

Contradictions regarding teaching and writing (or writing to learn) in the disciplines: What we have learned in the USA

Contradicciones acerca de cómo promover la escritura epistémica en las disciplinas: lo que hemos aprendido en EEUU

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Resumen

En este artículo se describe la tradición de la investigación anglófona de América del Norte acerca del rol de la escritura en la enseñanza y el aprendizaje en la educación superior. La tradición de investigación está asociada con un movimiento de reforma de la educación de más de cuarenta años, denominado “escritura a través del currículo” (Writing Across the Curriculum; WAC) o “escritura en las disciplinas” (Writing in the Disciplines; WID). El movimiento anima a los profesores de las diferentes disciplinas a interesarse por mejorar la escritura de sus estudiantes y su formación disciplinar a través de la escritura. La investigación desarrollada bajo los movimientos WAC y WID utiliza métodos propios de la investigación educativa (y, en menor medida, de la lingüística aplicada) para comprender los roles que juega la escritura en el trabajo y la formación disciplinar, a menudo en relación con la escritura en otras instituciones (empresas, gobierno, etc.). Situar en primer plano la escritura en los movimientos WAC y WID ha revelado seis contradicciones estructurales e institucionales en la educación superior de los EEUU: 1) la escritura como herramienta transversal frente a la escritura especializada, 2) la concepción del género como un contenedor de contenido –dualismo forma/contenido- versus su concepción como acción social, 3) la escritura como medio para evaluar el aprendizaje de contenidos frente a la escritura como una herramienta de desarrollo intelectual, profesional o personal, 4) la escritura para conseguir la meta social de la escolarización (epistémica) versus escribir para contribuir a la meta social del trabajo (pragmática) 5) las tesis de máster o doctorado como el último obstáculo educativo versus su consideración como la primera actuación profesional, 6) y la escritura (y su enseñanza) para la reproducción social y/o disciplinar versus la escritura (y su enseñanza) para el cambio social y/o disciplinar.

Palabras clave: Escritura en las disciplinas, la escritura para aprender, las contradicciones, la escritura a través del currículo, género

Abstract

This article describes a tradition of Anglophone North American higher education (HE) research concerning the role of writing in learning and development. The research tradition is associated with a forty-year-old education reform movement called Writing Across the Curriculum (WAC) or Writing in the Disciplines (WID). The movement encourages teachers in different disciplines to become interested in their students' writing and to improve their writing and their disciplinary education (formation) through writing. The research on WAC/WID uses methods familiar in educational research (and to a lesser extent applied linguistics) to understand the roles writing plays in disciplinary work and disciplinary formation, often in relation to writing in other institutions (business, government, etc.). The foregrounding of writing in WAC/WID has revealed six structural, institutional contradictions in US HE: 1) writing as transversal versus writing as specialized; 2) genre conceived as a container of content--a form/content dualism--versus genre conceived as social action; 3) writing as a means of assessing learning of content versus writing as a tool of intellectual / professional / personal development; 4) writing for a social motive of schooling (epistemic) versus a social motive of work (pragmatic); 5) the masters or doctoral thesis as a last educational hurdle versus a first professional performance; 6) and (teaching) writing for social/disciplinary reproduction versus (teaching) writing for social/disciplinary change.

Key words: Writing in the disciplines, writing to learn, contradictions, writing across the curriculum, genre

Introduction

This article describes a tradition of Anglophone North American higher education (HE) research concerning the role of writing in learning and development. It is not a formal literature review but rather an introduction to this 30 year-old tradition (for reviews see Russell 1997; Russell 2002; Russell 2009). Several research studies are briefly summarized to illustrate the theory, the methods, selected results, and interventions developed for and resulting from the research. The fundamental theoretical frame for this research tradition derives from several sources familiar to European researchers in didactics and, to a lesser extent, applied linguistics, although neither applied linguistics nor European didactics have much influenced this North American tradition, which owes more to an indigenous tradition called Rhetoric and Composition (Donahue 2004). The major influences are Vygotsky's genetic theory of development (1978, 1986) and a theory of genre very much influenced by Bakhtin (1981) and Julia Kristeva's (1980) notions of intertextuality. But this framework is built upon American pragmatism (Dewey) social interactionism (Mead), and a U.S. interpretation of Schutz's (1989) phenomenological sociology, the "social construction of reality" (Berger and Luckmann 2011).

The methods are those familiar in social sciences research in education (survey, ethnographic observation and interviewing, quasi-experimental comparison-group studies, etc.), often combined with linguistic and rhetorical analysis of texts. But the results of this research and the interventions described require some understanding of the differences between U.S. and European educational contexts.

Over the last 30 years, research on writing in North American HE has often exposed deep contradictions among the conflicting societal demands and interests in

HE. By contradictions I mean deep and historical tensions within and between organizations, institutions or social structures, not simply conflicts or problems (though these often grow out of contradictions). The concept has its sociological origins in marxist analysis of the contradiction between use value and exchange value in capitalist societies. Medical institutions thus face a contradiction between the patient as a person in need of help and the patient as a source of profit (e.g., cost savings) (Leont'ev 1981). The concept is specifically developed in many versions of cultural historical activity theory, not limited to it. Attention to writing exposes the contradictions between the formation of students specifically (professionally) versus generally (for citizenship); between research (and reproduction) versus professional practice (service); between the interests of teaching versus research. All of these generate conflicts and problems that students and teachers experience in using writing for teaching, learning, and researching in higher education.

I begin with a central intervention and the central contradiction around it, a forty-year-old higher education reform movement called Writing Across the Curriculum (WAC). (For an overview see Russell 2002; Bazerman, Bethel, Chavkin, Fouquette & Garufis 2005).

Cognition: Writing to learn, learning to write, and the WAC movement

A first contradiction is one embedded in the very deepest conceptions of writing: writing viewed as an autonomous transcription of speech versus writing viewed as an integral part of the intellectual activity of a discipline: in other words, writing as transversal versus writing as specialized. A corollary to this contradiction is that between writing as a means of examining (and therefore of selecting students) and writing as a means of teaching and learning.

This contradiction is played out in historical and institutional terms specific to the US. Contrary to most other nations, almost all American HE institutions offer a general skills writing course, called “first year composition,” required of almost all students since the emergence of the modern university on the model of von Humboldt in the 1870s at Harvard. But first-year composition was founded and in many ways continues on the assumption that writing is transversal and constitutes a set of discrete and easily transferrable skills, which should have been learned earlier, in secondary or elementary school. However, there is little evidence that the skills acquired in the course are transferred to other courses in other disciplines (Wardle 2007). The course has nevertheless persisted for 140 years, for reasons I have discussed elsewhere (Russell 2002).

In the 1970s, student writing became a major issue in higher education, following the social upheavals of the 1960s. Numerous American universities began to accept students from working class and racial minority backgrounds—what is called “open enrollment.” Many universities responded by requiring remedial supplementary courses in writing for students they considered not sufficiently prepared. Many other universities, however, responded to the influx of new students from diverse backgrounds by encouraging teachers in different disciplines to become interested in

their students' writing. These universities called on experts in composition to aid teachers in the disciplines to use writing more effectively. Thus the Writing Across the Curriculum (WAC) movement was formed (Russell 2002), as a response to the limitations of the notion of writing as transversal and writing skill as easily transferrable.

In the US today, 50% of institutions of HE in a recent national survey reported offering some program to improve student writing across the curriculum (Thaiss & Porter 2010). Some 65% of Ph.D. granting universities reported such a program. In general, WAC programs do not replace first-year composition courses but rather are intended to compliment them. WAC programs frequently offer workshops where experts in composition teach teachers in other disciplines techniques to help them improve their students' learning of the discipline through writing. Many institutions also offer courses in each program of study (major) designated as "writing intensive," where the students write more often, where they receive more attention from their teachers, and where the number of students is generally lower (Bazerman, et al. 2005). A few universities have each department construct a plan for improving their students' writing in the program of study, from first year to last, as we shall see.

The central theoretical concept of WAC—from its Vygotsian origins in the work of James Britton and his colleagues in the UK (1975)—is that students not only learn to write but also write to learn. This concept provides a deeper understanding of writing than the transmission (sender-receiver model.) Writing is a tool for *learning* instead of merely a tool for assessing learning. Writing is conceived as a means of engaging students with the problems and methods of a discipline as well as a means of sorting students.

Recent large-scale survey research (NSSE, 2008) of more than 23,000 students in 82 U.S. universities found that students who reported doing more extensive writing *with certain qualities* in their courses was highly correlated with positive dimensions of student engagement and learning. The report concluded:

"when institutions provided students with extensive, intellectually challenging writing activities, the students engaged in more deep learning activities such as analysis, synthesis, integration of ideas from various sources, and grappled more with course ideas both in and out of the classroom. In turn, students whose faculty assigned projects with these same characteristics reported greater personal, social, practical, and academic learning and development" (pp. 20-21)

However, the specific cognitive effects of writing and their mechanisms are by no means well understood. In what is still the most comprehensive review of research on writing to learn, Klein (1999) found that there is no evidence of a general effect of writing on learning, such that the amount of writing is correlated with gains in learning. Rather, as with the NSSE study, certain uses of writing have shown significant positive effects in a range of studies. Klein suggests that the most promising research is in the area of genre, and it is around genre that most WAC research and theory has centered, but with a reconceived conception of genre, which brings us to a second contradiction.

Form/content dualism versus genre as social action

In traditional conceptions of writing, there is a separation between the form and the content. University teachers often profess themselves able to teach the content but not the form of writing. Often writing experts are expected to teach proper form, which thought to be transversally available for the writing of any content. This is particularly felt in US HE, where first-year composition exists. Yet university teachers are clearly able to write in the ways expected of their disciplines and writing experts are not able to write successfully in any and all disciplines (at least not without immersion in the activity of the field through long practice).

The WAC movement approached this contradiction through the research on writing in the disciplines and professions: WID, as this research tradition is called. Methodologically, this research came out of Dell Hymes's linguistic ethnography (1974). The seminal study, "Strangers in Strange Lands" (1987), by McCarthy (a student of Hymes), showed how a first-year university student struggled to understand the very different writing expectations of three of his courses, with consequences for his identity work as a student. Yet the professors were largely unaware of the differences in their expectations and the struggles of their students. This study also signaled a tradition of studying teachers and students who are involved in WAC programs.

Theoretically, this research was propelled, from the early 1990s, by taking the concept of genre from language study and reformulating it with a concept from phenomenological sociology, Alfred Schutz's (1989) *typification*.

The link between form and content is genre, but genre conceived not as textual forms subject to taxonomic classification, but "genre as social action." This approach is called North American Genre theory (to distinguish it from Language for Special Purposes or Systemic Functional Linguistics theories) (Coe & Freedman 1998). It is also often called New Rhetoric (to emphasize its focus on the communicative force of writing). In this perspective, a genre is, in Carolyn Miller's famous phrase, "typified rhetorical actions based in recurrent situations" that form and shape expectations and responses (1994, p. 31; 1984). Genre is not seen as similar formal features or as packeted speech (Wertsch, 1994), but as typified actions that over time have been routinized, "stabilized-for-now" (in Schryer's phrase, 1993) in ways that have proven useful in some recurring situation—that is, in some context recognized (interpreted) as similar, as typical, by participants. In time, these interactions come to be taken for granted. Genres become not simply forms of words, but forms of life, as Bazerman said, following Wittgenstein (1994). A genre is a sort of path in the forest of our communal life, begin by someone and followed by others who need a route to a destination.

This phenomenology of genre is compatible with Vygotsky's view of mediated action (Russell 2010). Put simply, a genre is the ongoing use of certain material tools (marks, in the case of written genres) in certain ways that people recognize as having worked once and might work again, a typified, tool-mediated response to conditions recognized by participants to be recurring. This perspective on genre presupposes pragmatics, discourse in **context**. But it also embraces philosophical pragmatism (Dewey and Mead), communication as mediating symbolic interaction.

In the case of writing in higher education, the social action, the activity, is teaching and learning—disciplinary learning, primarily. And the genres have developed to support learning (Russell 1997). For example, the experimental report in natural sciences is more than a collection of linguistic elements shared by diverse documents. The genre is rather a typified response to a recurring action: that is, to communicate the results of an experiment to other researchers who are occupied with this specific problem (Bazerman 1988). It is not, finally, the form but the function that makes the difference between one genre and another. The lab report done by undergraduate students in a laboratory course in chemistry, for example, shares—often exactly—the linguistic forms of a professional research article. But its function is different—to teach beginners, not to inform experts. In this concept of genre, genre as social action, a genre tells us not only what one can say, but also what motives one can have, within some system of social activity.

The theory of genre as social action is a concept that is less transversal and much more specific and heterogeneous. The concept of genre as social action links the genre to **specific** contexts and practices, activities and acts. Note that it is impossible to determine the genre with linguistic analysis alone. One must interrogate the context by sociological or social psychological methods (interviews, observations, etc.), although linguistic analysis is also important and often necessary. One cannot read off motives, contexts, from texts alone (Coe & Freedman 1998).

The concept of genre as social action is similar in important ways to much continental European theorizing of genre—not surprisingly, perhaps, given similar roots in continental sociology, Bakhtin, and Vygotsky. In particular French and Swiss research in the didactics of writing has looked beyond analysis of linguistic features and individual skills to view genres in terms of their role in social systems/networks and institutions, such as disciplines. (For a comparison of North American and French views of genre in research on writing, see Donahue 2009.)

Research and interventions based on the theory of genre as social action use writing to simultaneously initiate students into the practices of writing AND thinking common in a field. For example, a team of researchers at North Carolina State developed an online tutorial designed to support students in the process of writing laboratory reports in chemistry, a genre that is frequent in natural sciences and engineering, but often reduced to a formulaic “recipe” without intellectual interest or engagement on the part of students. The online tutorial, Labwrite, is designed to teach students not only “the how” of writing the genre (the linguistic and rhetorical conventions) but also “the why” of writing it: the motives and social roles expected, its function in the scientific practice of science (Carter, Ferzli & Wiebe 2004, 2007).

Labwrite guides the students through the process of understanding and representing (textually, mathematically and graphically) a laboratory experiment. Instruction on writing a laboratory report begins even before the students enter the laboratory, continues in the laboratory, and ends after they leave. The goal of instruction is not to improve their writing but to improve their learning: to teach scientific concepts and scientific methods using writing as a means. Because the students write to learn, they are evaluated on their learning, and not on their writing per se. The genre is a tool for learning science in the context of specialized formation. And the students learn the genre “as a matter of course,” in acting in the course

context from beginning to end, not apart from it. In order to develop this tutorial, the researchers used the results of research on expert scientists who write experimental reports—25 years of WID research, historical, linguistic, and ethnographic on scientific writing in situ. (For another approach, the Science Writing Heuristic, see Hand 2007)

A double blind comparison study of the students using using Labwrite, versus students using the usual paper guide, showed that the students using LabWrite 1) better understood the concepts taught in the chemistry course 2) better understood the scientific method taught, and 3) had a more positive attitude toward laboratory work than students who did not use Labwrite. It should be noted that the research did not try to determine if the students wrote better but rather if they learned better (Carter, Ferzli, & Weibe 2004). Carter (2007) theorized out of this work that there are certain “apprentice genres” that are characteristic of formation in each field, genres which may provide a key to not only learning but also development in a field.

Development and learning

A third contradiction is between learning and development. Much research, such as the study above, has attempted to measure the effects of writing on learning, but learning conceived in terms of discrete, short-term gains of the type usually measured by conventional educational tests. In these terms, writing often showed no effect or even negative effects (Klein 1999). However, writing’s possible effects on longer-term intellectual development are more difficult to measure but potentially more important to educators. Bazerman (2007, 2009) has elaborated Vygotsky’s genetic theory of development in relation to genre. Piaget argued that one must reach a certain level of cognitive development before one can learn in certain ways. Vyotsky turned that on its head. In Vygotsky’s theory learning precedes development (1986). Bazerman suggests that genres—particularly written genres--“provide highly differentiated, scaffolded communicative spaces in which we learn the cognitive practices of specialized domains” (2007, 2009).

In Vygotsky’s theory, tool-mediated semiotic activity transforms cognition by internalizing external cultural tools and processes. As one internalizes through learning, a cognitive reorganization can take place that Vygotsky (1997) calls development. Accumulated learning *may* lead to qualitative change: reformulated functional cognitive systems or development. In Vygotsky’s famous example, children at about two years old imitate the speech of others in a babbling that Piaget dismissed as “egocentric” speech awaiting a developmental shift. Vygotsky theorized that this “egocentric speech” is learning that becomes, in time, internalized to produce a qualitatively different use of the learning, as a tool of self-regulation, around age three. Children learn to talk to themselves out loud, and eventually this talk is internalized as a new stage of cognitive development: conscious thought including planning, self-regulation, and so on.

Genres, then, Bazerman suggests, may provide zones of proximal *development* as Vygotsky terms them. External cultural tools (e.g., genres) that become internalized have the potential for refiguring prior engagements with the material and social worlds. Bazerman argues that genres are important to this qualitative shift from

accumulated learning to cognitive refiguration or development. External tools, such as genres that students internalize, have the potential to refigure engagement with the world. One sees the world differently. One sees prior learning differently.

Bazerman's example is grammar (2007, 2009). Students memorize discrete grammar rules, learn the parts of speech, and manipulate diagrams of sentences, perhaps. But for most people all of that is just learning, often quickly forgotten or, if remembered, not integrated into regular activity. But for many people—such as language teachers—that accumulated learning comes to transform the way one thinks about communication, at some point. Experts in language think in terms of this developed and, for them, developmental understanding of grammar. They use it to change the way they write, to evaluate the way people speak and write in different ways, to manipulate language in new ways, to generate new problems, and so on. Students of language begin in other words to have a disciplined understanding that it allows them to see the world in new ways, through the lens of grammar. They become, in effect, specialized. Bazerman (2009) describes this process as “punctuated periods of marked development where the learning become integrated with other existing or parallel developed functional systems to create new functional systems” (p. 290)

A recent study (Bazerman, Ewing, Simon, & Piang, under review) provides evidence for Bazerman's theory from a case study of students in a two-year teacher education study program leading to licensure. The students' written work and their comments about it were coded to index the qualitative development of disciplinary understanding that students expressed in and about the genres assigned in the program. Findings “provide strong evidence that genres and structured parts of genres can direct the kind of thoughts expressed by students.” By assigning particular genres of professional education, in a context that motivates and supports students, the teachers lead students to produce “particular kinds of expressed thoughts in addressing the intellectual challenges of the genre. Thus genres can provide opportunities to practice and learn particular kinds of thinking.” There was also evidence that development was uneven, with “time lags in development and punctuated moments of reorganizations, with the reorganization not being stabilized until coherent representations of the relations of thought are developed.”

Further research is ongoing in this line (Russell & Harms 2009), despite the difficulties of such longitudinal study. A more pressing issue for writing in HE, one firmly linked to development, is that of transfer across domains. And here contradictions are manifold, embedded in the very problem addressed.

Transfer and the transversal

Concepts of development and genre as social action have also informed research on the transition from writing in HE to writing in professional work—fundamentally different activity systems nevertheless linked through what Spinuzzi (2004) has called “genre ecologies.” (One example is the intertextual linkage we noted between the student's lab report and a scientist's experimental article.) This transition from “school to work” is crucial to understanding the contradiction in HE between traditional values

of liberal education and new demands on HE from employers, government employability agendas, and so on.

The most extensive study of the transition was conducted by a group of Canadian researchers (Dias et al. 1999; Freedman, Adam & Smart 1994). A central but uncomfortable finding is that there is little 'transfer' between learning in the genres of professional education in HE and learning the genres of professional work. These researchers found that students attributed their learning to schooling (writing for the teacher, for a mark) even when teachers attempted to simulate the workplace: by assigning workplace genres, having professionals in the field attend student presentations, etc. That is, students recognize and create texts as belonging to the activity and genre ecology of schooling, though the texts teachers assign for reading or writing may have been drawn from or intended for a workplace ecology of genres. This, the researchers argue, is because the social motive of schooling (epistemic) is fundamentally different than that of work (pragmatic). And the genres of school and work—however similar in form they may be—perform different social action.

This fundamental contradiction in social motives generates other contradictions. Writing in schooling is primarily individual, done for assessment typically, and leads to a mark. Incorporating other students' work is often considered cheating. Writing in professional environments is primarily collective, collaborative, and leads to a product or service. In schooling, then, there is little "document cycling"—feedback and revision loops common in professional workplaces (Goswami & Odell 1985).

An obvious intervention, then, is to immerse students in a target genre ecology *beyond* the classroom, in a workplace, as with internships or service learning. However, this is expensive and difficult to control. Based on North American genre studies on communication in professional organizations, a group of researchers have been constructing multi-media simulations of fictional organizations, represented by fictional Internet and intranet sites, to create an activity system that mediates between schooling and work (Fisher 2006, 2007; Russell & Fisher 2009) (see Figure 1). Students role-play as they collaboratively engage in workplace-like activities in the fictional online learning environment, using the sorts of tools and genres typical in workplaces in a particular sector (databases, files of documents, meeting minutes, videoed meetings, synchronous and asynchronous communication, etc.).

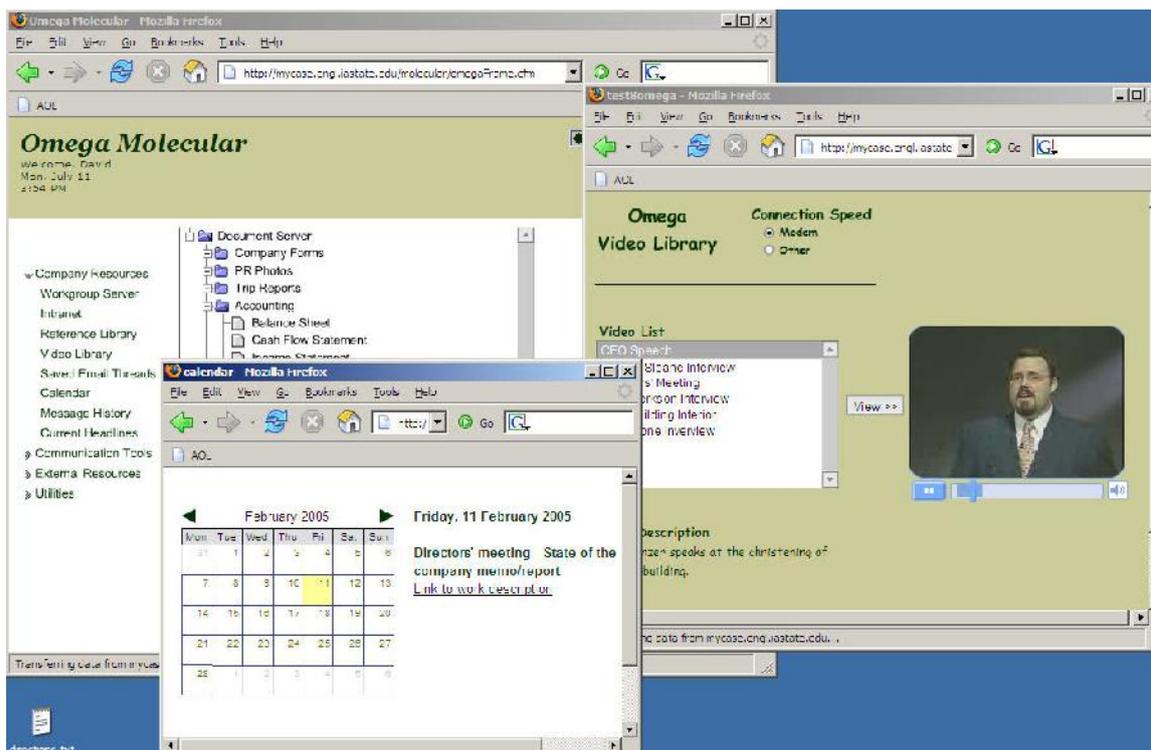


Figure n. 1. Online multi-media simulation of a fictional workplace

Students play the role of consultants (or interns) in the fictional organization. The “consultants” produce texts in a range of genres (written, oral, visual and electronic) that arise in the fictional activity (and genre) system of the company. The students’ texts (“work deliverables”) are submitted to characters in the simulation, such as the CEO in a fictional biotechnology startup company, pictured here in a video (see Figure 1). And the characters reply to the students-as-consultants through a closed email system (though it is actually—as the students are told—the teacher who is replying, in character, using a special role-sensitive email system). There is also a document server with a universe of documents from various departments of the organization. And in the interactions of fictional characters and students-as-consultants, that document universe is brought into circulation through the genre ecology. There students must act on deadlines, face ethical dilemmas “seeded” into the simulation, and deal with “emergencies,” such as an anti-GMO demonstration outside the company headquarters. In other words, the elements of time and space, although fictional, are added to the fictional case, to create a learning environment where students experience genre as social action in workplaces.

Research into students’ learning in these environments suggests that students are much more likely to attribute their learning in the online simulation environment to contexts of professional work than to contexts of schooling, as compared to their attributions of other parts of their courses that use more traditional learning environments (e.g., Blackboard™ and face-to-face instruction) (Fisher, 2006). These attributions seem to be shaped by the changes in classroom rules, division of labor, and community that the simulation affords, and by the contradictions between the genre ecologies of schooling and workplace (mediated by the simulation as teaching tool). For example, in the engineering and business simulations, students draw freely

from each other's work as it is posted to a shared file space, and from previous students' work published in the simulation (students add to the simulation over time). This literacy practice is, as noted above, atypical in schooling but highly typical in the workplace, where people often draw from a common pool of documents and where documents cycle through multiple readers in the division of labor. The goal of the online multi-media simulations is to exploit the contradictions between the two activity systems in order to produce reflective practice and reflective practitioners (Schön 1987, 1999).

Contradictions of graduate education: Lamination of activity and multi-genre in the thesis

A contradiction similar to the one noted above between the institutional demands of HE and the professional demands of employment exists also in the genres of the Masters and Ph.D. thesis (US dissertation). These genres have become a major issue with the exponential growth of post-graduate education—and a major object of North American genre research for 25 years. From the first ethnographic studies of Ph.D. students (Berkenkotter, Huckin & Ackerman, 1988), US research has found that doctoral students write the genre of the thesis with great difficulty, and often at the price of profound conflicts of identity, long periods of inactivity, often, and other costs, human and financial. Caught between the activity systems of the institution and its requirements, on one hand, and the discipline and its practices on the other, newcomers to the genre and activity of the thesis/dissertation bring their own sociocultural history and take an active role in learning to write it. Disciplinary enculturation is less a slow absorption or unconscious, passive assimilation and more a conscious, often chaotic battle, though often hidden from the view of advisor and departments.

Paul Prior's longitudinal studies (1998), have found that students at this level engage in a process of "gentrification," reclassifying texts, attributing similarities, as they learn—and sometimes reject—powerful disciplinary and institutional practices. Each student participates in multiple networks of activity simultaneously—university, department, discipline, committees, job market, family. And each must negotiate this "laminated" activity in writing this most important document of their career (See also Blakeslee, 1997; Casanave, 2002).

An ethnographic study of 11 students using activity theory (Lundell & Beach, 2003) isolated two central contradictions of graduate education revealed in their processes of thesis writing:

- Students must write in the format and style required by the rules of the department and university, but the formats and styles do not easily translate into presentation or publications for the job market.
- They must conform to the practices of the thesis director, who is often uninformed about the department/university rules, and who does not give them the rules.

Paré and Starke Meyerling's study (2009) of 60 Ph.D. students and their thesis directors found that the thesis is not only a *double* genre—a last exercise at the university, a final test, but also, entirely or partially, the first significant contribution to the disciplinary conversations. The thesis is also a *multi-genre*, which responds to multiple exigencies, functions in multiple systems of activity, and is addressed to multiple readers. Not only does the thesis contain a number of distinct embedded genres, each difficult to master (e.g., literature review, essay, experimental report), but it also responds to different social actions in many contexts, including the dyad of the director and student, the thesis committee, the department, the university, the disciplinary community, hiring committees, and the broader social structures of research in the field. Thus, the thesis is perhaps the most complex genre written in the university (whether by students, teachers, or researchers) in its multiplicity of intellectual, rhetorical and social demands.

In the last five years, interventions to support thesis writers have proliferated in the North America. Even prestigious universities such as Yale have what is called a graduate writing center, modeled on undergraduate writing centers. Here students can find individual help, group support, workshops, translation support, and so on.

Contradictions of criticality

In the 1990s the WAC movement received a few criticisms that it did not have a sufficiently radical stance: specifically, that the movement was not critical of disciplinary writing practices (Mahala 1991; LeCourt 1996; Malinowitz 1998; Horner 2000). These critics accused WAC/WID of being complicit with the patriarchal and hegemonic power of disciplines and thus excluding students from radical critique of disciplinary practices and power. Critics also maintained WAC/WID at that time conceived of disciplinary discourses as single, simple constructs rather than multi-voiced and contested practices, a criticism that was often valid. Both of these criticisms point to a fundamental contradiction in US higher education. It is at bottom a very conservative institution, charged with reproduction of knowledge and practices. Yet it is also often expected to be an institution for fostering change, and thus deeply political, even—or perhaps especially—in its written discourse, though this political aspect is generally hidden.

In response in part to such criticisms, a number of fine-grained ethnographic studies of students wrestling with the political dimensions of disciplinary discourse were conducted. David Seitz (2004), for example, studied students who were in a cultural studies course in which the teacher encouraged them to be critical, in the radical political sense mentioned above. Seitz followed a group of students in the course, including during the term after they left it, to their working class lives in Chicago. Seitz found that the students themselves offering a powerful critique of the critical teacher. Similarly, Lucille McCarthy and a teacher-researcher from philosophy she collaborates with, Steve Fishman, did a series book-length ethnographic studies of university students focusing on race and class, which very much complicate notions of the critical. Thaiss & Zwacki (2006) studied the writing practices of professors in several disciplines at a US research university in comparison to the ways they teach

writing to students. They found that in research writing professors navigate multiple boundaries, even disciplinary ones, stretch genre expectations, and generally deal with complexity. While some of the professors invited students to engage with ambiguity and variation in writing expectations, most relied on teaching a normative version of their discipline's genres or of more generalized academic genres.

Those answering the radical critics of WAC/WID emphasize the potential for change in teachers, departmental curricula, and disciplines through writing experts working with all the above to expose practices long unexamined and imagine new uses for writing--"subversion from within." (Maimion & McLeod 2000; Bazerman 1992). Change in disciplines then comes from the inside as more voices with more diverse views enter into the discussion.

Case study and longitudinal studies of professors suggest the possibilities and limits of such an approach, given the contradictions between expectations for teaching and research in US universities (Walvoord 1997; Walvoord & McCarthy 1990). Deep change requires long-term commitments to collaboration with teachers in the disciplines and institutional structures to support that. Interventions at the level of disciplinary organizations occurred most notably in Engineering, whose national accrediting agency, ABET, made communication one of its six major criteria for certifying university departments of engineering as compliant with standards. This spawned collaboration and research over the last decade under the rubric of EngiComm (Leydens, & Schneider 2009). More recently, a discipline-level multi-university intervention and research project in Computer Science, funded by the National Science Foundation, attempts to construct and test a four-year framework for developing students' communication—primarily written—in that field (Carter, Vouk, Gannod, Burge, Anderson & Hoffman 2011). At the university level, there are ongoing projects to conduct in every department a survey and iterative reform of curricula and pedagogy. The University of Minnesota (2013) Writing Enhanced Curriculum, for example, has a team of WAC experts work with individual departments to survey their needs, change curriculum, develop interventions, and assess them in a three-year iterative cycle. (See also Graves, Hyland & Samuels 2010; Toronto, NCSU.). However, these are rare.

Conclusion

In summary, over the last four decades, the foregrounding of writing in US HE has revealed six contradictions. 1) North American WAC/WiD efforts with university teachers exposed a contradiction between writing viewed as an autonomous transcription of speech or thought and writing viewed as an integral part of the intellectual activity of a discipline: in other words, writing as transversal versus writing as specialized. Closely related is 2) a contradiction between genre conceived as a container of content--a form/content dualism--versus genre conceived as social action—uniting form and content in activity. Thus is highlighted a tension between writing taught in situ by teachers in the disciplines through the activity of the disciplines and writing taught in separate, add-on ways, formally separated from instruction in the discipline. 3) Attention to writing similarly indexes a contradiction in

HE between discrete learning of content versus intellectual / professional / personal development. The slogan “students should write to learn” masks the potentially deeper function of writing in discipline-specific genres, which may provide access to socially and economically important know-how and roles. 4) Writing may provide a means of accessing that know-how and those roles, but there is a fundamental contradiction between the social motive of schooling (epistemic) and the social motive of work (pragmatic), which makes it very difficult to learn write in the ways disciplinary and professional do within HE. 5) This contradiction between formal schooling and professional work is played out in writing (and directing) the genre of the thesis, although again, the role of writing in the transition is often hidden.

Finally 6) attention to the relationship between writing and disciplinary work has bared a fundamental contradiction in US HE. HE is bottom a very conservative institution, whose goal is reproduction of knowledge and social practices. Yet the modern university is also a driver of change, in various and contested directions. These tensions—deeply political in the broadest sense of the term—are played out in the written discourse of disciplines, whose conventions and values are dynamic and contested in the very structure of their discourse, though this political aspect is generally submerged in their routine work.

For professionals writing routine genres—genres they know well—writing does not need to be a focus of attention. It seems uninteresting, invisible, something learned long ago. In routine genres there seems to be no “writing,” only “writing it up,” the last and least interesting step. This invisibility is fine—useful—until it breaks down under the pressure of new challenges, and thus writing is bumped up into conscious attention, with the attendant emotions of anxiety. This is a normal part of learning to write a new genre in a new activity system (a scientist having to write a press release, for example (Smart, 2000)).

Yet for students, the specialized genres of the disciplines of higher education are for the most part new challenges, and bring anxiety. Indeed, the genres often go by the same names as those the students wrote in secondary school (essay, report), and thus bring attendant confusion and unlearning necessary to sort out the differences in the kinds and disciplines of thinking/writing (Graves et al., 2010; Donahue, 2008). So students must consciously wrestle with writing. Students must struggle to acquire on their own the genre know-how that is for their professors so routinized, operationalized in the activity and “content” of the field, as to be invisible to them. Yet this is the very know-how on which not only students’ grades but also their success beyond the university depend, in large part (as employer surveys so often point out (e.g., Bowers & Metcalf, 2008)). This is the fundamental and unchanging challenge of teaching and learning (with) with writing.

Yet in recent years, with the new challenges of higher education, what is true for individuals has become true for the HE sector writ large. The old ways of teaching and learning (with) writing no longer work smoothly. Student writing development has thus become an object of conscious attention, a “problem” in HE, because it reveals fundamental contradictions in contemporary HE. Higher education sits between two contradictory pressures, what Burton Clark (1989) has called disciplinary excellence versus social equity. On one end, the intake end of social equity, far more students (and far more diverse students) come streaming into higher education—bringing in a

far greater diversity of linguistic resources, not only international students but also students from different cultural and class backgrounds. Many of these new students do not know the ways of reading and writing that seem to be second nature to traditional students. Moreover, the patterns of participation have changed, with many students are in HE part time, balancing schedules and, more importantly, spending a large part of their time away from the academic environment and its traditional discourses.

On the other end, disciplinary excellence, HE is also changing. Excellence used to mean reproducing an intellectual (and in many ways a social) elite, to carry on what was then the relatively stable work of the disciplines and professions. But changes in both knowledge and work mean that post-industrial societies and economies need more "knowledge workers," and this knowledge work depends on written communication in and between specialisms. HE is essential to the employability agendas of modern societies, and this means HE must use and teach more sophisticated and diverse genres of written communication. Students are leaving higher education to enter far more specialised and yet far more interdisciplinary workplaces. As the pace and complexity of global communication increases, the division of intellectual labor increases, and with it the importance of writing. Students will have to have greater linguistic and rhetorical flexibility to effectively enter and eventually transform professions and institutions.

Between these two contradictory pressures, a changing notion of social equity on one hand and a changing notion of disciplinary excellence on the other, sits student writing in higher education. Because it is no longer possible for HE to simply skim the cream and pour the rest out, it is no longer possible to ignore issues of teaching and learning, and no longer possible to leave the problem of writing development solely in the hands of individual students, unaided by academic staff.

Attention to writing, then, is not a distraction from teaching content, but a means of teaching it more effectively, because content is seen not as a thing to be put into students' minds but resources for engaging with, communicating with, others and the world—most powerfully, usually, through writing. In this sense, writing is no longer a remedial subject, another course or courses to be taken outside a curriculum (the knee-jerk reaction of modern HE to problems is to create another course). Writing is rather a shared responsibility, a means of teaching and learning and critical thinking for both students and researchers. And as the tradition of research I have touched upon here suggests, writing is also an interesting object of research and tool of pedagogical experiment and reform in its own right.

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