corporate entities that we depend on must overlap to some degree? I would answer: maybe (although this begs the question of the extent to which this is true)—maybe, but we’re missing the point, as Rice explains, that in making this choice, “we have shifted intellectual production to a force other than ourselves” (99). In allowing the engineers, technicians and technocrats to control production, we have created a deterministic role for ourselves so that what we can do depends entirely on what the corporations (or more simplistically, their systems) allow us to do. We’ve closed ourselves off to the very possibilities the technologies offer. And it is not only that we allow others to determine what we can and cannot do with educational technology, it is much worse than that in reality because the practical result of our abdication has been to cede control over all areas related to educational technology use, including ownership of the intellectual work we produce.
In purely financial terms, this abdication of responsibility incurs significant cost. The corporate systems that have come to dominate the educational landscape, such as Blackboard, often carry massive “six-figure fees annually” (Rice 93), fees whose costs are ultimately born by students and the state with monies that could otherwise be used on internal growth. Considering that corporate owned learning management systems comprise over 75% (Hill) of the educational technology market, with open source and homegrown systems making up the remainder, the number of consumer institutions multiplies the licensing fees to arrive at a truly substantial financial figure. But the true cost is even larger, because these corporations do not charge us merely in dollars and cents, but also pad profits by trafficking in our intellectual property and personal data. Corporate-owned systems such as Pearson’s eLearning routinely capture data from users, the so-called learning analytics data it sells to other companies that profit from marketing information. Furthermore, the terms of use of such software packages often infringes on basic ideas of ownership as well, and so the companies profit from our use in another way. To use the example Rice cites, as it is worth reprinting in its entirety, we look to an educational technology corporation’s Terms of Service document and we find:

The McGraw-Hill Companies has the right to use all material entered into these Web pages (other than third-party material transmitted through private electronic mail) in any of The McGraw-Hill Companies’ print or electronic publications. (Rice 102)

In this case, the corporation has laid claim to all the intellectual property of all of its users (except that already owned by others), thus becoming a significant holder of intellectual property at a single stroke, and without paying a penny in return. And it is for these reasons that Rice finds “corporate owned systems like Blackboard complicate
use in unnecessary ways” (93), because it is expedient for corporations to design them that way.

Furthermore, in abdicating this responsibility and ceding control, we’re also preventing ourselves from using the technology in productive ways. So not only are we paying through the nose to use the tools, our inability to remediate ourselves means we are prevented from constructing our own tools that would serve our ends more productively. For example, Rice argues, after acquiring basic knowledge, we can begin the serious work of “hands-on training in how to create and use websites, bulletin boards, weblogs, chat rooms, web portals, and listservs on our own without the need for an outside provider” (104). If we do so, I’d argue, it seems the only possible result that we would find our tools differed significantly from their corporate forbearers simply because they would once again be governed by the circumstances of use, rather than by the calculus of profit. For the WPA, this could also enable the kind of large-scale data-gathering advocated for by proponents of data mining methodologies such as Susan Lang and Craig Behr, who call for answering key questions about writing programs and teaching practices using a method that consists of the collection and management of data, its subsequent analysis, and predictions and more testing based on that analysis (Lang and Baehr 173). In current form, corporate constructed and even teacher-constructed tools do not as a matter of course collect the kinds of data most useful to writing studies, yet there is no technical reason why they can’t be designed for this. It is simply that the people actually doing this kind of work are few and far between.

Unfortunately this discussion doesn’t illuminate much of anything; rather, it darkens. It casts a shadow over our works. It obscures and occludes the possibilities the new technology of communication offers us, and furthermore what understandings it
does provide threaten to taint even our most august projects and call into question our loftiest goals. The picture painted by this description of our field’s engagement with technology of the past three decades is not a pretty one. With few exceptions, we have turned away from technology and what it offers in order to perpetuate a system in which we profit. We’ve done this by denying the need to learn and to teach our students to use new tools. We’ve done it by colluding with state governments, print publishers, and educational technology corporations, and we’ve created a prison for ourselves and our students, a prison made out of the lies we tell ourselves about what we do. The price of this imprisonment is high, as McLuhan warned it would be- for we have mortgaged our tomorrows in order to preserve our yesterdays, and we’ve done so with little thought for those who must come after us, those writing specialists who will grow up in a time when the academy has fallen out of touch with the communication habits of the rest of the world and through failure to adapt, has made themselves irrelevant to the ongoing conversation of humankind; for in the dystopic Burkean parlor I envision, the conversation does go on, it just doesn’t matter anymore to anyone outside the room.

But there must be some cause for hope, even in the grimmest of imagined futures, and we find this cause in the ideal of the technorhetorician administrator imagined by Michael Day and other scholars—an administrator with enough technological literacy to make principled decisions about literacy and technology, and ultimately to determine the direction of our profession. Only one intimately familiar with the affordances of technology can effectively reimagine administration, research, and the very processes of communication from the ground up, with new assumptions about the production of meaning based in the new models of communication. Only those who have mastered the new communication can wield its power. But
technorhetoricians will not just appear to lead our programs, they must be made out of us. Overcoming the lies we tell ourselves about technology and literacy and power will not be easy, but it is necessary to become technorhetoricians and to train a new generation of administrators to come after us. This means we must stop ignoring the ways we devalue technological work and isolate our specialist colleagues. We must stop ignoring that our resistance to technology is grounded in an ideological opposition that serves to cement our own privilege and prestige. We must reject the notion that corporations should determine for us what role technology will play in our lives, and recognize that by giving up control of our learning environments we are also giving up the ability to take control back as we participate in a system that ensures our own continued illiteracy. Rejecting these powerful notions, however, frees us to begin asking the kinds of productive questions that might actually address the major problems we face. When we ask these questions and begin seeking to answer them, when we confront our own ideological opposition, we must acknowledge the potent realization that reading and writing code is the new fundamental literacy of power, and that we are not in fact illiterate at all.

Since Selfe’s stern admonition, disciplinary chiding about technology has become thread that is visible in our discourse: every few years major scholars periodically noting how many of us have still failed to pay attention to some aspect of media or technology, a disciplinary chiding and encouragement all at once, but one that tells the story, over the years, of a consistent avoidance of our field as whole to “remEDIATE itself,” that is, to acquire on a large scale the technological literacies necessary to understands how the teaching and learning of writing must change. Many reasons have been proposed for this. There might be another reason- Adam Banks’s notion of access. Imagine the WPAs
you know, and then imagine the literacy experience of their childhoods. Likely those whose literacy experiences included early computer use are today’s digital scholars, while those who did not encounter computer technology in an experiential way during critical period simply pursued other interests and have become progressively outmoded by the steady screwing of technological evolution, since knowledge of current computers systems depends on knowledge of earlier versions of the technology. Once you’ve become outmoded by more than a few generations (read: 2-3 year cycles), you will find it increasingly difficult to reclaim your mastery.

Even today in 2015, in a prosperous program with a strong multimodal and digital focus, I would echo the same sentiment, for even under arguably optimal conditions, I still identify strongly with the pathetic characters Selfe paints of the technology specialist in the humanities, like those who are relegated to professional isolation ‘in their own separate world’ of computer sessions and computer workshops and computers and writing conferences that many CCCC members consider influenced more by the concerns of ‘engineers, technicians, and technocrats’ than those of humanists. (412) If this is generally true of the humanities as Selfe argues, it is also true of our writing programs as well, as Carrie Leverenz indicates when she writes of “the Digital Divide in Writing Program Administration” (41), using a rhetorical turn of phrase to invoke the specter of technological access and to highlight a continued failure to pay attention to media technologies, even as recently as 2008.

Maid and D’Angelo likewise write of this gap when explaining contention and dispute around the inclusion of a "technology plank" in the WPA outcomes statement revision in the mid-2000s (75), and even leading proponents of multiliteracies, such as
Stuart Selber, call explicitly for technological knowledge and skill in the person of the writing program administrator who is ultimately responsible for the new forms writing has come to take and the new purposes it now serves in institutions of higher education (226). When Leverenz writes “most of us still have a ways to go to become functionally literate in terms of producing texts that go beyond traditional academic writing” (48), her frank admission points to an area that should concern us most profoundly. Perhaps our lack of attention is due, as Selfe explains, because “many teachers of English composition feel it antithetical to their primary concerns” (Selfe 412), or maybe, as D’Angelo and Maid suggest more moderately, because, “As academics . . . We are concerned with ‘how’ and ‘why’ not with ‘what’ and ‘how to’” (74), and perhaps there are other reasons (and less exculpatory ones at that) as well.

But I don’t mean to seem cynical. Many scholars have paid exactly the right kind of attention to media studies in the decades since McLuhan and Selfe, not to discount Leverenz’s points whatsoever, and indeed it would be churlish of me to suggest that I have not benefited in the exact same ways. Being a digital scholar does not mean I am any less implicated (than those reliant on the technology of print) in the complex performance and reproduction of market ideology Selfe writes about. Indeed to the contrary, for today the content and products of commercial communication technologies exemplify the same social model as informs print, which is that human thought, once “‘fixed’ in a tangible medium of expression” (“Title 17”), becomes the intellectual property of its author and can then be exchanged for profit. The axioms of the print industry (and the music industry and the film industry) have been imposed on the nascent digital industry almost since the moment of its conception; indeed, speaking of these as separate industries has become increasingly absurd, considering that more
than 90% of all media concerns in the U.S. are owned by only five massive multinational corporations (corporations that are at least to some extent co-owned). By now, the political and economic trends of globalization, exacerbated by the rise of ubiquitous computing, have produced an environment where media conglomeration and vertical integration enjoy tremendous communicative advantage (McChesney), and so the corporations, governments, and organizations that can benefit most are increasingly leveraging control over everyday life.

It is precisely this state of affairs that has driven the field of Computers and Writing to evolve a complicated and shifting articulation of theories and practices once known loosely as “pedagogies of multiliteracy” (New London Group 60), but what is now perhaps better known as multimodality or digital pedagogy. As the pace of globalization quickens and the rate of technological development accelerates, the conception of multiliteracies as articulated over the decades by media and pedagogy scholars such as Douglass Kellner, by compositionists such as Jody Shipka and Jason Palmieri, and by technical communicators such as Stuart Selber and Tharon Howard, has been strengthened and deepened in response. Despite a shifting articulation, the concept of multiliteracies has maintained an explicit commitment to the democratic potential of technology, and at the same time a critical self-consciousness of the material and social conditions relating to its use, especially in regards to our own complicity in the reproduction of contesting ideologies. Recent social and technological developments, however, are again making the case that writing programs cannot continue to ignore the hard-won lessons about literacy and technology put forward by the technologically-inclined members of our field.
So, while it is true that studies of the material and social conditions of communication technology have achieved legitimacy in writing studies, and so one no longer need justify one’s research interests quite as one used to do, at the same time, on a large scale as a field, we remain separated and so we’ve made no significant progress on the major issues that confront us, failing to address in a systematic way the growth of online education, the proliferation of media forms, or the radical changes to concepts of property and identity that have come as a consequence of new media, nor have we addressed to any satisfaction the enormous challenges posed by the interrelated factors of race, gender, age and class with regard to technological access and literacy—all of which are issues raised by those who came before us and which have become, if anything, more acute.

Knowledge Management Applications in Multimodal Composition

If Writing Program Administrators are to say, as compositionists now do of multimodality, that we have always been knowledge managers, then the limits of knowledge management as it exists now constitute the primary ground that we should begin to explore. Understanding the challenges and barriers to effective knowledge management practices should concern the WPA not only at the level of administration and ideology, but also as these affect teachers and pedagogies as well as individual students and compositions. In the chapters that follow, I endeavor to undertake the systematic investigation of these limits at various levels that concern the Writing Program Administrator, represented by the important stakeholders at each level: the program administrator him or herself, the individual teacher, and the individual student. These separate studies each explore different aspects of the limits of knowledge
management: at the level of the administrator him or herself in the case of educational
surveillance in online writing courses, at the level of the teacher in the case of the
virtualization of writing practices such as peer-response or peer-review, and at the level
of the student, in the case of what I call Culture Jamming, but what the field of
composition now recognizes more broadly as remix.

The second chapter, entitled “Educational Surveillance in Hybrid and Online
Teaching,” considers digital surveillance as a cultural and educational practice and
performs rhetorical analysis of the surveillance interface and surrounding rhetoric used
by the learning management system market leader Blackboard, as a case study in
rhetoric of technology. Analysis of both marketing rhetoric and the surveillance
interface reveals strategies of destabilization employed to call into question traditional
academic narratives and practices in order to replace them. The analysis shows these
destabilizing narratives operate through strategic ambiguity (Faber 9) and exploit
technological myths such as the myth of the digital native (Selwyn) and the myth of the
technological sublime (Dilger). The chapter concludes that writing program
administrators need to question the altruism of corporate technology providers and
become active participants in the data collection and security procedures of the very
large software systems upon which online and hybrid teaching depend. The article
establishes the primary concern of the technorhetorician WPA regarding the ownership
and distribution of intellectual property and personal information at the broadest level—
that of the writing program itself.

The third chapter, “Technological Literacy and the Virtualization of Writing
Practices.” This article presents the results of one aspect of a large-scale, research-board
approved study of virtual peer review practices across more than twelve sections of
writing program courses over two years, using a mixed-methods approach that combines data-mining with more traditional grounded theory methods, as advocated by scholars such as Lang and Baehr, among others (175). This article examines issues of technological literacy using a contemporary model of access (Banks 37), and asks the question: to what extent is technological literacy measurable in student writing and responses to student writing? The data presented in this article provide evidence that technological literacy is indeed a factor in writing produced in unfamiliar virtual environments, and as a result argues for writing program administrators to establish policies for writing produced this way that are informed by evidence-based understandings about access and technological literacy, as well as calling for more research into other effects of technological literacy on writing. This article ultimately establishes the primary concerns of the technorhetorician WPA at the level of the classroom, and shows how transformative access, that is, the ability to participate in the design and development of the technologies themselves, is necessary to truly realize the potentials of data mining for writing research.

The fourth chapter, “Culture Jams: Critical Media Literacy in the Digital/Multimodal Classroom,” which appeared in a 2012 special issue of Computers and Composition Online and won the W. Paul Jones Scholarship that same year, outlines a pedagogical approach in response to the call for fostering 21st-century literacies. This article details a pedagogy of multiliteracies informed by the practices of culture jamming, a subset of what is often called “remix” (Dubisar and Palmieri ??), that acknowledges and negotiates the complex legal and ethical terrain surrounding the issues of intellectual property, piracy, and activism in a digital world. This article takes the form of both a web-text (itself a culture jam) and a traditional print article as
presented here, and establishes the practices of culture jamming within a tradition of critical discourse, one focused on identity-making and political statement. Culture jamming is revealed as a particular kind of remix that appropriates corporate or popular hegemonic discourse in order to express a contradictory, opposite, and often empowering message. Thus it serves a pedagogical function as well as a more narrowly communicative purpose, while at the same time fostering needed digital literacies among students and teachers. The article asks the question of what critically-oriented activist pedagogies looks like in a digital age, and its response lays out a curricular program for administrators that takes into account changing composition practices as well as the changing purposes for communication, and begins addressing the ethical implications of intellectual property law for individuals who compose with new media.

The concluding chapter synthesizes the implications of individual chapters into a formal call for writing program administrators who are also technorhetoricians, and identifies the most important first steps: including how to tackle the trenchant issue of our own functional literacies in our personal, professional, and pedagogical work. This chapter argues for administrators to themselves become activists in promoting digital pedagogies, in working for better recognition by professional organizations and institutions, and in fostering their use among graduate students, lecturers, and adjuncts in order to create productive learning environments for literacy acquisition, to establish standards for digital production and digital pedagogies, and to begin the complex projects of remediating the very technologies themselves to better suit our needs and the needs of writing program administrators to come.
Works Cited


We must cease once and for all to describe the effects of power in negative terms: it 'excludes', it 'represses', it 'censors', it 'abstracts', it 'masks', it 'conceals'. In fact, power produces; it produces reality; it produces domains of objects and rituals of truth. The individual and the knowledge that may be gained of him belong to this production. (194)

—Foucault, *Discipline and Punish*

Blackboxing: An expression from the sociology of science that refers to the way scientific and technical work is made invisible by its own success. When a machine runs efficiently, when a matter of fact is settled, one need only focus on its inputs and outputs and not on its internal complexity. Thus, paradoxically, the more science and technology succeed, the more opaque and obscure they become. (304)

—Latour, *Pandora’s Hope*

Imagine the following fictional scenarios:
1. The Participation Grade

One student taking an online course receives a failing grade in “course participation.” Suffering poor Internet connectivity at home, he mainly interacted with the learning management system from on-campus, expeditiously downloading materials to read later and getting copies from classmates. Another student taking the same online course receives an A in “course participation.” This student never read the articles, but did access the learning management system regularly, leaving browser tabs open while he watched videos and chatted using social media.

2. The Fact Check

A new Graduate Teaching Assistant approaches the department educational technologist to help resolve a dispute: a student in a blended learning class claimed to have read an article the GTA believed the student had not read. The GTA asks the educational technologist to demonstrate how to access the learning management system’s reports to “verify whether the student actually read the article or not.”

3. The Gray Area

A writing program administrator responsible for training new instructors approaches a departmental educational technologist to request “invisible access” to a new instructor’s course website. Responding to a report from a student in the course, the WPA wants to ascertain the dates and times when the new instructor uploaded feedback for students to view, and to verify whether the quality of feedback was sufficient, all without the instructor knowing the WPA had accessed this information.
4. The Catastrophe

An old computer sitting in a corner of a little-used room is remotely attacked and becomes compromised. Horrifyingly, the mostly-decommissioned server did contain, archived in an old backup of another computer, a copy of the database of a long-retired learning management system containing the private information of more than twenty thousand current and former students, including course grades and social security numbers. Large-scale legal action ensues.

Surveillance and the Rhetoric of Technology

These fictional scenarios are not only plausible, but to some extent inevitable; they are the consequence of deploying surveillance at the infrastructure level to support ever-growing online course offerings. Not only do such anecdotes illustrate legal and ethical issues, they also stem from persistent misunderstandings, breakdowns in communication, in other words. Because of anecdotes like these, I have come to view surveillance in online learning largely as a rhetorical problem. The epigraphs I’ve chosen represent the difficult understandings that face us: the complexity of power in education, in the case of Foucault, and the invisibility of technological success, in the case of Latour. With this in mind, I hope, nevertheless, to provide a somewhat technical explanation of why I’ve come to believe that educational surveillance technologies in widespread use are riddled with practical, legal, and pedagogical flaws. Most importantly, as analysis of Blackboard’s data displays shows, these tools actually subvert traditional academic discourses and practices, potentially replacing them with ones that stem from discourses and practices of the military-industrial complex and corporate marketing.
The surveillance problem is at once both theoretical and practical, concerning not only underlying ideological systems, but also everyday experiences of teaching with technology. This article analyzes the surveillance tools provided by Blackboard, the most widely adopted learning management system (LMS). The analysis depends on understanding how technological discourses enact social change, specifically “subversive displacement” at the sites of key generic conventions (Faber 8). In the conclusion, I highlight implications for program administrators, researchers, and teachers, as well as those involved in software development and learning management system administration, and recommend establishing legally and ethically sound processes and policies for long-term curation of surveillance data. Finally, I advocate for better understandings about how surveillance tools function and are developed.

The Scope and Character of the LMS Market

Driven by the technological, economic, and social changes of recent decades, writing courses such as first-year composition, business writing and technical communication courses are experiencing an ongoing “migration” (Warnock xiii) into online and virtual environments. Despite strong resistance from faculty (“Managing” 1), this trend promises to continue. According to U.S. Department of Education data, in 2012, online enrollments grew to 25% or about 5.5 million (Ginder 4), up from 20% in 2008, and just 8% in 2000 (Radford 3). Surveillance technologies, of course, not only affect fully online courses, but also an increasing number of hybrid, or blended learning courses that augment traditional classrooms with virtual resources. Conservatively speaking, upwards of 30% of all students in the country will undergo surveillance from learning management systems next year, and this proportion will likely continue to
grow. Crucial to this growth is the learning management system (LMS) itself, often a massive, enterprise-level software platform that houses most of the digital activities and determines most of the capabilities of an entire campus or system of campuses.

Concern about enterprise content management have been expressed by scholars in technical communication, such as its implication for organizational vision (Hart-Davidson), surviving the implementation process (Pettington), and the assumptions driving adoption (Andersen). Scholars in computers and composition have also expressed concern regarding labor and ethics (Reilley), effectiveness (Miller-Cochran), and data mining and surveillance (McKee). In particular, scholars such as Rebekka Andersen and Heidi McKee have warned about corporate influences in content management. This is because, historically speaking, LMSes have been controlled by capital. Although the website CMS Matrix lists over 1,200 platforms (“Compare”), today’s educational market is dominated by just a few LMSes. Actual market share data are hard to come by, as companies such as Blackboard have been privately traded for most of their history (Overly), however, some independent estimates exist, such as the Campus Computing Project (which relies on surveys), and EduTechnica (which relies on web crawlers).

Figure 1 shows a data visualization built from 2013 EduTechnica statistics (themselves partially dependent on the Campus Computing Project). As the accompanying data indicate, Blackboard enjoys approximately 53% market share while its next-largest competitor has only about 16%. Desire2Learn and Pearson’s eCollege (Pearson Learning Studio) add about 13% on the side of corporation-controlled systems. Moodle, Sakai, and Instructure, the open-source and open-like systems, have grown over the past four years, but still only control about 20% market share when combined.
Figure 1: This chart was created by the combination of Edutechnica data from 2013, and Campus Computing Project data from previous years. It not only shows the relative market share of corporate-owned LMSes, it also shows how Blackboard has “swallowed” competitors over the years. (Image used through the Creative Commons License: attribution to Phil Hill @PhilOnEdTech).

New to market platforms, such as Coursera, Canvas, Adrenna, and others, and so-called “homegrown” solutions like the one used by the University of Phoenix, make up the remainder (Hill). Not only do these data show the domination of the industry by capital (owning more than 75% of the market), they also depict how Blackboard in particular tends to “swallow” competing systems over time, having purchased no fewer than five major competitors since 2000. Importantly, every system, whether corporate
or open, includes built in surveillance technologies that begin gathering data as soon as a user first logs on.

Indeed, the capacity to aggregate and analyze user-generated data may become one of the defining features of the next generation of LMSes. Motivated by the success of Facebook at gathering user information, the for-profit University of Phoenix’s Learning Genome Project has made “a billion dollar bet” on redesigning their corporate LMS to gather data much as Facebook does. As the Director of Data Innovation at the University of Phoenix explained, in a 2010 EduCause conference,

> Facebook lets users customize their experiences . . . by creating profiles and curating the flow of information coming through their ‘news feeds.’ In the same motion, the users volunteer loads of information about themselves. (as qtd Kolowich)

According to Kolowich, the Learning Genome Project seeks to improve online education by adapting content delivery to students’ learning styles, producing a dynamic educational experience, and one which I would emphasize, is wholly dependent on surveillance.

**Surveillance in Society and Education**

The growth in online enrollments occurs against the backdrop of a decade of revelations about the extent of the global surveillance state. In the immediate aftermath of September 11th, Congress passed the USA PATRIOT Act of 2001, which, according to an American Civil Liberties Union briefing, “vastly expanded the government’s authority to spy on its own citizens, while simultaneously reducing checks and balances”
(“Surveillance Under”). Over the decade following, this expansion was documented by whistleblowers (like William Binney) as well as journalists such as Pulitzer Prize winner James Risen, who co-authored an influential report for *The New York Times* disclosing the presidential order for routine data surveillance without court oversight (Risen and Lichtblau). The latter half of the decade also saw the rise of Wikileaks, whose Cablegate “mega-leak,” was, according to them, “the largest set of confidential documents ever to be released into the public domain” (“Secret”).

This dubious distinction lasted until 2013, when Edward Snowden in what the Pentagon eventually concluded was “the biggest theft of U.S. secrets in history” (Strohm and Wilber), released some 1.7 million confidential documents. The release prompted *The Washington Post* to write of “a global surveillance system” in which “Secret legal authorities empowered the NSA to sweep in the telephone, Internet and location records of whole populations (Gellman). Importantly, the Snowden leaks also revealed the complicity of corporations, as part of PRISM, “the NSA's program to directly access the servers of U.S tech giants like Google, Facebook, Microsoft and Apple, among others” (Franceschi-Sicchierai). Even prior to such revelations, the American Civil Liberties Union had declared “Section 215 of the Patriot Act violates the Constitution in several ways” (“Surveillance Under”), including the First and Fourth Amendments. Not all have taken such a view, however. Though some continue to invoke the specter of Orwellian dystopia (Soloman), others report more sanguine attitudes (Dukeman).

Prior to the revelations of the past decade, prominent sociologist David Lyon laid out a balanced conception of modern surveillance in his 2001 book *Surveillance Society: Monitoring Everyday Life*. Lyon defined surveillance as the “collection and processing of personal data, whether identifiable or not, for the purposes of influencing
or managing those whose data have been garnered” (2). From this broad definition, Lyon explores a dual conception of surveillance, arguing it presents two faces, writing “the same process, surveillance . . . both enables and constrains, involves care and control” (3). Lyon explains that, on the one hand, “the advantages of surveillance for its subjects are real, palpable, and undeniable,” while on the other hand he acknowledges “its capacity to reinforce social and economic divisions, to channel choices and to direct desires, and even, at its sharp end, to constrain and control” (4). These two simultaneous directions, at once enabling and constraining behavior, are made visible when they converge in educational practice.

Surveillance is not new to education. On the contrary, many deeply embedded educational practices depend on surveillance. Foucault scholar Stephen J. Ball identifies “the use of testing, examining, profiling, and streaming in education, the use of entry criteria for different types of schooling, and the formation of different types of intelligence, ability, and scholastic identity in the processes of schooling” (4) as examples of dividing practices, and a quick glance through these shows the omnipresence of surveillance. To these, some would add the classroom and the playground, and together these “all represent various modes of surveillance that serve to better produce a known student population” (Dawson 70). Historically, educational practices have both depended upon and enacted surveillance. Surveillance’s role, as Foucault puts it, is to “induce . . . a state of conscious and permanent visibility that assures the automatic functioning of power” (201). The danger here is not from surveillance itself, which, as we have seen, is a necessary component of education, but instead the attempt by LMS vendors to supplant traditional academic kinds of
surveillance with those favored by the systems used in online and hybrid writing instruction.

Destabilization of Discourses and Practices

To understand the mechanism by which corporate practices are supplanting academic ones, we turn to studies of organizational and social change. According to Brenton Faber, a prime example of this mechanism is evident in what he calls the “marketization of higher education” (6). Drawing on science scholars such as Feyerabend and Bazerman, Faber adopts a linguistic and discursive perspective on social change, arguing (along with Feyerabend) that changes in knowledge communities come through an incremental process of argumentation (4). Faber supplements Feyerabend’s model with Bazerman’s vocabulary of stability. Bazerman used the term stability to describe how the final transition in a changing social network is articulated discursively through a “stabilized representation” similar to Feyerabend’s “coherent link” (5). Conversely, destabilization of a social network is also strongly implied, the product of written communication that performs “subversive displacement . . . [which] creates the conditions necessary for change” (5). When combined with reinscription and restabilization, the process is revealed as a cycle. The role of rhetoric in this model is causal, that is: social change is the product of discourse (Faber 10).

Faber’s analysis shows how the process of change involves co-opting and subverting key discursive structures, which are then used to launch further discursive attacks. Faber identifies several types of destabilizing tactics, including the use of co-hyponyms, which is when “certain words (skills/knowledge; training/education) are made equivalent under the core concept.” Faber goes on to explain, “as the new
discourse stabilizes transitional terms (clients, retailers, commodities, management, resources), other, more radical terms (standardization, efficiency, cost containment) can be introduced legitimately” (7). Aside from co-hyponyms, Faber also describes strategic methods of destabilization, occurring primarily at the sites of organizational image and narrative (8). Faber sees image and narrative working in complimentary ways to produce stabilized representations of organizations. Image-driven organizational narratives allow internal and external audiences to identify with and gauge participation in the organization’s mission, and to understand and explain events and their complex roles in them (9).

Faber identifies the genres of organizational communication as key loci for destabilization activities, as knowledge about genres is used to subvert and displace organizational narratives and images (9). Since genres are socially enacted responses to the needs of recurring rhetorical situations, its makes sense they would be involved in organizational change. Indeed, Graham argues that genres are “where institutional ructions are first expressed” (qtd. in Faber 10). Faber explains how destabilizing action makes use of genre knowledge because “the texts use conventions (narratives, images, vocabulary) from within the targeted social group to attempt to make changes (disrupt, destabilize, restabilize) within that same group” (10). The use of genre knowledge in the destabilization of traditional academic surveillance discourse is apparent in the research practices of the destabilizing discourse.

Subversive Displacement in Research Methodology

Evidence of ongoing subversive displacement can found in the research literature on learning management system surveillance in the various disciplines of the sciences
and humanities. Surveying this literature reveals a critical split that falls along methodological lines. The split is oppositional and exclusionary and tends to polarize positions, oftentimes seeking to crystallize the terms of larger debates. From this survey, one can see that empirical research in this area tends to strike an approving tone (Poirier and Feldman; Morris, Finnegan, and Wu; Romero, Ventura, and Garcia; Mazza and Dimitrova), while qualitative methodologies tend to adopt a distinctly critical tone (Hawisher and Selfe; Moxley; Dawson; Ashworth and Free; Welland; Bennington; Friesen, Feenberg, and Smith; Hope). While the former tend to argue mainly from claims about efficacy (that is, how related are the surveillance data and other measures), the latter argue from claims based in postmodern social theories. Despite these contrary perspectives, both methodologies examine surveillance methods employed by LMSes, documenting their use, which suggests to some extent how teachers are already using them.

The best of the empirical studies, such as the one described by Morris, Finnegan, and Wu, make use of a large number of variables, use multiple regression analysis, track duration of time spent in addition to tracking page visits, and correlate these data with other achievement and persistence metrics (measures of grades and retention, respectively) (Morris, Finnegan, and Wu 221). In a totally asynchronous online course, participation was documented through four frequency variables (i.e., number of content pages viewed, number of discussion posts read, number of original posts, and number of follow-up posts) and four duration variables (i.e., seconds spent viewing content pages, seconds spent reading discussions, seconds spent creating original posts, and seconds spent creating follow-up posts). (224)
Here, page visits and visit duration, quantifiable data, are equated with the much more nebulous concept of “participation.” This is an apt illustration of subversive displacement in the formation of co-hyponyms, as the event of visiting a page is substituted for the complex and cumulative set of interpersonal interactions teachers mean by participation in a face-to-face classroom, including long-term observation of how the student engages with and responds to teachers, peers and course materials.

This substitution is problematic not only because it seeks to replace an academic model of surveillance with a corporate one, but also because of the way it might be misinterpreted; to be clear, the record of a browser accessing a webpage for any duration is not evidence that the student was actually reading anything on the page during that time nor even participating in any meaningful way. In fact, it doesn’t say much at all about what the student was doing, if he or she were perhaps struggling, for instance, or simply away from the keyboard. By this fact alone we can see that online surveillance tools provide data that is qualitatively different from traditionally academic ones. Co-hyponyms are subversive precisely because they seek to elide that difference and make it invisible.

Further evidence of subversive displacement can be found in a review of CourseViz, an early learning analytics software engine. Mazza and Dimitrova write that by viewing the records of when “a student accessed a content page of materials dealing with a particular concept . . . the instructor can see the concepts studied by the student” (Mazza and Dimitrova 158). In a move typical of this kind of research (but a particularly overt example reflecting an uncritical and instrumental view), the authors directly equate content page access (that is, the fact a browser associated with an account requested and received a webpage) with the study of concepts (that is, a cognitive
activity performed by a human) by making them semantically equivalent. In other words, in this view, a program (the student’s browser) accessing another program’s content (the LMS), an interaction between two machines, is made equivalent to an interaction between a human and a text. “Page access” and “study” become co-hyponyms, as one is equated with the other.

This not only illustrates subversive displacement, it also illustrates an important instance of blackboxing, because even the very phrase “content page access” is blackboxed in that it misrepresents the actual mechanism by which the system’s log is generated. An individual server on which an LMS is housed has no way of knowing what happens to data once they are sent out—no server does—and does not have the connotation of entry other kinds of access have. Since servers can only record a log of browsers’ requests and the service of those requests (hence the term ‘server’); often these are called ‘page hits’ or simply ‘hits.’ It is assumed that the data arrive, as they do in the vast majority of cases, and this assumption gives rise to the euphemism “page access.” If page data were sent and the connection corrupted on the user’s end, or if the browser could not fully parse the page, the log would still indicate the data were sent and thus that the page had been “accessed,” even if the user only ever saw a blank screen. Most importantly, this also means a student can generate activity simply by clicking on a lot of links, even accidentally.

The phrases “time spent” and “access duration” are likewise misleading because these measures actually consist only of the mathematical derivation of elapsed time between one page request and the next page request by the same account in the system, which is to say simply that the computer records each page request and subtracts the time stamp of the prior from the time stamp of the subsequent to determine “time
spent.” It is not, as the statement implies, evidence of study-like activity on the part of a human.

Subversive Displacement in Graphic Modes of Power

It is not enough to simply know how researchers use surveillance tools, we must also acquaint ourselves with the tools themselves. To do this, we must understand from a systems perspective how they work. Basically, log data from the web server are placed into a database and indexed by user account and content type. In other words, page hits, all date- and time-stamped, are listed in tables along with other system-specific data such as account IDs and system role, along with all the different pages in the site classified according to what kind of content or activity they contain. Large or small, these database tables contain the same basic information: what pages were requested by what account, and on what dates and times. Recalling the blackboxing of page access, or as Blackboard has it “student activity,” one realizes the paucity of the data set; it is essentially a list of who accessed what, and when, but not what happened, specifically not what the student made of it.

When a teacher “runs a report,” what actually happens is the system (selecting from a number of preset templates) performs a custom database query (using proprietary languages similar to those used by open systems, such as SQL and PHP) that selects among database fields according to the specified parameters. The database query returns or outputs a simple table of columns and rows. Blackboard’s system then uses spreadsheet visualization tools to convert these tables into graphs and charts similarly to how Microsoft Word creates charts by converting data from Excel tables. Teachers can run reports on a number of different things, generating different displays. Since
surveillance tools in this instance belong to the genre of visual displays of data, my
analysis draws on the history of such visuals in technical and professional
communication to look for conventions that may constitute sites of subversive
displacement.

In this history, scholars have recognized that the power of sight is often
uncritically privileged as the preeminent sense because it purports to instantly reveal,
without ideology, the essential nature and relationships of things, a “pure Look” that
simply represents things as they are. This privileging of the visual was called into
question and complicated, Barton and Barton write, by postmodern and postcolonial
thinkers such as Foucault, Sartre, and Latour (“Modes” 140). In an analysis that reveals
the distinctly ideological character of maps, Barton and Barton tell us that such visual
depictions are not neutral sites of representation, rather “visuals . . . [are] a site of power
inscription” (Barton and Barton "Modes" 138). This is because representation takes
place in an asymmetrical context of knowledge possession where issues of power come
to the fore.

Whether one is talking about the (mis)representations of indigenous native
peoples or about colonial maps of such peoples’ lands, “the power to dominate rests on
the differential possession of knowledge” (Barton and Barton “Modes” 139), and in this
asymmetrical relationship, “the power derived. . . is janiform. . . is both inclusionary and
exclusionary, both empowering and disempowering” (140). Visuals are also janiform in
at least one other way, and that is that the truth of visual representation, that it serves
ideological ends, is hidden behind a false face of neutrality, of naturalization, of
purporting to merely reflect reality, and thereby serves to legitimize ideologies. Faced
with this duplicity, Barton and Barton argue, we must engage in processes of denaturalization, so as to show explicitly how the visuals were constructed.

The visuals denaturalized here each represent a different aspect of power inscription: what Barton and Barton call rules of inclusion and exclusion, anisotropic views of space, and the analytic and synoptic modes (which together comprise the panoptic mode) of power. To illustrate these visual means to power, I examine four data displays used by the Blackboard LMS: “Student Activity by Item,” “Student Overview and Activity By Day,” “User Activity By Day,” and “Course Activity By Student.” Readers will note that each visual inscribes power in multiple ways, though in the analysis below I focus on only one per visual for illustrative purposes. The analysis depends on concepts from the study of visual displays, including visual saliency and the anisotropic view of space, as well as understanding the modes of power of data displays. An anisotropic view of space means that space is not without value: in other words, where information is positioned in relation to other information connotes relative value (Barton and Barton "Ideology" 235); such a view is often exploited to achieve saliency, that is, emphasis of a particular class of data at the expense of other classes. Finally, as Barton and Barton show, data displays also exercise power through two modes: synoptic, or views of the mass, and analytic, or views of the individual, which together comprise the panoptic mode of power (Barton and Barton "Modes" 138).

The first visual is a table purporting to summarize a single user’s activity across the course site as a whole, and it involves what Barton and Barton call “rules of inclusion and rules of exclusion,” which are the choices in what to display and what to omit. The table is reproduced in Figure 2 “Student Activity By Item” and it shows how the “choice of what to study and describe [is] . . . a choice of one system of authority, one source of
legitimacy, over another” (Barton and Barton “Ideology” 236). What the table displays is a list of content items, that is, material the teacher has uploaded and created, indexed for an individual student by three categories: the initial date of access, the number of access events (page hits), and the “total time spent.”

<table>
<thead>
<tr>
<th>Item Name And Type</th>
<th>Total Time Spent in Hours</th>
<th>Number of Times Accessed</th>
<th>Initial Access Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework Assignment #1</td>
<td>1.24</td>
<td>4</td>
<td>Aug 12, 2014 11:21 PM</td>
</tr>
<tr>
<td>Module Page</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welcome to the Course</td>
<td>2.56</td>
<td>12</td>
<td>Aug 10, 2014 2:19 PM</td>
</tr>
<tr>
<td>Blank Page</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content</td>
<td>2.02</td>
<td>7</td>
<td>Aug 11, 2014 10:06 AM</td>
</tr>
<tr>
<td>Content Folder</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course Syllabus</td>
<td>0.46</td>
<td>6</td>
<td>Aug 12, 2014 1:54 PM</td>
</tr>
<tr>
<td>File</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major Course Assignments</td>
<td>1.93</td>
<td>3</td>
<td>Aug 13, 2014 12:17 AM</td>
</tr>
<tr>
<td>File</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Article</td>
<td>3.11</td>
<td>5</td>
<td>Aug 20, 2014 12:37 PM</td>
</tr>
<tr>
<td>File</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Article</td>
<td>2.42</td>
<td>4</td>
<td>Aug 28, 2014 10:46 PM</td>
</tr>
<tr>
<td>File</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Article</td>
<td>0.79</td>
<td>3</td>
<td>Sep 7, 2014 11:32 AM</td>
</tr>
</tbody>
</table>

**Figure 2:** “Student Activity by Item in the Course.” This chart demonstrates how the graphic convention of saliency is employed to privilege “Total Time Spent in Hours.”

The display tacitly argues it has elided less important data (such as the date and time of each access event) in favor of the most useful data. The key data point, number of hours per content item, is given saliency by its placement and bold face type. Located along the same row as its respective content item, this value is positioned in the privileged location of first item to the right of each list item (which means it would likely be read first). This table argues that a student’s activity in a course consists only of two things that really matter: which content items were accessed and how long the browser
remained on the page. This argument seeks to compress the notion of activity so it can be represented only by the data the system already collects, without supplement. In this way, one can more easily be made to stand in for another.

The next visual in the same report illustrates that rules of inclusion and exclusion are also made according to an anisotropic view of space, or the idea that space, everywhere, is not equal, and this can be seen in practices of hierarchically arranging information (Barton and Barton “Ideology” 236). It’s not just about what to include, but where, relatively, to position it. The anisotropic view of space is precisely what gives “total time spent” its saliency in the previous example. This table is represented in Figure 3: “Student Overview - Activity By Day.” In this figure, vertical hierarchy is employed to convey relative value among terms. For example, the report commences with the report title and the table title, as we might expect. What is surprising is that the first visualization the report offers is the total time the student spent on the site broken up by day of the week. It is hard to imagine how a teacher could believe this to be the most important thing to know about a student, until one understands the real, hidden, paucity of the entire data set. Once we understand the entirety of the data consist of a record of who accessed what pages when, the rationale for the hierarchy becomes clear. Even though teachers typically do not care which days of the week students do their course work, correlating the access data by day of the week makes sense when we realize how limited are the options for displaying the same data in different ways. Aggregation by day of the week is the only new aggregation of “who accessed what, when” not already used in another report, and so it becomes the primary item in this one, its placement giving it undue value.
**Student Overview for Single Course**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Sandbox Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course ID</td>
<td>XXXX-XXXX-XXXX-XXXX</td>
</tr>
<tr>
<td>Student Name</td>
<td>Example Student One (example1-id)</td>
</tr>
<tr>
<td>Student ID</td>
<td>example1-id</td>
</tr>
<tr>
<td>Date Range</td>
<td>08/10/2014 - 9/10/2014</td>
</tr>
</tbody>
</table>

Activity is shown for enrolled users only.

**Student Overview**

**Student Activity by Day**

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td>0.06</td>
</tr>
<tr>
<td>Monday</td>
<td>5.83</td>
</tr>
<tr>
<td>Tuesday</td>
<td>1.50</td>
</tr>
<tr>
<td>Wednesday</td>
<td>2.71</td>
</tr>
<tr>
<td>Thursday</td>
<td>3.34</td>
</tr>
<tr>
<td>Friday</td>
<td>0.64</td>
</tr>
<tr>
<td>Saturday</td>
<td>0.45</td>
</tr>
</tbody>
</table>

**Student Time in Course**

<table>
<thead>
<tr>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:34:48 HH:MM:SS</td>
</tr>
</tbody>
</table>

**Avg Time Per User**

**Total Items**

**Total Logins**

**Last Login Date**

09/10/2014 2:19:30 PM

**Figure 3:** “Student Overview – Activity By Day” uses the convention of vertical hierarchy to privilege Student Activity by Day, giving this metric undue weight.

Aside from rules of inclusion/exclusion and saliency conveyed by an anisotropic view of space, visuals also convey to their users two related modes of power, the synoptic and the analytic modes, which combine to form the panoptic mode. This taxonomy was developed by Foucault and applied to the study of technical visuals by Barton and Barton (“Modes”). One of the key advantages of the graphic display of data is its ability to represent so much at one time. Edward Tufte, a data-visualization scholar, writes that excellent graphical displays “reveal the data at several levels of detail, from a broad overview to the fine structure” (Tufte 13). In Foucault’s analysis of penal culture, the synoptic mode is essential because it “procure[s] for a small number, or even for a single
individual, the instantaneous view of a great multitude” (qtd. in Barton and Barton “Modes” 141). The synoptic mode is illustrated in Figure 4.

**Figure 4:** “User Activity by Day.” This chart depicts “activity” in the synoptic mode, showing the aggregation of all page hits by day.

In this figure, the same access data as before are now represented in a bar graph. The vertical axis shows combined activity across the site while the horizontal axis is arranged by date. This display conveys synoptic power because it provides a god-like perspective or a view from on high. From this height, the instructor can see broad patterns of access by time, ascertaining, for instance, which periods of the semester are trending up or down as well as which data points are outliers to the general trend, among other things. This view is fundamentally synoptic in that it elides most data in favor of just two measures: date and combined number of page hits. These data become less impressive when we recall what is actually being measured by the vertical axis, for it is not actually Activity By Day, as the label has it, but merely page hits. Recall that all a
user has to do to register a page hit is to accidentally click the wrong link in the web browser, so all page hits are not even intentional, let alone productive in terms of mastering course content or meeting course outcomes. The problem here is that no effort is made to separate accidental from intentional, and it is not possible to do so through the interface. Even simply classifying access duration into just two ranges, such as 0 to 29 seconds and greater than 30 seconds, would allow teachers to begin to eliminate false positives (though by itself this would not solve the fundamental problem presented by equating activity with page hits, which is that the user could be doing something else between logged events).

Distinct from the synoptic mode is the analytic mode of power, which became important “when it became necessary to analyze, impose discipline, and correct behavior at the level of the individual” (Barton and Barton “Modes” 141). The analytic mode allows those viewed “to be separated and compared both to each other and against a norm of acceptable behavior,” to make “it possible to discern similarities and differences” (Barton and Barton “Modes” 141). Blackboard’s reports pretend to present just such an analytic view in Figure 5 “Course Activity - Student Overview.”

This chart presents yet again the same data, who accessed what and when, but this time arranged so that individual students are ranked against each other, and all are compared to the average represented by the trend line (which itself does not represent any real student). For example, from this view, we can see that Student 3 exhibits about twice as much activity as Student 2. If we could assess student activity in such a straightforward manner, that would indeed be a boon because teachers do have the need for the analytic mode of power to aid them in discerning similarities and differences among individuals; however, this chart does not show anything like “activity,” only page
Figure 5: “Course Activity - Student Overview.” This chart displays total course time for each student in hours, employing the analytic mode to compare individuals against each other and against an average.

hits, and so it is showing similarities and differences between students only in terms of how many pages they navigate to, and how long before they navigate to another page. Thus, a student who clicks on more links than his or her peers is more “active.” Similarly, if one student works on another student’s account, his or her “activity” would be credited to another. Finally, if a student quickly downloaded a copy of a file and read it offline, none of that “activity” would be logged. This is not to say that these data are useless, for one can imagine how examining such records over time could help
researchers and teachers in some ways, but only that we must understand what the data are actually representative of, not what the vendors claim them to be.

The synoptic and analytic modes of power are complimentary, and when used in consort they comprise the panoptic mode of power, named after Jeremy Bentham’s imagined prison, which was used as a metaphor by Foucault for penal culture and discipline more broadly. In Barton and Barton’s analysis, they emphasize that the empowerment conveyed by the tandem operation of modalities is “derived from the spatial collocation of families of visuals” (Barton and Barton “Modes” 148). Panopticism is achieved when both the synoptic and analytic modes are spatially collocated, in other words, when observers can shift rapidly between one view and another. Blackboard’s reports present such an option in the form of the “Run Reports Menu,” reproduced in Figure 6.

There are eight different report options in the menu, and to these we must add one more, the report run from content items in another menu, for a total of nine different reports accessible from the system as a whole. This seems to satisfy the panoptic requirement for spatial collocation by putting so many different views in one place; however, a close look reveals that two of the reports are merely older and newer versions of each other, and three apply only to specific activity modules, such as course-wide goals, leaving only five reports: of these five, the first and third and the second and fourth output essentially the same data (with only one display different in each). There are, after all, only so many ways to show who accessed what and when.

In the end, the empowerment conveyed by Blackboard’s data displays is illusory. Not only do they display a limited set of data, more importantly, those data do not represent what they claim. It is not activity, but page hits, and it is not a student’s
request for a page, it is an account's. Because activity/page hit and student/account are equated and made to be co-hyponyms, one set of surveillance practices is able to destabilize another. For this reason, primarily, I argue surveillance tools such as these should not be considered as a means of assessment. Such reliance is suspect precisely

Figure 6: “Course Reports Menu.” The menu showing the number and kinds of reports a teacher can run.

because the data do not display “activity”, nor can they verify which human was operating the account that performed the access. In fact, all the strategies of subversive displacement, of the power supposedly derived from “seeing without being seen” (Barton and Barton “Modes” 139), all is revealed to have been carefully crafted to disguise a simple fact: that such surveillance cannot show us much about our students at all.
From a list of page hits, we cannot see a puzzled expression nor hear a frustrated sigh. We cannot detect nervousness, fear, excitement, or pride, all of which are emotions I have seen my students express in the process of learning. Page hits cannot take into account the multiplicity comprising activity, or participation, and they should not pretend to do so. It is this fundamental deception that makes these tools more dangerous than tools of surveillance that provide actual observational capacity. While both may be seen as dehumanizing, Blackboard’s tools provide all the subjugation that goes along with surveillance and none of the real information (power) in return. The subjects such exercise of discipline would create would be those who clicked on a lot of pages and left windows open while they did.

Data Surveillance Implications and Imperatives

The forgoing analysis results in a number of implications for writing program administrators, teachers, and researchers, and also for software developers as well (inasmuch as this latter group overlaps with the former three). Issues that need immediate resolution, such as the review of policies and procedures for curating, archiving, and accessing privileged student data, are presented first in each section that follows, while other implications, delivered subsequently, represent understandings that can aid in medium and long-term planning.

For the program administrator, the greatest areas of concern should be the protection of student data and the assurance that such tools are not used as curricular assessment measures (in other words, that online courses do not assess student participation based solely on the “activity” metrics derived from page hits). Program administrators must be particularly wary of blackboxing, or ignoring the internal
workings of surveillance technologies, not only for the reasons mentioned above, but for an additional reason as well. When it comes to protecting student data, it would be tempting to assume that some system technician is “on top of it,” but the truth is that many teachers, knowingly and unknowingly, keep copies of such data on department-supplied machines, machines which are too often vulnerable to attack, and this data routinely includes student ID numbers and course designations, as well as grades.

Additionally, many teachers are forced to augment their institution’s LMS (because no single system can provide all needed features to all users) with off-site systems that use a variety of different data practices. The idea that individual teachers can already make unlimited copies of database outputs containing privileged student information, both from campus and from other private systems, may be frightening enough, but we should also remember that employees of third parties, such as a data technician working for the corporation that produces a scheduling tool like Doodle, can also make copies of student data, it threatens to transgress institutional policies and even Federal law (such as FERPA). In an age when everything is routinely backed up, these data proliferate too quickly to remain secure, especially when we expect them to remain secure forever.

Existing policies for data security must be improved, locally and in the discipline at large. Typically these policies place the onus of assuring data security on the end user, because no one can predict what that user will do with it. Because of this prevailing situation, program administrators should advocate for extremely restrictive data security measures, limiting access to the smallest number of people possible. In such a model, an individual teacher has no need to know who accessed what and when, since this information has extremely limited practical value. This means that program
administrators need to acquire familiarity or trusted expertise with how systems generate and store data, and need to acquaint program constituents, including the teachers who will operate the courses, with these technical processes as well. Program administrators should use this knowledge to argue for permissions structures that remove or disable surveillance capabilities in local installations. In addition, policies need to address the time frame of curation. It is unrealistic to expect that data be kept secure forever. The only way to assure security is to engage in regular and systematic data inventories and purges, in which those with access must strictly account for and destroy extant copies.

For teachers and researchers, the imperatives are equally clear. Keeping detailed surveillance records presents a significant security risk and returns little of meaningful value. As corollary, this also calls into question the use of off-campus or supplementary tools such as Doodle (a scheduling tool), Wordpress.com (a web hosting site), and even GoogleDocs (a collaborative writing system), since all such systems require students to waive their rights to data security. Rather than protecting and restricting access to student data, such corporate systems, especially the “free to use” variety, instead subject the data to far more sophisticated analysis than available to the average Blackboard user, and then sell these data to others. Teachers and researchers have no control over this and are thus unable to protect student information.

If instructors must rely on these platforms, all efforts should be made to disguise the purpose of the site, document, or schedule (it should not be identified with a particular course title or number) and no personally identifiable information should be input by any user. This requires teachers and students, to an extent, to adopt an ethic of anonymity that may or may not conflict with extant pedagogies. Teachers and
researches can explicitly address surveillance practices in classrooms and research studies by making efforts to denaturalize surveillance constructions through rhetorical analysis of surveillance texts, such as that conducted here. Knowledge about institutional surveillance can empower students to protect themselves. Finally, teachers and researchers should appeal to governing bodies such as NCTE and WPA for the creation of policies addressing widely-used data surveillance tools such as those routinely employed by leading learning management systems.

These imperatives and implications, though, are all in a sense merely stop-gap solutions to the greater problem, which is a lack of understanding of and skill with the underlying digital technologies themselves. For those program administrators, researchers, and teachers who are also technology developers, this analysis shows just how problematic a reliance on corporate-developed LMSes actually is. It means we must ask questions like: if these tools are not good enough, what would good tools look like? If page hits are not an adequate replacement for activity, what would be? Can we leverage the power of our systems to provide information we actually want to know, that we would actually use in some other process? As more of us become conversant with digital technologies, more of us become poised to contribute to future solutions. Ideally, we need the knowledge and skills ourselves, so we can craft, modify, and collaborate to build the kinds of tools that would benefit our students the most.

So what would such a solution look like? It is difficult to conceive of without succumbing somewhat to an imagination run wild, so I will restrict myself to a single example. Ideally, the surveillance mechanism would be developed on an open-source code base and secured through two-way public encryption. Rather than residing in a single system, the data would be distributed among networks, with each node
containing only a selection of data at one time. Also ideally, the mechanism would be voluntary, something a student could turn on and off at will and submit as an aid to assessing course participation and activity. All in all I imagine something like a browser extension with a system of tags and categories, an extension that a student could activate that would track course-related activity from the user’s perspective, whether on the LMS or any website, and a database structure to collate the data and render displays for teachers and students. Such a database could include notes, document research activity, and aid in the construction of reading lists, bibliographies, and even outlines for papers and assignments. With such a tool, not only would teachers benefit from surveillance, students could as well, by sharing resources outside those the teacher alone can provide via the LMS.

Ultimately, the issues raised by data surveillance practices in online education are complex and difficult. Occurring as they do at the intersection of tensions between corporations and universities, between administrators and teachers, teachers and students, individuals and collectives, and between people and technology, surveillance issues can be best solved by application of a rhetorical understanding about how discourses enact and respond to technological change, and which is capable of detecting and calling into question strategies of ambiguity and subversive displacement. Such a perspective requires understanding how generic conventions are exploited to destabilize and supplant educational practices. It is the primary claim of this article that we collectively resist this change, discarding it as inadequate, and begin seeking to identify an alternative that is fortified against future destabilizing action.
Works Cited


“Managing Online Education.” Nov. 2010.


CHAPTER 3

TECHNOLOGICAL LITERACY AND THE VIRTUALIZATION OF WRITING PRACTICES: A HYBRID STUDY OF LEARNING MANAGEMENT SYSTEMS FOR VIRTUAL PEER REVIEW IN ONLINE AND BLENDED CLASSROOMS

The use of learning technology in writing classrooms has continued to accelerate over the past decade and has brought real changes in spheres from the pedagogical and administrative, to the theoretical and methodological. An ever-growing number of writing classrooms today look significantly different from their equivalents of a decade ago, both in terms of their physical spaces and their curricula, and even more different from two decades ago. The continued rise of both online writing instruction and multimodal composition promises terrific gains, but also presents a prodigious host of challenges. Scholars in composition and pedagogy, working mainly from within a tradition of critical engagement with power, have identified substantial ideological and ethical challenges posed by teaching and learning technologies, particularly in terms of embedded ideologies (Selfe and Selfe 494), access (Banks 4), ownership (Reilly and Williams 70), and privacy (Siemens, Althaus, and Stange 341). New pedagogies have arisen in response to what has been called the “remediation” of contemporary communication (Bolter and Grusin 14), of composition curricula (McKee and Porter 711), and of writing programs (Leverenz 38), and these new pedagogies depend on new literacies (New London Group 66), new models of assessment (Pailliotet et al. 216), new kinds of research (Lang and Baehr 117), and an ever-increasing array of new
technologies, notably mobile technologies (*Technology Outlook* 18), for their implementation.

However, one major issue the fields of Rhetoric and Composition has failed to address adequately, as Adam Banks argued nearly a decade ago in his 2006 book *Race, Rhetoric, and Technology: Searching for Higher Ground*, is the deeply troubling question of technological access, what Charles Moran called “the A-word in composition” (Moran 205) and the “silence”, Banks writes that “echoes throughout journals and books published in composition and technical communication” (14) concerning this critical topic. The question of access is not just about network connectivity, usage, and physical access to and ownership of computers, as Banks himself argues persuasively, but instead about meaningful differences in the uses to which technology is put, in the ways it is used, in how inclusive it actually becomes. This kind of access, which Banks calls *transformative*, remains elusive (31). A decade later on, corporations still retain nearly exclusive control over the products of educational technology, from enterprise platforms to the so-called “free” applications, and little progress has been made in the way of the inclusion of underprivileged voices.

This is not to say that the questions raised by the Digital Divide have not been addressed by composition studies at all. To the contrary, the last decade has seen further research into the aspects of access and the Divide, especially about how access impacts pedagogy in Two-Year College English programs (Millward 373), how our understanding of access is changed by the advent of mobile computing (Pearce and Rice 737), as well as a handful of studies that explore how access, culture, and identity are intertwined (Moxley; Pandey; Ruecker). However praiseworthy these efforts have been, significant questions about the field’s attention to access remain. We still don’t know
much about how those caught on the wrong side of the Digital Divide actually differ, in terms of skills and approaches, from their more technologically advantaged peers, nor do we adequately understand how to define even a basic standard of technological literacy; let alone begin to address the systemic cultural and institutional forces that are responsible for creating and maintaining the Divide in the first place. There is still much about the ethical aspects of educational technology that remain unresolved.

By contrast, the likely progress of the products of educational technology is far more settled, at least in the near term, as the New Media Consortium’s Horizon Project reports. The project’s Technology Outlook is the established consensus of 139 experts from three different advisory boards, and it makes a number of predictions based on current trends: for example that mobile learning will become “mainstream in some form” over the course of 2013 and 2014, and that the deployment of learning analytics, as another example, is poised to occur between 2015 and 2016 (“Technology” 2); furthermore, the report goes on to detail the twelve key technologies that will become “very important . . . over the next year, two to three years, and four to five years” (4). The impact these forthcoming technologies will have on students and teachers is real, and their potential to impact some more than others is in little doubt. It is for precisely this reason that we must come to better understand the ongoing remediation of writing, as our classrooms, pedagogies, practices, and curricula become increasingly virtualized.

Remediating Writing Studies

One aspect of this process of remediation is taking place in the field’s conception of it’s own research methodologies, as a recent 2013 special issue of College Composition and Communication demonstrates, especially as in the case of Susan
Lang’s and Craig Baehr’s article, in which the authors, responding to prior calls for “increasing our field’s use of evidence to support our views of teaching” (174), present a methodology for answering key questions about writing programs and teaching practices based in emergent techniques of data mining (the collection and management of data, its subsequent analysis, and predictions and more testing based on that analysis). Lang and Baehr offer data mining as a method for providing the evidence we need to support our views about our own teaching. They argue that data mining offers potential advantages for both composition instructors and program administrators because “the amount of data that contributes to the answers [to key questions] has either been out of our reach or impossible to calculate” (173). Key questions identified by Lang and Baehr include those posed by issues of articulation agreements between two-year and four-year institutions, issues of curriculum, and issues of assessment and pedagogy (173). Since these areas are so central to the teaching of writing and the business of writing programs, data mining seems to promise a great deal indeed.

Up until now, a major barrier to the implementation of data mining methods, for many teachers and programs, is that they presuppose an appropriately structured, already extant, corpus of data, as well as the necessary technical expertise to access it. Even ten years ago, the creation and curation of such a corpus was highly prohibitive both in terms of cost and in terms of the expertise required to build the relational databases such methods ultimately rely upon. However, today’s post-Web 2.0 learning technologies and learning management systems (LMSes) make the use of such databases easier than ever before, and many modern architectures, such as MySQL and PostgreSQL, are both freely available and relatively simple to deploy. Such technologies could make the extraction of large amounts of data much easier (even if its subsequent
organization and curation remains sufficiently complex). Still, access becomes an issue not just for students, but also for teachers and researchers as well. The issue of researcher access especially comes to the fore when the rubber meets the road: when the data are actually output from the system, because writing specialists typically have no hand in designing the structure of the databases themselves, and thus no agency in determining the semantic relationships among quanta of data, which significantly affects what kinds of research questions we can ask.

Virtualizing Writing Practices

Research methodology is not the only area being remediated; integral components of writing pedagogy, such as the practice of peer review or peer response, are also experiencing significant and ongoing remediation by digital composing practices (Breuch 34) and the so-called “migration” (Warnock xiii) of writing courses to online spaces. Questions about this process of remediation present challenges because LMSes today provide individuals with a wide variety of platforms, models, and resources for engaging students with productive and effective peer review sessions in face-to-face, blended, and online learning environments. The need for this has never been greater, and the marketplace has responded with a welter of products. Nevertheless, some essential problems with peer review—such as vague peer feedback—still remain, and in some cases are even complicated further. Because the use of these technologies in composition classrooms is not well understood, the fields of Rhetoric and Composition can benefit substantially from both a qualitative and quantitative understanding of the effects such technologies have on student writing, on writing practices such as virtual peer review, and on the pedagogies and programs that support them.
One book length study by Lee-Ann Kastman Breuch, *Virtual Peer Review: Teaching and Learning About Writing in Online Environments*, observes that, as we believe with any virtualization practice, that “virtual peer-review is . . . an exercise in technological literacy” (3), which we take to mean that any virtual peer review practice, whether synchronous or asynchronous, on whatever operating platform, involves the making of meaning between machine and human at the point of interface, and as such, it involves an ability to “read” the technology, or, to be more plain, to negotiate series of choices based upon knowledge of what the system wants. While we do not see this process wholly in terms of an ongoing struggle with the technological interface, we do acknowledge that these interactions may often seem to take on this character. Breuch’s response to this is surprising, as she concludes finally “virtual peer review is one way we may begin to integrate technological literacy into writing studies” (129). For Breuch, the appropriate response to the difficulty of the circumstances is to recognize the benefits of overcoming the struggle, and to pursue them.

But the use of term “technological literacy” is itself questionable, as Johndan Johnson-Eilola and Anne Frances Wysocki demonstrate in “Blinded by the Letter: Why Are We Using ‘Literacy’ As a Metaphor for Everything Else?” as the terminology implies the promise of material gain and often stems from instrumentalist approaches. Other frameworks have been advanced, most notably Stuart Selber’s multiliteracies, in which he describes as the “the literacy landscape that students should be able to navigate” (24): what he calls functional, critical, and rhetorical literacies. For Selber, literacy is best understood in rhetorical terms to involve a “reflective praxis” a practice motivated by questions that situate students as producers of knowledge.
Adam Banks shies further away from literacy than Selber does, by preferring the term access, but much of his framework is owed to a rhetorical conception of technological literacy. For Banks, access is made up, “quilted” (26) he writes, of five kinds: material, functional, experiential, critical, and transformative, which together comprise what he calls “meaningful access”, which, he writes, is the kind of access that “allows users, individually and collectively, to be able to use, critique, resist, design, and change technologies in ways that are relevant to their needs rather than those of the corporations that hope to sell them” (Banks 41). As with Selber, Banks believes in a kind of dialogic interaction asserting student agency as producers and contributors to the corporate and institutional factors that constrain its normal production. And so finally, it was the distribution of technological literacies in our classrooms that prompted us to look hard at the question of access with our students, a rhetorical problem, Banks tells us, that is a significant learning factor for minority and rural populations. Banks warns that the closing of the so-called Digital Divide will not happen by merely distributing technology more profligately, and that the sort of intentional blindness our field exhibits toward issues of race and income in higher education, and their tendency to obscure themselves, creates an unacknowledged problem that will only grow worse as the pace of technology use quickens.

Motivated by these issues: on the one hand the remediation of research and of writing pedagogy, and on the other the question of access, our research team has engaged in a more than two year long study of digitally-mediated peer review in our very large communication across the curriculum program to answer questions about its effect on student writing and student peer review, as well as to assess its impact on our pedagogies. We employed more traditional, paper-based peer review, as well as a
number of virtual peer review technologies (including Eli Review, a web-based tool created at another research institution, and a Moodle-based LMS built and administered by our own program) in over a dozen of our own communications courses at all levels of the writing program. With over two hundred research participants, we gathered data on the practices and products of peer review ranging from responses and peer ratings to critical reflections, interviews, and focus groups, and we've analyzed these data by integrating both quantitative and qualitative methodologies.

In the remainder of this article, as we describe one aspect of this study and present our results, we come to three conclusions about the effects of digitally mediated peer review. The first is that we do not know enough about how technological literacies are formed or what they consist of, never mind what their actual distribution is, to properly factor this into assessments of student writing. The second is that our own levels of technological access, as researchers with varying skill with technology, and varying degrees of exclusion, afforded us some things and constrained others, and this determined to a great extent the kinds and qualities of the data we were able to gather. The third is that, despite these unknowns, the virtualization of writing practices such as those offered by digitally mediated peer review software and the hybrid data mining methodologies do potentially provide transformative access not only for students but also for teachers and researchers as well. Indeed, it seems increasingly clear that researchers able to master new technologies, i.e. those with meaningful access, will have a significant advantage over those that do not.
Institutional and Programmatic Context

This study took place in the context of a large communication across the curriculum program with a stated mission of fostering what has come to be called multimodal composition, or, as our program has it, the written, oral, visual, and electronic modes of communication. In our courses we teach projects like rhetorical analysis and personal narrative, as many programs do, but we also teach brochure and poster design, layouts and informational graphics, web design and web production, digital portfolios, and more. This commitment, along with the reach of the program across the campus, provided us with a way to assess technology implementations such as virtualized writing practices with a relatively large sampling of students. In doing so, we also depend in large part on educational technology, and the data we collected in this study came from two primary sources: the databases that structure the storage of our Moodle-powered learning management system, and that of Eli review, the writing virtualization tool we were piloting. We obtained database outputs of the Moodle system through its user interface, mediated at times by administrative-level access. The database outputs from the Eli system were obtained at our request from the Eli team’s lead programmer (though the development team has since built a user interface for exporting such data).

In both cases, the database outputs were in formats (as is very common) that attempt to represent three-dimensional storage structures in a two-dimensional format readable by common spreadsheet software, such as Microsoft Excel and Google Spreadsheets, in order to display them neatly on a screen. Because of the distortion inevitably wrought by transforming a three-dimensional relationship into a two-dimensional one, and because of the inevitable noise generated by such large-scale data
collection, our database outputs needed to undergo substantial processing for the data in them to be useful. This processing was carried out mostly using Excel, although a text editor (TextWrangler) had significant application in “grepping” (specifying complex find and replace rules) multiple files simultaneously, which aided in the removal of inauthentic characters from the text of student submissions. In addition, these tools were able to selectively hide and show rows of data, so we could group it in accordion fashion and thus bring previously distant quanta of data into juxtaposition. Perhaps from this, it is somewhat apparent how our own levels of technological literacy affected and were changed by our research.

With these resources, and under the auspices of our institutional research ethics board (see Appendix), we collected data from over a dozen of our writing courses, from first-year through advanced communications, from hundreds of different students at different points in the semester over the course of four concurrent semesters. The data we collected is comprised of a variety of different types, including the text of student papers and comments by students on student papers, timestamps of when separate comments were made, the text of peer response prompts and session instructions, as well as the text of project guidelines themselves. In addition to this, we collected survey data providing us with demographic information, as well as with insights into student perceptions about writing, feedback, peer-response, and the various technological interfaces mediating these communication practices.

These quantitative and qualitative data were analyzed by our team in very different ways, as might be expected. In the case of the latter, we coded the actual text of both survey responses and responses to student writing using an iterative approach based in grounded theory, where codes emerged from the coding process during group
meetings (both face to face and virtual) and were applied recursively in subsequent coding sessions, and in this way our codes evolved and became more sophisticated over time. For the purposes of this report, we will dispense with further discussion of the qualitative data analysis methods in favor of presenting a concise depiction of the former, the quantitative analysis, which is what most concerns us here.

Research Design

For the purposes of this report, we were working with the assumption that technological literacy, conceived of as a spectrum, is more than just knowledge inside someone’s head. It is more than just an understanding of technology, rather, technological literacy is actually a set of understandings about how things work with an aim toward doing them, as well as adaptable schema for adding to the set, much like a language, which altogether and in various ways enable and constrain activities and practices. In other words, technological literacy should have observable effects, that is, students with different degrees of literacy should perform differently from each other, since performance is the aim of literacy almost by definition. Our readers will note the rhetorical flavor of this definition. This approach prompted us to ask the questions: what effects do different technological literacy levels actually have on student writing and responses to student writing? Or, to put it differently, is there something we can measure that is different among students with different degrees of technological literacy? If so, how is this representative of some aspect of the process of composition?

To answer these questions, we selected from the array of qualitative and quantitative data just two data points: a survey-respondent’s self-reported level of technological literacy (on a scale of 1 to 5), indexed by the word count of each separate
response generated by that respondent in the various electronically-mediated peer review sessions across the course of a semester. We indexed self-reported technological literacy with response word counts in this way in four course sections, to aggregate the responses of 62 students in a total of 272 separate review sessions (by review sessions, we mean one student’s reading of another’s project, which may have taken the form of separate comments or a single longer comment). From these data, it was straightforward to establish a participant’s mean output in number of words for each review session, and to index these by self-reported technological literacy to display the mean output in number of words per response for students with different degrees of technological literacy. These data, especially when collated, indicate correspondence between the volume of words produced in each session and the respondent’s self-reported level of technological literacy, supporting the likelihood that technological literacy is indeed a factor in composing when it is significantly mediated by an unfamiliar electronic interface. In addition, from these same data, we were able to calculate the rate of increase between levels of technological literacy, expressed as a percentage, which may provide insight into the accuracy of self-reported technological literacy levels.

It is important to emphasize here that it was the spreadsheet-like output of the systems’ relational databases that made the collation of this data so attractive. By using spreadsheet formulas and find, copy, and replace techniques, we could tabulate word counts, derive mean values, and produce charts without ever having to touch a piece of paper or manually enter a long series of values, and we were able to do so quickly and efficiently. This is another example of how our own technical literacy, as researchers, enabled and constrained our practices. On the one hand, our expertise with various
systems allows us to enjoy a very high level of access and to quickly and easily bring previously disparate sets of data into juxtaposition, however, some data simply remained out of reach due to limitations of the systems, i.e. the structure of the databases themselves, which we lack the expertise in programming. While we admit this kind of analysis lacks sophistication, we ask readers to note that it is a method an individual teacher could quickly perform in her own courses, using freely available tools, provided she had access to an appropriately structured learning management system database output such as those we used. This method could also be used to analyze programmatic data, since it does not involve a standardized curricular implementation, but rather can be tailored from the data that is already collected.

Results and Interpretation

The biggest problem with large data sets in composition research is how little we can generalize from them. On the one hand, the more data we gather, the more it promises to tell us, but on the other hand, the more data we gather, the more we include work in different courses and for different teachers, and therefore the more we include different factors which affect the processes of composition. In our own research, this problem came to the fore when we began to tabulate results and to code responses. From the start, we had used a pilot test model, essentially testing the implementation of the Eli Review application in a writing program, and so participating instructors retained assignments and peer-response pedagogies, which were derived from programmatic materials. We made no attempt to standardize them more than they already were, as tempting as that might have been, in favor of the more realistic picture forgoing such standardization could portray.
However, when it came time to tabulate data, the price for this became apparent as each of us had different expectations from our students about what should be produced during peer-response. This meant that we couldn’t fairly evaluate students of different technological literacy levels across courses as a whole. To put it another way, we couldn’t look at total number of comments, words per comment, or words per quantum of time, because we had each specified different requirements for our students, or in some cases not specified them at all. Instead, we arrived at the following method: each of us had conducted roughly one or two peer-response workshops per major assignment in the course, or about five to seven each semester. During these workshops, students were required to read and respond to two to four of their peers’ projects. We call each of these individual responses, in which one student responds to the work of another individual, a peer-response session (as opposed to peer-response workshop, which include multiple sessions), and these sessions became the basis of our comparisons. For the purposes of this report, we gathered data, including the full text of all comments, on 272 such sessions. The word counts of the text of all comments were totaled for each session, they were indexed by that student’s self-reported technological literacy level, and mean values were derived for each level. For instance, in Figure 1, in the z-axis category A, mean output per session for students of technological literacy level 3 was 274 words. That means that the average number of words a technological literacy level 3 student in Course A produced when responding to another student’s work was 274. Typically this output was comprised of multiple comments working at different purposes, though occasionally they consisted of a single longer comment. However, because we tabulated words per session, we were able to calculate comparable values.
As the figure shows most clearly in courses C and D, the trend is obvious: as technological literacy level increases, the mean number of words produced per session also increases. While courses A and B exhibit different trend profiles, this is largely due to the small number of students with a self-reported technological literacy at those respective levels (pointing out the need for even larger data sets with better distributions), because when the data are collapsed, and outliers removed (artificially inflating the size of the data set), as shown in Figure 8, the mean output per session trend comes into greater relief.

According to these data, students who rated themselves as more technologically literate than their peers tended to produce more words per session than those who rated themselves lower. There are likely many factors at work here, as we might imagine, and so we would caution our readers against drawing easy conclusions from these data. We do not pretend technological literacy is the only factor contributing to these results, or
even the most important factor, instead we wish only to show that a student’s level of

![Mean Output by Literacy Level in Words per Session (n=272)](image)

**Figure 8:** *Mean Session Output by Technological Literacy Level in Words per Session*

technological literacy may indeed be a factor in the production of peer-response when that writing activity is significantly mediated by an electronic interface, as it was here, because of how closely production and literacy correspond. More research is needed to determine to what extent this is so. Additionally, we hope this kind of measure could serve as a rough and ready assessment of sorts, especially for the purposes of piloting new technology implementations. After all, if a particular software package, for instance, adversely affects the production of the least technologically literate members of the population, this information should be considered important when formulating the implementation plan.
One other thing becomes apparent when looking at these data: the level of increase is not static. For example, the difference in number of words per session is smaller between 4s and 5s than it is between 3s and 4s. This relationship is depicted in Figure 9, expressed as a percent increase in words per session. From this chart we see that, on average, a student with a technological literacy level of 3 produces 13.5% more words per session than a 2, while a 4 produces roughly 30% more than a 3, and by contrast a 5 only produces about 22.25% more than a 4. Contrary to our predictions, the percent difference was not static between technological literacy levels. We believe this suggests an insufficiently fine rating scale and inaccuracies in self-reporting. Some 4s rated themselves as 5s, or some 5s rated themselves as 4s instead, as just two examples. It is also likely that having students rate themselves on their own technological literacy introduces other factors, such as self-perception and affect. One potential way to
overcome these flaws is to attempt to triangulate the factor of technological literacy using some other instrument, such as a usability protocol, to correct for distortion and identify more organic demarcations between levels. The use of Eli Review, an unfamiliar platform to every participant, was serendipitous inasmuch as it ameliorated this distortion by providing a platform on which all users had a common level of familiarity to begin with.

We believe these findings are significant in two primary ways. First because all textual production upon which these word counts depend was mediated in these instances by the same technological interface, Eli Review’s, and that interface was unfamiliar to all students: i.e. none had ever used it before. In other words, every bit of text in these samples was produced via the same interface. This provided a ready means to begin to assess the accuracy of self-reported technological literacy. We expected that if technological literacy were a factor, it would become apparent when the factor of familiarity, and therefore prior practice, were removed, and we can see which students were perhaps less technologically literate than they had claimed, as well as the general trend supporting this supposition. We believe our data confirm that self-reporting of technological literacy is accurate to this degree, with notable exceptions at the tops and bottoms of the literacy value scale.

Second because, while a measure of word output is not necessarily the most useful one for evaluating writing processes, we believe it can provide telltale information about complex interactions between factors. In other words, although a writing teacher may not care whether a student produces 55 more words than another student in a session (writing teachers tend to care far more about which words are produced), we believe it likely that the volume of production may be indicative in some ways of the
required amount of effort the student must have expended. If technological literacy level affects the processes of doing, then it makes sense that it would affect the number of words that could be produced. By and large, what our data show is that more research is needed to understand how the factor of technological literacy interacts with other factors in the production of student writing and student responses to writing. We also believe these kinds of measures are obtainable by all teachers who use such systems to varying degrees, and so we recommend the use of such systems as a ready means of assessing large quantities of data and as a means of fostering technological literacy among student populations, as well as among teacher/researcher populations.

Implications for Research in Writing

As researchers, it is exciting to have access to such large quantities of information, but it can also seem overwhelming at times. Indeed care should be taken with digital collection lest information be mislaid or confused, sometimes for unforeseen technical reasons. For example, during one of our early data collection meetings, our team came to the realization that one set of surveys had been made anonymous so completely that we no longer knew which students we needed to exclude from the data pool as non-participants. In fact, we had made the responses anonymous too early in the data collection process, and because of the way the learning management system performed the anonymization, it could not be undone.; student identities had been permanently removed from the outputs. Fortunately, here again we benefited from our high levels of technological access. Exploiting the syntax of PHP get requests in survey response page URLs, we were able to pull unique session IDs, and with the aid of a custom database query, we correlated these with their originating user IDs, re-
associating the students with their responses. From this we were able to extract non-participating students before making the data pool anonymous again. Such a solution would only be possible at the confluence of high levels of access: when one of the researchers understands how the system works and how to exploit it, and also has the administrative privileges necessary to access the databases, rather than only depending on the program’s interface. We were able to complete the fix in just an hour, whereas had we needed to contact database programmers through a technical support service, who knows how long it may have taken. Were our level of access too low, we may have assumed the data were gone completely. In any case, when one or more of the system administrators are also researchers, the combination can be powerful.

This kind of research must be tempered and refined. Word counts may be useful when correlated with other data, as we’ve shown, but there are so many things about which word count tells us very little. Other routinely kept data, however, might prove equally valuable. Even simply creating a record of how many peer response sessions are performed across the program, and roughly when, could have a variety of applications for a program administrator, but when taken with other kinds of measures which are increasingly becoming available, such as the response rating and the endorsement tools integrated into Eli Review (by which students and teachers rate and endorse others’ responses to build positive feedback cycles), when combined, could perform powerful assessment routines. A variety of other avenues present themselves. Having easy access to electronic copies of all student texts opens the way for sophisticated language analysis techniques, and even relatively simpler ones like cluster analysis, that can reveal patterns in large data sets. We could also imagine the kind of analysis that could produce a sort of linguistic corpus of peer responses, perhaps supplemented by real-
time ratings data, which could serve students as a learning resource to improve their own practices of and to foster understandings of genre-like features of peer response.

One thing we lacked, for instance, which such methods as we describe could provide, are benchmark metrics in the data of writing programs, especially in large scale collation and along common lines, against which other results could be based. Similar to the so-called RAD approach (replicable, aggregable, and data-supported) favored by Lang and Baehr (176). With these, we could begin to determine the statistical significance of the observed effects technological access has on the production of electronic communication, among an array of other things. For instance, a longitudinal record of even a dozen course sections a semester over say two years time, with some basic analysis, could provide the foundation for far more sophisticated statistical techniques, as well as serving as an invaluable resource for a team of researchers, and these data are by and large already being recorded by leaning management system databases, the vast majority of which are kept behind service paywalls. What is lacking are the various kinds of access among the professorate itself, that, culminating in meaningful access, would allow us to take back control of the knowledge we produce and put it to service. The price we pay for the lack of meaningful access is great. It means to some extent that our data stand alone. They cannot be reproduced. They are not part of a larger body of growing knowledge. They are instead the isolated readouts of mysterious databases, gathering dust in some storage closet, costing us resources instead of yielding up their productivity.

Not only do we need better metrics than word count, we need better theory and pedagogy to account for differences in access levels. While a sophisticated understanding of the literacy landscape, as Selber describes, or of Banks’ quilted web of
access, is useful for theorists to understand how large social forces work in consort, it is also necessary for individual teachers and researchers to become custodians of their own data as well, and, with appropriate safeguards, to make these data available to others. From these we may develop better theories to account for observable differences in access among our students and learn to better foster the kinds of literacies our students need to acquire to empower themselves in an information age where access, quite literally, is power. We might glimpse the constitutive elements of transformative literacy experiences, we might begin to assess technological skills and habits, to establish pedagogies and recommendations to build the kinds of multifaceted knowledge producers we hope our students will become. At least, increasingly it seems, those who are able to leverage the data itself are given increased advantage. For this reason we would recommend individuals should cautiously make use of rough measures of writing, such as those routinely kept by our knowledge systems, and familiarize themselves with the processes and organizations of data available already.

Finally, as a professorate, we need to work in other ways to improve our own levels of access as well as those of our newest members. Database organization and structure, as well as common database programming languages and interfaces, should be included in surveys of digital communication, and departments and programs should move to provide faculty administrators with program-specific database access privileges on par with those of the actual database administrators themselves, with appropriate policies developed around security, storage, and compensation. In addition, more of the professorate needs to spend more time mastering these technologies themselves so that we can participate fully in the process of software creation and development in such a way as to be able to influence the kinds of data recorded and their relationships amongst
each other. Software like the systems we used in this project, developed as they were with high degrees of faculty participation, are those most likely to supply the kinds of meaningful access we wish to provide students, teachers and researchers. When writing teachers and researchers can build and work on the systems themselves, great affordances are revealed, as the relationship becomes in a sense reciprocal, and so both writing technology and writing research are improved.

Works Cited


Since Paulo Freire's emancipatory pedagogy entered the discourse of composition studies, the field has shifted greatly both in terms of cultural demographics and technological development. In response to the challenges presented by this shift, critical media pedagogies seek to encourage a broad-based investigation of communication practices in the media age and foster critical, democratic faculties. In a 2008 policy brief, the National Council of Teachers of English (NCTE) called for practices that prepare students in the 21st century literacies required by a changing world, which demonstrates that the need has not gone unrecognized and, to a certain extent, might enjoy a relatively high level of visibility among both scholars and practitioners. However, the question remains of how to foster these literacies. The mediascape itself shifts frenetically, while technology steadily advances. What does a pedagogy based in 21st century literacies look like in the changing digital/multimodal classroom? Indeed, what should it look like? How can any pedagogy retain currency as culture and technology change so rapidly?

To partially answer these questions, I advance the concept of culture jamming, a kind of social activism that appropriates, subverts, and then reintroduces rhetorical artifacts into the media stream. The kind of culture jamming I describe and advocate here is more than just a class assignment or student project; it is a kind of pedagogical stance that empowers both students and teachers and catapults politics and pedagogy
into dialogic interaction with one another. In much the same way that critical media pedagogy unites Freire's pedagogy of liberation with the New London Group's multiliteracies, culture jamming unites 21st century literacies with a democratic agenda that seeks for each voice to heard fairly. To this same end, Henry Giroux (1996) has argued for the necessity to find "ways in which the pedagogical can be made more political and the political more pedagogical" (p. 63). The practice of culture jamming (both by teachers and by students) responds to this exigency by offering a model to develop critical media literacy within the shifting context of a digital/multimodal composition classroom.

Although the philosophical roots of this kind of activism go back decades, even centuries, the term culture jamming itself is more recent, and has evolved rapidly in a short time. As I will show, a singular definition of jamming is problematic; nevertheless, I take culture jamming in the context of a composition classroom to mean a practice of social activism that, through appropriation, improvisation, and playful critique, makes visible the ways in which social, cultural, and individual realities are constructed in order that they be subverted to more democratic ends. In both figures here, the jammers have subverted a commonplace image in order to make a critical, political statement. "Stop War" comments on the relative potency of signs, while "Corporate America" questions where our allegiance lies. The former tends to be seen as misdemeanor, the latter as comedy.

This web text examines the pedagogical theories at the intersection of critical media literacy and culture jamming and posits a nuanced definition of the latter, both as pedagogy and as practice, appropriate for a multimodal classroom. These theories underlie the subsequent description of how culture jamming could be enacted in three
phases in a first-year composition course, and inform the closing discussion of challenges faced by culture jamming in the curriculum. The images, links, and references contained here may provide some resources for teachers and students engaged in culture jamming projects.

Public vs. Critical Pedagogies and Literacy’s “Doubling” Empowerment

Literacy and pedagogy scholars influenced by Friere have developed a number of divergent but complementary theories to address the problem of how to enact pedagogies of liberation, theories which can best be described by the interrelated concepts of “critical literacy” (Giroux, 1988), “multiliteracies” (New London Group, 1996), and “intermediality” (Watts-Pailliotet et al., 2000). These concepts can be profitably united under the umbrella of “critical media pedagogy” (Kellner, 2000), which recognizes and offers a response to the public pedagogy promulgated by the mass media (Giroux, 2003 and Szeman 2002). If critical media pedagogy seeks to reveal the underlying ideologies of public pedagogies and to envision literacy as an empowering force providing individuals and societies the means to create a more just, egalitarian, and democratic world (Kellner, 2000, p. 200), then from this perspective, critical pedagogy arises as a means to counter cultural hegemony in public pedagogies. These two-critical and public pedagogies-stand in violent opposition.

To understand how elite interests maintain hegemony, we must first understand the role of the media culture as a purveyor of public pedagogy. Kellner (2000) wrote:

The media are an important form of socialization and pedagogy that teach proper and improper behavior, gender roles, values, and knowledge of the world. One is often
not aware that one is being educated and constructed by media culture; thus its pedagogy is often invisible and subliminal (p. 200).

Because of the “invisible and subliminal” nature of public pedagogy, the media are engaged in an insidious educative practice that instructs children and adults in the dominant ideologies, that is, ideas about how to see the world, its inhabitants, and our places within it. This education is so insidious precisely because it masquerades as mere entertainment or transmission of information and thus achieves a powerful persuasive agency. The media, in this overly simplistic view, are not trying to teach us things; they are only mirroring the world as it is.

Coming from a perspective that reality is socially constructed and mediated by language, we know that nothing could be further from the truth (Berlin, 1988). “The world as it is” is itself a social construction that represents and furthers the interests of the elite. Kellner is not the only figure noting the educative function of the media. In Giroux’s later work he writes of how “learning takes place in a variety of public spheres outside of the schools” (2003, p. 13) and identifies the media as a key site for this learning. As another example, Imre Szeman (2002) examines how the media has constructed the narrative of globalization in order to explain that:

the triumphalist rhetoric of politicians and business leaders, the lessons proffered by newspaper columnists and TV news anchors, as well as the fast-cutting globe-hopping ads of dotcoms, financial services companies, and hardware giants - all . . . constitute a form of public education (p. 4, emphasis added).

It is precisely this hegemonic construction of reality Kellner warns against and that provides the motivation for a countermovement requiring “critical approaches that
make us aware of how media construct meanings, influence and educate audiences, and impose their messages and values” (Kellner, 2000, p. 200). If citizens can use critical faculties to become aware of how meaning is constructed in the media, the invisible made visible and the subliminal made conscious, the ideology is robbed of much of its persuasive force, for it can no longer be seen as mere entertainment depicting “the world as it is”, and instead can only be seen as serving some interests at the expense of others. The question that remains, then, is whose interests are being served? To answer this question, we must look at the corporate structure of media conglomerates and to the work of mass media scholars.

Since the late nineties when conglomeration accelerated, many have worked to raise awareness about the increasing domination of the global commercial media system by western transnational corporations. According to the Free Press, today, the US system is overwhelming dominated by only five massive, vertically-integrated firms: General Electric, TimeWarner, Disney, Viacomm, and Rupert Murdoch's News Corporation. Keeping track of all of these conglomerates’ holdings is a huge task, but just one company alone, TimeWarner, owns fourteen major music labels, including Columbia House, Time Life Music, and Warner Bros. Records, to name just a few; fifteen major TV networks including HBO, CNN, TNT, TBS, Comedy Central, Cinemax, and many others; seven major book publishers including Time Life Books and Little, Brown & Co.; over twenty-two major magazines like Time, Life, Fortune, Sports Illustrated, Money, People, and DC Comics; four major film studios including Warner Brothers Studios, Castle Rock Entertainment, and New Line Cinema; eight major internet companies like America Online (AOL), CompuServe, and MapQuest; even non-
media interests like the Atlanta Braves and World Championship Wrestling (Frontline, 2003).

Such massive media holdings call into question the whole idea of free market economies and even democracy itself. The economic advantage leveraged by these conglomerates prompted Robert McChesney (1997), a prominent scholar of mass media communications, to write, “Firms that do not have conglomerated media holdings simply cannot compete in this market” (p. 1). The reasons for this are because a single product, like a film, can generate a number of spin-off products like theme park rides, TV shows, soundtracks, videogames, books, and more (McChesney, 1997, p. 1), which multiply profits, and because advertising across media is streamlined, so that the trailer for the film can be shown on cable and network TV channels, on the internet, in newspapers, and in magazines all owned by the parent company. But the effects of these advantages are more destructive than simple profiteering, and McChesney goes on to argue that the system:

works to advance the cause of the global market and promote commercial values, while denigrating journalism and culture not conducive to the immediate bottom line or long-run corporate interests. It is a disaster for anything but the most superficial notion of democracy—a democracy where, to paraphrase John Jay's maxim, those who own the world ought to govern it (p. 1).

Thus the question of whose interests are served by the public pedagogy promulgated by the media is answered quite simply: public pedagogies serve the stockholders’ interests and no one else’s. This brings to mind the words of Milton Friedman, proponent of neo-liberal economics, who wrote “there is one and only one
social responsibility of business—to use its resources and engage in activities designed to increase its profits” (Friedman, 1970).

To counter this, the coincident and complementary projects of radical democracy and critical literacy have arisen. According to Friere, literacy is the necessary precondition for self and social empowerment. But, we must be mindful of Giroux’s helpful distinction between literacy as a precondition of, and literacy as a synonym for, liberation, and we must not assume that mere acquisition of literacy is ever enough. “To be literate,” Giroux (1988) wrote, “is not to be free. It is to be present and active in the struggle for reclaiming one’s voice, history, and future . . . literacy neither automatically reveals nor guarantees social, political, and economic freedom (p. 65, emphasis in the original). Here, Giroux refers to the inescapable fact that literacy is just as often used as a tool of oppression as a means to freedom. While literacy does not guarantee freedom, freedom will not be had without it.

So, as a precondition, literacy can provide the means necessary for a citizenry to apprehend and critique the hegemonic interests that perpetuate oppression, silence, and human suffering. “It provides tools,” Kellner wrote “so that individuals can dissect the instruments of cultural domination, transform themselves from objects to subjects, from passive to active” (2000, p. 198). It is in precisely this transformation from object to subject that literacy enacts its empowering capabilities. Objects are without power, to be moved at the will of others, while subjects themselves move, do, and act as agents in their own right. This is not to say subjects are sovereign in their action, merely that, in Giroux’s terms, they are *active* in the struggle for self-reclamation. Certainly they are constrained, but it is these constraints that become the focus of the subsequent resistance.
Once citizens are aware and active, once they have achieved subjecthood, only then can they begin to resist oppressive forces, which they do through the medium of language. This stems directly from literacy’s “doubly empowering” capability. Kellner writes that critical media pedagogy is “doubling empowering, [both] freeing individuals from media manipulation and domination and [also] enabling self-construction and the creation of more cooperative and democratic social relations and institutions” (201). Not only, then, does the acquisition of these literacies allow citizens to see the constructed nature of the worldview presented by the media, it also gives the tools necessary to craft an alternative view of the self and the world, which can create the conditions for a more democratic society. This “doubling empowering” capability not only criticizes hegemonic domination, it also presents a useful and productive alternative. In fact, as will be seen with culture jamming, its very efficacy depends on this doubling empowerment, because, on its own, neither of the functions is sufficient. Mere critique on the one hand or identity construction on the other do not provide potent enough countermeasures because the former is locked into a dialectical tug-of-war with that it seeks to criticize and the latter has no basis for identity construction as a form of resistance. Together, however, critique and alternative can provide a powerful form of resistance indeed.

Culture Jamming as a Critical Public Pedagogy

Despite the conflict between public pedagogy and critical pedagogy, there is some promise of resolution. The practice of culture jamming offers such a resolution because of its liminal position between the two opposing pedagogies: it is public in the sense it masquerades as legitimate media and propagates along channels similar (sometimes
identical) to those used by corporate media, but it is profoundly critical in the way it seeks to reveal the constructed nature of ideology. Whether public or critical, its goal is fundamentally pedagogical because it operates by teaching its audience, fostering awareness, and, in the best instances, offering productive alternatives. Although culture jamming unifies public and critical pedagogies, the unification is far from pacific or harmonious, and many culture jams are badly flawed by internalized contradictions, pedantic in their slavish devotion to a particular political dogma, or dismissible as adolescent mockery, the product of a sarcastic age. Creating culture jams which avoid these pitfalls and which are both successfully public and successfully critical is no minor feat and requires we commit ourselves to rhetorically effective kinds of jamming with the goal of empowering students.

There is surprisingly little scholarship on culture jamming, a lack that is all the more apparent because of jamming’s historical tradition and its activist orientation. While a number of books and articles discuss culture jamming as a phenomenon, there are few scholarly treatments of culture jamming as a pedagogical practice. Primarily in visual arts, consumer, or media studies, these focus on the technical aspects of production, not on the political or pedagogical implications (see Darts “Visual Culture Jam: Art, Pedagogy and Creative Resistance” as an example in visual arts to the contrary). One chapter (Webber, 2009) from a composition studies text provides a useful example of a Photoshop assignment and some motivating theoretical concerns, but the chapter fails to tie the practice to critical media pedagogy or the larger projects of multiculturalism and radical democracy. Furthermore, the article fails to distinguish between the different rhetorical foundations of different culture jams. Clearly there is a pressing need to situate culture jamming within composition pedagogy in order to take
advantage of the unique affordances offered both by the practice itself and by composition studies’ central role in the academy. In the remainder of the paper I will attempt to outline what this theorization might look like applied to a classroom setting and identify areas where more investigation is needed and where future challenges are likely to arise.

As I mentioned at the outset, a singular definition of culture jamming is problematic because the goals of culture jamming differ widely from each other, encompass a variety of media, and find their expression in diverse activities. Graffiti, for example, can productively be seen as a form of culture jamming, as is, according to Lasn (1999), something as mundane as television channel surfing to avoid mind-numbing advertisements (p. 15), but these are not the kinds of activities I advocate for inclusion in a composition classroom. A definition of culture jamming that includes all the varieties is difficult to formulate, and less than useful for pedagogical purposes. If we take the definition I offered previously— that culture jamming is a practice of social activism that, through appropriation, improvisation, and playful critique, makes visible the ways in which social, cultural, and individual realities are constructed in order that they be subverted to more democratic ends, then two key discussions emerge. These discussions revolve around the different denotations of the word “jamming” and around the rhetorical strategies underlying the jamming activity.

In the first discussion, the term jamming has two alternative denotations. On the one hand, it is used in the sense of radio jamming, that is, as an introduction of noise into a system so that the signal is blocked or disrupted. When used in this way, culture jamming is the introduction of contradictory or subversive messages into the media stream in order for the stream to become disrupted. There is, however, another sense of
the word jamming that denotes a musical performance. In this sense “jamming” is a kind of improvisation, an extended back-and-forth between different musicians to create an extemporaneous piece made of spontaneous variation. When used in this way, culture jamming is an improvisational creation based on a dialogic interaction between different artists or creators. When encountering the term “culture jamming” readers should remain aware of both meanings of the word, disruption and improvisation, in order to understand the full range of activities the term may denote.

The second important discussion about culture jamming involves the useful distinction made by Christine Harold in her excellent analysis of the rhetorical efficacy of culture jams. Harold (2004) argued that there are two kinds of culture jamming activities based on very different rhetorical foundations. The first, which she called “mere parody” (p. 190), depends on a rhetoric of negation and fails to provide an alternative vision. Furthermore, it perpetuates the very kind of binary thinking the parody seeks to negate. The second kind uses a more efficacious rhetorical strategy; Harold named it “pranking” (p. 192). Rather than simplistically negating an ideology, prankng works to appropriate the utilized strategies and divert their ends. According to Harold, while parodistic culture jamming “does little to address the rhetoric of contemporary marketing” (p. 190), on the other hand, the “playful . . . strategies of the prankster have much to offer social justice movements” (p. 192). In making this distinction, Harold elevated one rhetorical strategy over another, less effective strategy. It is crucial, in teaching practices of culture jamming, that we differentiate between the rhetorical moves that underpin the projects and strive to encourage the most effective: those based on play, on appropriation of resources and modes, those that divert rather
than those that consist instead of mere negation and only perpetuate the binary thinking they oppose.

These two discussions about denotation and rhetorical foundation inform our larger discussion because, provided we pursue the most effective kinds of jamming (those based on improvisation and those which offer useful alternatives), the jams we produce function as a kind of pedagogy. Like critical pedagogy, culture jams seek to subvert the hegemony of the media’s public pedagogy, to reveal the underlying ideologies that inform it, and to empower citizens to subjecthood and to attendant action. The similarities between the methods and goals of culture jamming and those of critical media pedagogy are striking; a definition for one could well serve as a definition for the other. Both function by making the invisible visible and by fostering individual and social agency, and both serve the larger goal of democracy.

Jamming in the Digital/Multimodal Composition Classroom

Drawing on these theories of critical pedagogy and culture jamming, I will now outline what a culture jamming project in a contemporary composition classroom might look like, what its benefits are, and what challenges teachers might face in enacting it. The project I describe is a series of three interconnected assignments that students complete both individually and in collaboration with their peers:

1. Case studies of historical and contemporary culture jamming campaigns that result in written rhetorical analysis.

2. Creation of an original culture jamming campaign that results in a multimodal artifact or series of multimodal artifacts.
3. Development of a “press-release” package explaining the mission of the culture jam in integrated video, audio, and print media. Each assignment could stand by itself, but by sequencing them together teachers can take advantage of recursivity and revision to help students better understand the composition process and produce more effective, polished campaign artifacts.

Before beginning, however, I should clarify what I mean by asking students to undertake these activities. Culture jamming in the context of a classroom is a relatively safe endeavor because the products are not widely disseminated, the intent is clearly educational, and students can be protected from potential corporate or institutional reprisal. But let me be most explicit: I do not advocate that, as a course requirement, students make their culture jams public by posting them to the internet, around campus, or in their communities. There are too many real risks involved and the ethics of such a requirement are extremely questionable regardless of the benefits. What I do advocate is that students engage in a form of culture jamming limited to a classroom audience, and that their materials go no further than student computers or secure course websites. Even though the audience should be limited to the classroom, students can and will imagine a larger audience for their project.

Rhetorical Analysis: Case Studies in Culture Jamming

The first phase of the larger project engages students in researching historical or contemporary culture jamming campaigns in order to understand the motivation, rhetorical strategies, and eventual outcome of the activism. Teachers may decide to allow students to identify campaigns of their choosing, present possibilities for students to choose among, or assign cases to students. Each model has its advantages and
disadvantages. In the first model, students have the freedom to decide which campaigns most interest them; while in the third model, teachers can ensure the cases studied exhibit rhetorically effective strategies. Some promising cases for study include the Joey Skaggs’s “Cathouse for Dogs,” the OBEY sticker campaign, INFKT Truth’s anti-tobacco campaign, or the activities of the Barbie Liberation Organization, the Biotic Baking Brigade, and the press-release hoaxes of The Yes Men. Each of these examples use appropriation and improvisation to subvert and redirect media distortion of information rather than strategies based on mere negation, and thus provide illustrations of rhetorically effective ways that culture jamming has been and can be accomplished. There are many, many other possibilities here. For example, case studies of the European Situationists, of whom many culture jammers see themselves as “political heirs” (Harold, 2004, p. 192), the billboard banditry of the Billboard Liberation Front, or “Negativland, the graffiti artist Robbie Conal, the parody billboard painter Jerry Johnson, and Reverend Ivan Stang of the tongue-in-cheek Church of the Subgenius cult” (Dery, 2010, p.1) may prove profitable for students, as may case studies of culture jams which do not exhibit rhetorically effective models, like some campaigns run by Adbusters, for example.

While students should write the rhetorical analysis individually, they should conduct the research in collaboration with their peers in order to give time for teams to develop collaborative strategies and for interests and personalities to “gel” into a functioning unit. In a project such as this, self-selected student groups will likely work best, but students need some basis for their decisions about who to work with. I suggest in-class activities designed to elicit student perspectives on prominent social, political, economic, and environmental issues and extensive sharing of those perspectives so that
students have as good an idea as possible what their peers care about to serve as a basis for choosing team members.

I see extensive collaboration as essential to this project not only because of practical reasons (the amount of work required) and not only because of strong evidence that knowledge is developed in collaboration, but because collaboration in culture jamming models reality. Resistance is founded on group activism and cannot succeed without group support. While it is not necessary to recapitulate the many benefits of collaboration (see Bruffee, 1984, p. 640 and p. 642), there is, however, at least one way in which the kind of project I describe can add usefully to our understanding of the role of collaboration in critical pedagogy and that is its unifying, constitutive function. In the process of collaborating on a culture jamming project students may begin to see other members of their group as allies in a way that is different than in other collaborative projects. When engaged in typical collaborative projects students may indeed come to depend on each other, but not to the extent and not with the same quality that they come to depend on each other when engaged in an act of resistance. Something about jointly resisting the same thing unites people more than simple pursuit of the same ends (i.e. a grade). Because of this, collaborative literacy is more than “doubling empowering,” it is tripling empowering in that it not only reveals the way ideologies are constituted and gives the tools to constitute a self, it also gives the tools to constitute a society in relation to others.

Creating the Culture Jam: Jamming What Matters

As the centerpiece of the culture jamming project, student groups are asked to create an original culture jam of their own— that is to appropriate a rhetorical artifact
and alter it in order to reveal how it distorts information, and to subvert and redirect it to other ends. These may take any number of forms, such as posters, stickers, tee-shirt graphics or even short commercial spots. The culture jam itself will most likely be multimodal in nature and requires the development of skills in graphic and textual design, image or video editing, and print or electronic production processes. (For a discussion of concerns about access to software or the business practices of large software firms, see the “Challenges” section below.) Rhetorically effective strategies must be emphasized so that students go beyond mere mockery to provide useful alternatives, but otherwise students should be free to choose the subject of their jams because, in that choosing, their agency becomes manifest and their groups coalesce around a focus of resistance.

Teachers may be greatly tempted (and with some reason) to determine what issues constitute fit subjects for jamming, or may merely wish to constrain available options, but I feel it is essential that the motivation for the jam arise organically from the group which will produce it, because this ensures students feel real agency and groups can engage in collaborative resistance. Teachers may be tempted, for example, to encourage the jamming of rhetorical artifacts involving a constellation of issues like gender roles, consumerism, globalization, politics and so on, but students will not feel their own agency unless they are allowed to address issues important to them, no matter how trivial these issues may seem to others. More important, in my estimation, than the outcome of the jam is the “doubling empowering” effect of acquiring the literacies involved in the project, and this requires the students themselves determining what they wish to use rhetoric to resist.
Crafting the Press-Release Package and Intermediality

As the final assignment in the sequence, student groups are asked to collaboratively create a multigenre “press-release” package to complement the jam and complete the campaign. In this assignment students must consider how the public would perceive the jam and how they can productively shape that perception. In a number of high-profile culture jamming cases like those perpetrated by the Barbie Liberation Organization, The Yes Men, and the Biotic Baking Brigade, the inciting groups use the resources of the industry itself as a means to disseminate information about their activities. Historically, they have done this by preparing a “press-release package” that combines a public statement, interviews, film of the project, and perhaps instructions about how to repeat the action, for preemptive distribution to media outlets in order to shape what message the news will disseminate (see Harold 199 and 202). This is an appropriation of a strategy in wide use by corporations that, to create a buzz, take advantage of content-starved and budget-strapped media outlets in order to author their own message, rather than rely on the media to author it for them.

Diverse examples of such packages can be found online, and many fruitful possibilities exist both in terms of genre variety and rhetorical strategy. For example, the packages may include a traditional text-based press release, video clips of staged interviews with the culture jammers themselves and with non-participants (such as fictional consumers or bystanders), as well as video montages which incorporate text, still images, and video to encapsulate the culture jamming project and put the authors’ “spin” on the motivations for it and the justification of the means by which it is enacted. This assignment provides a measure of recursivity as students need to return to the earlier assignments in the sequence to determine both possibilities for shaping public
perception of their jam as well as analyzing the jam itself. It also provides another layer of rhetorical action. Not only must students draw on rhetorical strategies to subvert distortion of information by the media, they must also participate in rhetorically effective ways of shaping the public perception of their project through a variety of media (including print and video) working in a variety of genres (interviews, public statements to name two).

One of the prime gains of this final assignment in the sequence (and to a significant extent of the first two) is what is known as intermediality. This term and its implications for critical pedagogy were developed in the work of Anne Watts Pailliotet and Ladislaus Semali (2000) who defined it broadly as “the ability to critically read and write with and across varied symbol systems” (p. 208). Since new media incorporates a multiplicity of forms - including print, aural, visual, semantic, narrative, and hypertextual forms - and because these different forms operate within (sometimes widely) differing semiotic systems, intermediality is the type of literacy that provides fluency in the interactions between and across the modes with a focus on points of intersection and points of divergence. Intermediality is fostered throughout the culture jamming project as students navigate search engines and query databases to both interpret and interact with a variety of semiotic fields, including icons, drop-down menus, and web pages (each containing a wealth of semiotic material amongst which differentiation is essential); as students develop consistent rhetorical strategies across series of linked assignments and across genres; and as students envision, design, and produce their materials.
Challenges to Enacting Culture Jamming in the Curriculum

I’d like to close this description of the project and its benefits with a discussion of some of the dangers it poses, and a look ahead to emergent challenges. First, and most importantly, I do not suggest that culture jamming should be broadly instituted in a first-year composition curriculum (and in fact I feel that great care must be taken in using the assignment at all). Regarding critical media literacy, Kellner (2000) warns, “it would be a mistake to attempt to institute a top-down program . . . imposed from above on teachers, with fixed texts, curricula, and prescribed materials” (p. 206), and this same danger is even more acute with culture jamming. Not only do different teachers have different pedagogical concerns and different interests, but more importantly there is a real risk that the university itself may stifle the empowering function of the culture jam if it were to be mechanically imposed. The danger amounts to a reproduction of the same kinds of power structures that culture jamming seeks to subvert. Opportunity exists here, however, for real and critical resistance provided individual teachers remain flexible about what constitutes culture jamming. Jamming the jamming assignment itself, for instance, could be productively and legitimately seen as effective, however much it targets the teacher and the classroom. Students should be encouraged in, rather than dissuaded from, thinking along these lines, and a prescribed program mandated from above makes this unlikely.

Second, irony that smacks of the hypocritical may reside in requiring students to actively resist authority and making their success in a course contingent upon that resistance. This potential hypocrisy poses a grave danger to the critical efficacy of this kind of project and its radical democratic goals. On the one hand the project asks students to take on the role of agent to effect change, but on the other it imposes this
role upon them, potentially recreating the hegemonic institutions it seeks to subvert and co-opting the spirit of the culture jam in the service of education. In order to avoid undermining the democratic goals, culture jamming must be undertaken thoughtfully, with sensitivity, and above all with the larger goals firmly in mind. Not only the marketing practices of large corporations distort information, but other institutions such as the federal and local governments, and even colleges and universities do as well, as they market their products for their consumers, our students, sometimes in more insidious and thus more dangerous ways, and potential culture jammers must keep this larger context before them at all times.

There is a third danger involved in the production of culture jams that is more easily resolved, but no less important to mention, and that is the use of proprietary software to appropriate and edit images used in the act of jamming. Many will see the use of software like Microsoft’s Word and Paint programs, like Adobe’s Photoshop, and Apple’s iWeb as embodiments of the kind of corporate interests that jamming tries to subvert and will claim that, whatever its ends, using this software as a means to those ends is hypocritical and undermines the project itself. Others would say that access to this software represents the kind of class distinction that culture jamming is dedicated to overturning. However much I may sympathize with these lines of argument, I do not think they are sound. First, I do not believe it is hypocritical to use the tools of the oppressor against him. In fact a long tradition extends from this and a certain poetic justice pleases the culture jammer in me. Second, a wide range of free and open-source software packages exist that perform the same functions as those proprietary packages I mentioned, open-source programs such as GIMP, Photoscape and many others. In fact, for whatever application, likely an open-source alternative is available. There may even
be a greater degree of traction to be had by using these alternatives, but in any case they are freely available and widely distributed and thus access and propriety should not be a barrier to culture jamming projects.

These challenges, however, pale in the face of the greatest challenge to culture jamming projects: the 1998 Digital Millennium Copyright Act (DMCA), which mandates criminal penalties for copyright infringement, even, unbelievably, in instances where no infringement has occurred. This law grants sweeping powers to copyright-holders and criminalizes many aspects of artistic appropriation, as well as increasing already existing penalties. One of the main points of criticism leveled by the DMCA’s opponents (such as the Chilling Effects clearinghouse) is that the law creates a system where copyright holders need only to issue a takedown notice (which is very easy to do in the age of email), while the burden of proving the material did not infringe copyright is on the content provider or host. Furthermore, according to Chilling Effects (2010), “By using a technical device to protect music, images or words the copyright holder can turn traditionally permissible access to or use of digital content into a civil violation” (p. 1), meaning that, because of the way the DMCA is worded, what was once considered fair use is now considered an actionable offense, literally due to a technicality. Chilling Effects claims, to general consensus, that the DMCA has “chilled” or restricted the freedom of speech. Great care must be taken not to expose our students to such danger.

These takedown notices, as one might expect, have ballooned because it is so easy to issue them and because the targeted content providers do not often have the resources necessary to dispute them in court. According to Chilling Effects, “combined DMCA takedowns totaled 11,500 from Jan. 1 to Dec. 15 2010” and that the music industry was by far the most recurrent agent of takedowns. Chilling Effects reports “the
most frequent senders of DMCA takedown notices remain the music industry, whose institutional members have sent a combined total averaging roughly 5 takedowns a day” (Seltzer, 2010, p. 1). Takedown notices in specific, and the DMCA in general, represent a grave threat to culture jammers who attempt to distribute their materials via the web because such materials often appropriate copyrighted materials and thus are open to charges of copyright infringement even when the appropriation falls under fair use. However, the DMCA and the corporations that use it for continued economic advantage present a target for culture jamming that is rich with political and democratic significance; and the dangers posed by the laws should not be used as an excuse for inaction. Chilling Effects and other organizations like the Electronic Freedom Foundation (EFF) offer content providers free legal council and, oftentimes, legal aid to dispute spurious takedown notices.

Conclusion: Composition at the Bleeding Edge

Culture jamming is more than just an activity; it is a pedagogical stance. We as teachers of critical thinking have already, to an extent, engaged ourselves in culture jamming inasmuch as we discover and depose the underlying ideologies evident in mass media. A view of culture jamming as a critical public pedagogy has much to offer the intimately related projects of critical literacy and radical democracy, but only if we are committed to rhetorically effective kinds of jamming and only if we allow students to empower themselves with it. The main benefits of culture jamming include its doubling empowering functions: the ability to perceive the way ideology underlies media communication and the tools with which to construct competing identities, as well as the constitutive and unifying nature of collaborative resistance. Much more needs to be
done in terms of better theorizing culture jamming as it applies to teaching, and we must thoroughly examine the implications of seeing ourselves as culture jammers engaged in teaching that is itself culture jamming. There are great challenges embodied in the corporations that represent elite interests, but there are reasons for hope represented by the power of discourse itself to effect resistance.

Culture jamming is critical media pedagogy at the bleeding edge, and as such it poses substantial risks and faces significant challenges. The gains, however, promise to be equally significant, and, provided teachers approach the project with awareness of its theoretical underpinnings, its democratic goals, and issues relating to enacting it, the risks can be manageable. Over time, as consumer rights groups and other activists (culture jammers included) make progress against oppressive laws like the DMCA and against the disastrous deregulation of the media industry, some of these risks may be mitigated or even removed entirely.

But perhaps I am being too hopeful. Perhaps corporate interests will only continue to dominate society until democracy is obsolete and, as McChesney fears, those who own the world will govern it. Perhaps, as Henry Giroux has said, quoting Theodore Adorno, these threats to democracy constitute “a prohibition on thinking itself” (2003, p. 8). I don’t know. But, what I do know is that activism like that practiced by culture jammers inspires hope and empowers advocacy for change. I see hope in every subverted image and in every viral Internet meme that contains the seeds of resistance, and it is a hope I want to see my students have as well.
Works Cited


In the field of writing studies, the accelerating pace of technological innovation is accompanied by changes large and small, which can be seen in data we’ve examined such as the growing number of enrollments in online courses (Ginder), the increasing institutional adoption rates of electronic portfolios (“National”), as well as in the growing number of job advertisements seeking candidates with training in digital rhetorics and multimodal composition (Graupner, Nickson-Massey, and Blair 13). Changes can also be seen in the rise of data mining research methods (Lang and Baehr 172), and in the increasing variety of communication genres and modalities taught in our curricula (Shipka 278). Regardless of one’s stance on the role technology should play in writing studies, one must concede that the role it does play is worthy of analysis and criticism, especially when current-traditional practices and methods are called into question by competing ones.

Two such competitors are social theories of the so-called Net Generation, and the marketing of educational software. Both compete with traditional academic discourses and exploit technological myths with broad appeal: “the myth of the digital native” (Margaryan, Littlejohn, and Vojt 429) in the case of the Net Generation, and “the myth of technological sublime” (Carey 443) in the case of educational software marketing. These competitors engender change through “subversive displacement” (Faber 8) of traditional academic concepts about students and learning, and traditional academic
practices of teaching and research. As the work in the forgoing chapters has shown, I hope, teachers and researchers in composition and technical communication need to better understand these mechanisms, especially as they threaten to destabilize our conceptions of who our students are and how we communicate with them. Better understanding such myths can help us resist technological changes we may not wish to accept.

Processes of Technological Change

For those who study technological change, it represents shifts in the underlying social structures, ideologies, methods, and practices of a particular knowledge community. In writing studies, this means technological changes are part of larger discursive changes in higher education in general. Rhetoricians of science and technology have long studied discursive change in knowledge communities, and there is evidence of continued interest, for example in the work of scholars such as Leah Ceccarelli (271), Caroline R. Miller (464), and Lawrence Prelli (294), on incommensurability, and Elizabeth Britt (133) and Beverly Sauer (25) on organizational communication. In *Discourse, Technology and Change*, Brenton Faber argues that written discourse is the primary mechanism of technological change. He finds that circulation of written texts engenders a process of destabilization and subsequent re-stabilization (10). In Faber’s view, discourses become destabilized when they can no longer support coherent narratives, and competing discourses are able to supplant traditional concepts and practices with alternative ones, a phenomenon he calls “subversive displacement” (8).
For Faber, organizational image and narrative are the primary loci of subversive displacement because these are the primary sites of audience identification (9). Organizational image and narrative provide, in effect, the symbols and stories audiences use to relate to an organization, to define their relationship to its reflected identity and to explain their own roles in ongoing events; it is the coherence among image, narrative, and audience that results in stabilization. In writing studies, traditional academic narratives no longer maintain coherence when they are called into question by competing discourses that exploit widely disseminated myths about technology. These myths have been examined in workplaces, including usability (Dilger 47), and email (Moses and Katz 71); and in teaching, including multiliteracies (Selber 30) and access (Banks 9). This work is critical of these cultural myths because of how they re-inscribe already dominant power-relationships and ideologies.

Destabilizing Technological Myths

The myth of the digital native comes out of social theories claiming that members of the digital generation possess exceptional qualities bestowed by extensive technology-based activity (Selwyn 365). By contrast, the myth of the technological sublime comes out of the discourse of the military-industrial complex and the market, claiming the benefits of ease and extreme usability (Dilger 48). In both social theory and marketing discourse, proponents of these myths use textual objects, i.e. written documents, to destabilize our conceptions of our students in the case of digital natives, and our practices of teaching in the case of the technological sublime.
Myth of the Digital Native

The myth of the digital native depicts today’s students as essentially unteachable. Since the late 1990s and early 2000s, social theorists such as Marc Prensky and Don Tapscott have warned of a growing generation of young people (called variously the Net Generation, the Online Generation, etc.) who are innately different from prior generations when it comes to technology. Scholars influenced by this myth advocate for and warn about radical shifts in education and governance. However, recent research has begun refuting the claims on which these arguments are based, specifically claims of an innate expertise for learning derived from constant exposure to digital environments. Nevertheless, such claims retain their mythic status, as one digital native debunker, sociologist Neil Selwyn, acknowledges that “these simplified understandings remain influential in shaping contemporary public, political and academic expectations” (364).

Myth of the Technological Sublime

What James Carey calls the myth of the technological sublime, is “the belief that somehow advances in technology . . . solve the problems of the present and usher in a new century of peace, prosperity and ecological harmony” (444). In terms of information technologies, this was expressed in the idea that the Internet would enable an age of democracy and equality. In the early to mid-1990s, such an idea was commonplace, but by the mid-2000s, which saw the rise in awareness of both online surveillance and censorship, much of the optimism had evaporated (Carey 445). In today’s educational context, this myth is perhaps best represented by product claims which employ rhetorics of ease; significant, as Dilger writes, because “ease. . . has
become the most dominant force shaping the design and use of technological systems” (51).

These myths are destabilizing because they challenge pre-existing narratives that explain activities of everyday life. The myth of the digital native challenges the concept of students in socially constructed learning because it posits innate (and therefore unteachable) qualities that students have and which teachers cannot gain. It positions educators in the untenable bind of having to communicate to audiences that are fundamentally, indeed biologically and chemically, different. In a similar fashion, the myth of the technological sublime seeks to supplant humanistic ideals of society because it posits technological expedients that solve all problems merely by their implementation, obviating the need for negotiation, discourse, and persuasion. Both of these myths destabilize academic discourses precisely because they are concerned with such fundamental aspects as who our students are and how we communicate with them.

Corporate White Papers

A prime example of the exploitation of technological myths to destabilize current-traditional discourses and practices is the genre-indeterminate corporate white paper used extensively by marketers of educational technology to sell products to institutions of higher education, mainly to administrators and technologists, but also to teachers and researchers. These corporate white papers combine the features and conventions of an academic article while maintaining the distinct purpose of marketing a product line. Of the term “white paper”, Purdue’s OWL explains that “Originally, [it] . . . was used as shorthand to refer to an official government report, indicating that the document is authoritative and informative in nature,” however, the OWL goes on to say
“Corporations use white papers to sell information or new products as solutions” (“White Paper”). We can conceive of the white paper in general as a sort of hybrid genre that uses the methods and conventions of some discourses (e.g. social theory and marketing) to succeed in another (e.g. academia). Such white papers are plentiful and can be found in curated collections on the websites of prominent educational technology companies, including Blackboard, Pearson, McGraw-Hill, Desire2Learn, Conceptua, DYKnow, and Flexera.

Exploiting the Myth of the Digital Native

These white papers echo the rhetoric of digital native alarmists Prensky and Tapscott, depicting today’s students as innately predisposed to digital technologies. One white paper opens with the contention that,

underlying the growing interest in online learning is the coming of age of the “always on” generation. Technically fluent and completely comfortable in an online environment, learning online is a logical extension of how students live their lives. (Blackboard Collaborate 2)

This characterization of students attempts to capitalize on the myth of the digital native by claiming that, as a result of constant contact with information technologies, today’s students are uniformly “fluent” and “completely comfortable” with digital tools and environments. From this flawed premise, the “logical extension” is made that they therefore need online learning. Furthermore, this is a kind of learning to which today’s teachers have no access whatsoever due to the fact they were not “born digitally” or “bathed in bits” (Selwyn 365). This destabilizes traditional academic discourse by claiming implicitly that the institutions of higher education and their members, analog
teachers, are simply not equipped to respond to shifting circumstances as well as corporate organizations can.

The notion that all students are uniformly skilled at using technologies is a presupposition that has been already rejected by researchers and scholars in digital studies. In one significant study of online learners, Hargittai concludes that, contrary to claims of uniform fluency, there is clear evidence that

systematic differences are present in how people incorporate digital media into their lives even when we control for basic connectivity. Moreover, these differences hold even among a group of college students, precisely the type of population that popular rhetoric assumes to be universally wired and digitally savvy. (109)

If, as Hargittai and others (Bennett and Maton; Bennett, Maton, and Kervin; Margaryan, Littlejohn, and Vojt; Selwyn) have found, the digital native is a social construct, the white paper’s argument for technological change is compromised.

Exploiting the Myth of the Technological Sublime

In much the same way, the myth of the technological sublime is also leveraged in educational software white papers. In the same white paper, we are told, “Instructors need a tightly integrated environment in which to operate among the myriad systems they rely on,” and “to be able to seamlessly navigate between real-time capabilities.” In a sort of crescendo of technological sublimity, the white paper goes on to claim that instructors require

streamlined access to all the asynchronous course content they’ve built, and to be able to automatically populate class rosters from their LMS.
From within their online learning system, instructors should be able to voice-annotate their LMS pages. They should be able to record homework assignments, add new “after thoughts”, and underscore discussion points. Instructors should also be able to provide one-on-one feedback on student assignments, and add comments to their grade books. (7)

This highlights a major aspect of the technological sublime, what Bradley Dilger calls “extreme usability,” that is, a radicalized form of usability that Dilger sees “encouraging our belief that technology is autonomous, practically and empirically beyond our control” (47).

The same white paper directly employs rhetorics of ease when enumerating the benefits of its product, as when it claims:

In addition to IT time and cost savings on installation, implementation and ongoing support, an integrated, streamlined system translates into time (and aggravation) savings for instructors and a more satisfying and richer learning experience for students. Well integrated systems are easier to use. They provide a familiar environment, one that requires less new user (sic), and which eliminates the need for multiple (irksome) logins. (Blackboard Collaborate 8)

Using repetition to emphasize how easy the system is to use, the whitepaper claims ease of use leads to gains in both efficiency and satisfaction. This kind of extreme usability is dangerous, as Dilger warns, because it “encourages . . . rejection of difficulty and complexity, displaces agency and control to external experts, and represses critique and critical use of technology in the name of productivity and efficiency” (52). Such a
tradeoff, the ability to critique for efficiency, is not one that would appeal to many teachers of composition when put in such terms.

Resisting Destabilization

The leveraging of prevalent cultural myths exploits a moment in time. While learning technologies are not yet well understood, white papers such as this one can deploy arguments that appeal to ignorance, fear, and insecurity. They can claim “online learning . . . requires engaging the student. This is especially so today, when students are tech savvy and, as digital natives, demand it – or you risk losing them” (Blackboard Collaborate 8). Such blatant appeals to fear are perhaps the clearest illustration of how discourses that exploit technological myths attempt to destabilize current academic discourses and practices, performing subversive displacement. They also aptly illustrate how myths of the digital native and the technological sublime work together to call into question our conceptions of our students and our practices of teaching. Although there is evidence such destabilization is well advanced, teachers and researchers in composition and technical communication should resist technological change when it is introduced by these methods. Understanding how technological myths support fallacious arguments can help us to restabilize academic discourses by articulating more coherent narratives and images that can remain resistant to such subversive displacement.

Student Identities and the Proliferation of Data

Not only are these tools disguised attempts to subvert one set of practices and replace them with another antithetical set, I’ve come to believe LMS surveillance tools
are dangerous in one other important way: they also contribute to the existence and growth, on networked computers, of privileged information, specifically records of students and their personally-identifiable information, such as home addresses, Student ID numbers, course enrollments, and grades. If a student took every course from within the same learning management system, that system would contain the complete transcript of that student, as well as a wealth of other private information. Because computers do what computers do, this data is routinely backed up, and backups are sometimes themselves backed up (in a process called archiving). This technical fact sometimes means that data become unprotected and fall victim to attack, because eventually there are more copies than can be properly tracked. Stories about data breaches at institutions of higher education appear regularly in the media, and are in fact becoming more frequent. In a recent report, Ilana Shulevitz of Capital News Service cites Identity Theft Resource Center statistics that show as many as 50 data breaches in the education sector per year, and growing (Shulevitz).

This risk is made the more severe because our categories of data, in a sense, come to constitute the identity of the individual under surveillance. Land and Bayne write how “the fields and records containing an individual’s details. . . actually become the 'retrievable identity' of that individual” (Bayne and Land 173). They go on to warn that we need to consider . . . that 'the learner' may be, as far as our systems are concerned, to some extent constituted by records of their first login, last login, frequency of login, number of discussion board submissions, pattern of page visitation across the site, and so on. Such an identity might exist not only beyond the control of the individual learner, but its very existence
- and the possibility of 'judgment' being applied to it either wittingly or not- might remain unknown to them. (Bayne and Land 174)

If, as these authors contend, our students do in some sense become connected with a sort of simulacrum created by the data out of its own functions, then they have been objectified in the most literal of senses, their identities constituted not for pedagogical ends, but at the hand of machinery. It recalls Robert Brooke’s declaration about writing teachers, that “identity building is the business we are in” (152), but with a sardonic twist. It must presuppose questions such as: are these the kinds of identities we want to be building or to see being built?

If, in the process of establishing a digital identity, surveillance generates a simulacrum identity that persists in cyberspace, this identity has already, by the time it is called into being, gone through the “precession of simulacra” made famous by Baudrillard’s critique, and these are “their own perfect simulacra” (6) with no referent to reality. Baudrillard would surely see these as identities of the hyperreal generated from a system that cannot reproduce the real, only mask that there is in fact no real identity whatsoever. According to Baudrillard, the image has five successive phases: “it is the reflection of a profound reality; it masks and denatures a profound reality; it masks the absence of a profound reality; it has no relation to any reality whatsoever; it is its own pure simulacrum” (6). Data surveillance such as that implemented in the Blackboard Learn platforms spawns such pure simulacra by purporting to convey data representing something that is not, by claiming to create identity in order to dissimulate that there is no identity. Baudrillard goes on to write that the transition represented by the third stage, “The transition from signs that dissimulate something to signs that dissimulate that there is nothing marks a decisive turning point. [It] inaugurates the era of
simulacra and of simulation, in which . . . everything is already dead and resurrected in advance” (6). The identity constructed by Blackboard surveillance tools is not a human identity that performs human actions involved in learning, instead the identity itself exists to mask that there is no identity behind it.

For Baudrillard, it is already too late. The simulated identities spawned by electronic doppelgangers have already escaped our control. This is not metaphor, for in the act of duplication, the real is itself made artificial. Baudrillard relates the story of a visitor’s center at the Lascaux caves, which contain some of the earliest known works of art. He writes:

with the pretext of saving the original, one forbade visitors to enter the Lascaux caves, but an exact replica was constructed five hundred meters from it, so that everyone could see them (one glances through a peephole at the authentic cave, and then one visits the reconstructed whole). It is possible that the memory of the original grottoes is itself stamped in the minds of future generations, but from now on there is no longer any difference: the duplication suffices to render both artificial. (8)

The same problem recurs with student identities constituted by Learning Management Systems like Blackboard. By having instantaneous access to a constructed identity while at the same time having less access to real identity, teachers rely more and more on the construction until it informs interactions with the real and distinctions vanish. What is real participation? Clicking on a page and staying there for long enough to satisfy a tracking mechanism, or reading a page to understand its content? They are merged into the hyperreal and “signification liquefies” (7). Thus, in addition to legal risks, the creation of surveillance data also produces a heretofore-unexamined ethical difficulty as
well. The challenges presented by these legal and ethical issues are already nearly insurmountable, but they are challenges that writing program administrators must face squarely.

In the late 1990s, legal scholar Paul Riedenburg made a lucid and influential argument for what he called *Lex Informatica*, or the Law of Information. Much as *Lex Mercatore* had done for European merchants of the Middle Ages, Riedenburg predicted *Lex Informatica* would become an important source of regulation in the new Information Age. Reidenburg writes

> The creation and implementation of information policy are embedded in network designs and standards as well as in system configurations. Even user preferences and technical choices create overarching, local default rules. The set of rules for information flows imposed by technology and communication networks form a *Lex Informatica* that policymakers must understand, consciously recognize, and encourage. (Reidenberg 554)

Although Reidenburg did not predict the speed with which *Lex Informatica* would rise to prominence, he did predict the ways it would begin to resolve the main governmental conflicts posed by digital technologies: namely the distribution and ownership of both intellectual property and personal information. Reidenburg's analysis predicted how the dual operation of *Lex Informatica* at systematic and local levels can resolve otherwise irreconcilable conflicts of policy at extremely large scales: for example, today, the major problem of the different values that different regions of the world grant to the concept of freedom of speech, yet all are connected by the global internet. How do governments and organizations regulate information so that all are not negatively affected by the actions and beliefs of some? The recent violence of the *Charlie Hebdo* massacre should
underscore the contemporaneity and severity of such concerns, and make salient the most important fact about *Lex Informatica*, which is that people themselves write the laws that all are governed by.

The kind of solution offered by *Lex Informatica* is one WPAs are badly in need of as well, as our programs increase in scale and we are confronted by the same conflicts around distribution and ownership of intellectual property and personal information as are governments and corporations. How, for example, should we treat the privacy of students who produce web-based electronic portfolios? Are these public documents to be viewed on the Internet at large, or are they protected documents to be kept private as strict interpretations of FERPA direct? To what extent can we rely on the Fair Use Doctrine of Intellectual Property law to protect non-commercial educational work in the era of the DMCA, automated takedown notices, and massive copyright litigation? When it comes to who can have access to systems that contain privileged data, must all access be restricted? Or what levels of access can be allowed for individuals with different levels of need? Furthermore, WPAs have pressing need for the technological and digital solutions themselves, as the amount and kinds of information produced by writing programs have greatly changed, and this has implications at the practical as well as at the policy level.

Also in 1990s, while the then nascent multiliteracies movement in composition was still being formulated and while the impact of *Lex Informatica* was just first being felt, the interdisciplinary field of Knowledge Management began to emerge from the practices of project managers and technical communicators at corporations, who were just for the first time discovering the central place organizational knowledge held in their firms. Since this time, the field of Knowledge Management, or KM, has become an
academic discipline very much in tension with the community of practice from which it grew, and it is a field that in many ways is still being constituted. By 2005, one study found over 100 published definitions of Knowledge Management (Dalkir 4). While some define KM in a limited way as merely the software system that have come to enable it (Puscak 1002), others see it more broadly as an entire "framework for designing an organization’s goals, structures, and processes so that the organization can use what it knows to learn and to create value for its customers and community" (Dalkir xiii). Knowledge Management is at once both a new and an old discipline, both kinds of proponents assert. Though as a field it did not exist before 1990, some trace its roots back to Aristotle's distinction between "know how" and "know what" (Pusak 1005), what I assume refers to the taxonomy in *Nicomachean Ethics of episteme, techne, and phronesis*. It would seem most useful for WPAs to adopt a broad view of Knowledge Management with these deep and congruent historical roots, as this would allow us to bring the methods of this new field to bear on the problems of our own.

The most powerful insights of Knowledge Management theory proceed from the recognition that knowledge is a commodity both like and unlike other commodities. For example, one of the first Knowledge Management textbooks (published in 2005) identifies the following key differences: Use of knowledge does not consume it, transferal of knowledge does not result in losing it, knowledge is abundant, but the ability to use it is scarce, and, much of an organization’s valuable knowledge walks out the door at the end of the day (Dalkir 3). An entire computer industry, Content Management Systems, has now grown up to serve the Knowledge Management needs of the corporations, governments, organizations and institutions that seek to capitalize on knowledge resources. This has led to the rise of knowledge-centric firms, such as
Google, which in the first two decades of the 21st-Century has become a global information trafficker of truly unimaginable proportion. If, according to an IBM whitepaper, “90% of the data in the world today has (sic) been generated in the last two years alone” (SINTEFF), then most of the growth in so-called big data lies ahead of us.

The final two of the distinctions between knowledge and other commodities relate to Program Administration most directly: the idea that as access to information increases, so the ability to make use of it becomes more valuable, and the related idea that there is a distinction between explicit and tacit knowledge. For WPAs, both knowledge scarcity and tacit knowledge are important for a variety of reasons related to institutional continuity and programmatic consistency. If for instance, the tacit knowledge held in the minds of retiring administrators, migrating lecturers, and matriculating graduate students leaves with them, or if curricular materials have been painstakingly created but are not accessed or used, then the writing program is diminishing instead of conserving its knowledge resources. In truth, KM offers the WPA a variety of advantages. KM and the systems upon which it depends can offer administrators a way to store, access and make sense of the digital products of multimodal composition. They already serve as a delivery mechanism for most online and hybrid learning, so they could aid us in better understanding those processes. Finally, they can aid in programmatic assessment, faculty training and development, and in securing funding and fostering collaboration within the program and across the institution.

There is something to be hopeful for, as promising recent developments in Computers and Writing have begun making their way into the discourse of Writing Program Administration in theories of Technological Ecologies, which involve using
ecological models to better understand technological systems. Such ecological approaches to understanding technological systems and networks, in my view, cannot have come soon enough. These approaches, taking for granted as they do Latourian agency for non-human actants and the resultant increase in the importance of machines in activity networks, calls attention to an extremely neglected site of research: the content and learning management systems themselves, the myriad pieces of software and infrastructure that reside the background, as it were, of our work. These are the myriad of applications that utilize key properties of new media, properties like database structures, dynamic code, sophisticated web-tracking, and a host of other technologies.

Challenges Facing the Technorhetorician WPA

Nevertheless, there are a number of challenges to the kind of deep integration of Knowledge Management into Writing Programs envisioned here, challenges that should be acknowledged as the primary concerns to which Writing Program Administrators who seek to remediate themselves and their programs should attend. Such challenges may be gathered under the umbrellas of two main classes: ideology and access. Knowledge Management as a discipline, tending so directly from corporate practices, stands opposed in many respects to the values and practices of the humanities and the liberal arts tradition in general, and certainly KM’s corporate influences and motivations are to be scrutinized intensely before applying their solutions. Secondly, the critical issue of disparities in levels of technological access and the resultant literacies it produces should prompt us to question our very fitness for the task of implementing coherent knowledge management systems. WPAs as a whole tend to lack the backgrounds and training that foster the necessary literacies, and are kept from
transformative literacy experiences by a variety of means, both visible and invisible, both intentional and unintentional. Furthermore, knowledge systems in current use cannot easily morph to incorporate new things. While an individual composition teacher can choose to alter things slightly in order to experiment, for example substituting this assignment for that within a single course or section, a Writing Program Administrator does not have that luxury. The scale at which the WPA operates makes experimentation more difficult and complex. This is also true because one of the primary functions of the Writing Program, from one perspective at least, is to resist change and to maintain traditional practices and narratives. The Writing Program, as the visible incarnation of writing studies in the institution, should play the critical role in maintaining and preserving traditional writing practices, support systems, and values, for if the WP doesn’t do it, and if individual teachers are free to experiment, who will maintain and preserve them otherwise?

Because Writing Program Administrators sit at the nexus of so many of these issues, and because the pace of technological change is only accelerating, WPAs looking to the future must become, as Michael Day argues persuasively, “technorhetoricians” in the strictest sense of the word. Such forward-looking WPAs must use this hybrid rhetoric-as-techne in order to resist destabilizing discourses and fortify traditional academic discourses to prevent further corporate intrusion into higher education. They must use the understandings of Lex Informatica, the Law of Information, in order to protect against the proliferation of student data and suborn the degrading effects of simulation, and they must employ the methods of emergent disciplines such as Knowledge Management and User Experience in order to make the writing program successful well into the Information Age.
Works Cited


SINTEF. "Big Data, for better or worse: 90% of world's data generated over last two years." ScienceDaily. ScienceDaily, 22 May 2013.

OFFICE OF RESPONSIBLE RESEARCH STATUS

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OF SCIENCE AND TECHNOLOGY

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Date: 7/23/2012
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CC: Dr. Barb Blakely
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From: Office for Responsible Research
Title: Using Web 2.0 Technologies for Peer Conferencing in Foundation Communication Courses
IRB ID: 12-362

Study Review Date: 7/23/2012

The project referenced above has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b) because it meets the following federal requirements for exemption:

• (1) Research conducted in established or commonly accepted education settings involving normal education practices, such as:
  • Research on regular and special education instructional strategies; or
  • Research on the effectiveness of, or the comparison among, instructional techniques, curricula, or classroom management methods.

• (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey or interview procedures with adults or observation of public behavior where:
  • Information obtained is recorded in such a manner that human subjects cannot be identified directly or through identifiers linked to the subjects; or
  • Any disclosure of the human subjects’ responses outside the research could not reasonably place the subject at risk of criminal or civil liability or be damaging to their financial standing, employability, or reputation.

The determination of exemption means that:
• You do not need to submit an application for annual continuing review.
• You must carry out the research as described in the IRB application. Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data collection, nature or scope of information to be collected, changes in confidentiality measures, etc.), modifications that result in the inclusion of participants from vulnerable populations, and/or any change that may increase the risk or discomfort to participants. Changes to key personnel must also be approved. The purpose of the review is to determine if the project still meets the federal criteria for exemption.

Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

Detailed information about requirements for submission of modifications can be found on the Exempt Study Modification Form. A Personnel Change Form may be submitted when the only modification involves changes in study staff. If it is determined that exemption is no longer warranted, then an Application for Approval of Research Involving Humans Form will need to be submitted and approved before proceeding with data collection.

Please note that you must submit all research involving human participants for review. Only the IRB or designees may make the determination of exemption, even if you conduct a study in the future that is exactly like this study.

Please be aware that approval from other entities may also be needed. For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other
### INSTITUTIONAL REVIEW BOARD (IRB)

#### Exempt Study Review Form

**Title of Project:** Using Web 2.0 Technologies for Peer Conferencing in Foundation Communication Courses

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- [ ] Collaborator Faculty  
- [ ] Emeritus Faculty

- [ ] Visiting Faculty/Scientist  
- [ ] Senior Lecturer/Clinician  
- [ ] Lecturer/Clinician, Ph.D. or DVM  
- [ ] P&S Employee, P37 & above  
- [ ] Extension to Families/Youth Specialist  
- [ ] Field Specialist III  
- [ ] Postdoctoral Associate  
- [ ] Graduate/Undergrad Student  
- [ ] Other (specify: )

#### FOR STUDENT PROJECTS (Required when the Principal Investigator is a student)

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- [ ] Other (specify: research project

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#### ASSURANCE

- I certify that the information provided in this application is complete and accurate and consistent with any proposal(s) submitted to external funding agencies. Misrepresentation of the research described in this or any other IRB application may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.
- I agree to provide proper surveillance of this project to ensure that the rights and welfare of the human subjects are protected. I will report any problems to the IRB.
- I agree that modifications to the originally approved project will not take place without prior review and approval by the IRB.
- I agree that the research will not take place without the receipt of permission from any cooperating institutions, when applicable.
- I agree to obtain approval from other appropriate committees as needed for this project, such as the IACUC (if the research includes animals), the IBC (for research involving biohazards), the Radiation Safety Committee (for research involving x-rays or other radiation-producing devices or procedures), etc.

Office for Responsible Research  
Revised 02/29/12