CHAPTER ELEVEN

Where Do the Naturalistic Studies of WAC/WID Point? A Research Review

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One of the most significant developments in writing research over the last fifteen years has been the large number of naturalistic studies of college-level writing in the disciplines inspired by the WAC movement. In this chapter, I selectively review some of the over one hundred studies to suggest what conclusions we might tentatively draw at this stage and what avenues for further research they open.

Qualitative studies have predominated in recent years because the early attempts to perform quantitative experimental studies yielded confusing results (for reviews and analyses, see Schumacher and Nash; Ackerman; Geisler). When these studies attempted to test a central claim of WAC, that writing improves learning or thinking (Emig), they found that writing does not automatically improve either. Indeed, when writing was used to improve students' performance on the usual kinds of school tests, it often had no effect or a negative effect. Ackerman concludes his meta-analysis of twenty-six studies thus: "Writing simply may not perform well in the relatively brief and unrelated learning episodes that appear both in research and in practice" (359).

When students were given tasks differing significantly from "the standard knowledge-transmission purposes of the schools," however, writing helped students learn (Geisler 48). Simple fact-based learning may be better achieved through other study strategies (Durst; Penrose). But when students need to learn to solve what psychologists call "ill-structured problems," where there are no single right answers—as in most professional workplaces—

writing seems to help (Ackerman 359). Moreover, when we "distinguish between the literacy practices required in schools and those used in the . . . professions," Geisler argues, the experimental studies suggest that writing helps students become more involved in the activities, values, and expert practices of professions, as students appropriate—and sometimes critique—the written genres with which those professions do much of their work (44).

Experimental studies also suggest that it makes all the difference what kind of writing (genre, in Carolyn Miller's formulation of it) is used to support learning and how that writing is used (process in the broad sense). Students who are not motivated or challenged by a genre of writing do not profit from it, and some genres of writing support some kinds of learning better than others. For example, Cooper and MacDonald found that students in a Chinese-literature course who wrote journals directed by a series of cumulative, discipline-based prompts leading them through the readings did much better on analytical course papers than students who wrote undirected or "dialogic" journals. The journal prompts helped the students read the material in terms of the discipline of literary analysis.

"Writing does complicate and thus enrich the thinking process," as Ackerman concludes his 1993 research review, "but will result in learning only when writing is situationally supported and valued" (359). In other words, there is nothing magic about writing. As anthropological and sociological studies of literacy worldwide have shown, writing is not autonomous (Street). It does not work in one way, with one set of effects, but in many ways, with many and varied effects, given the specific system(s) of human activity in which a particular text or specific genre functions. Writing facilitates all kinds of social actions using all sorts of textual forms, in combination with nontextual forms (machinery, apparatus, architecture, gesture, drawing, etc.).

Writing is not a single generalizable skill, then, learned once and for all at an early age, but a complex range of accomplishments, variously tied to myriad human practices, which may develop over a lifetime as the desire or need to do new things with new genres of writing arises. Just as a scientist who can write one genre (say, an experimental article) might find it daunting or even impossible to write an acceptable article for a mass circulation

magazine—even on the same subject—so students moving from course to course must learn new genres (McCarthy, "Stranger"). Writing is a potentially powerful tool of teaching, as it is a tool of many other modern systems of activity, but an immensely plastic tool that can be used well or poorly, for good or for ill.

That is why researchers have turned to qualitative studies to tease out of the immensely varied and complex human relationships that writing facilitates those factors that students and teachers and program builders might attend to when deciding where and how to use writing. As I summarize representative studies, I will try to answer the question posed in the title. The qualitative studies point faculty and program directors beyond the search for universal or autonomous approaches toward much more messy—and human—factors. To help students learn to write for some new social practice(s), we must look at how writing variously mediates the activities of specific classrooms as they intersect with other activities that use writing—those of curricula, institutions, disciplines, professions, and the wider personal and public spaces where writing is used to get things done. The studies consistently point to four factors that condition and shape writing and learning in secondary and higher education: (1) the students' motives as they move through and beyond formal schooling, negotiating their future directions and commitments with those of the disciplines and professions that faculty and classrooms represent; (2) the identities that students (re)construct as they try on new ways with the written word; (3) the pedagogical tools that faculty provide (or don't provide) students; and (4) the processes through which students learn to write and write to learn in formal schooling.

I have organized this review in reverse chronological order, looking at writing first in professional workplaces that most students will enter and eventually transform, then in graduate and internship education, then in introductory and intermediate courses for majors, and finally in general or liberal education courses. Though this organization is counterintuitive, I admit, we must see where students are headed with their writing before we can understand the ways schooling helps (or hinders) them getting there. If, as it has traditionally been assumed, writing were autonomous—a neat, once-and-for-all skill applicable to any

social practice—then looking at writing in the social practices students will enter and eventually transform with their writing would be unnecessary. But because school writing is immensely conditioned and shaped by myriad social practices, we must understand how social practices such as professions and disciplines intersect with schooling at various points in students' development as writers.

I must note here that I do not take up the important research on faculty learning to use writing to improve their teaching. Walvoord et al.'s recent study of faculty, *In the Long Run*, provides an excellent overview and critique of that literature, as well as an exemplary addition to it. Nor do I take up studies of general composition courses, except were they specifically look at students writing across the curriculum (e.g., McCarthy, "Stranger"; Ronald).

Workplace Writing—As Immensely Varied as Professional Work

Qualitative research on how students write and learn to write has been profoundly influenced by cultural-historical ethnographic and discourse-analysis studies of how professionals write and learn to write, and I begin with these studies because a central goal of higher education (and WAC/WID programs) is to prepare students to enter and transform systems of professional activity, mediated in large part by a vast range of written genres.

Bazerman began the tradition of cultural-historical ethnographic research into workplace writing by looking at the humble undergraduate research paper, taught in first-year college writing courses for a little over a century ("Relationship"). He asked what kinds of writing go on among researchers in various disciplines and how writing helps disciplines work. The sociology, history, and philosophy of science provided resources for looking closely at the ways scientists write, and Bazerman began asking how communications were organized in disciplines, how texts of various genres "fit in with the larger systems of disciplinary activity" (*Shaping* 4). Through comparative studies of single articles, discourse-based interviews with physicists, and analyses

of the citation practices of social scientists, he explored how writing practices (and genres) are regularized in various fields for various purposes (*Constructing*). His historical work on the origins of the scientific experimental article and on Thomas Edison's uses of writing to build the immense technological systems of our modern world has shown how writing has come to play the various roles it has in our lives—and our students' lives (*Languages*). Bazerman's research theorizes writing in workplaces as systems of genres, connected intertextually, circulating among various people and institutions to get work done. The humble research paper and most other classroom genres have their origins and their ends in these dynamic systems of professional genres without which modern society would be impossible. Bazerman's work has been extended by a number of researchers who have examined texts in various social practices.

Myers traces the textual genres and negotiations in biology research (*Writing*). He begins with grant proposals, the most overtly persuasive genre of scientific writing and the most essential. He follows two biologists revising proposals to align themselves with the mainstream of the discipline while carving out a space for their own attempts to modify the course of that stream; he investigates the negotiation of the status of the two biologists' knowledge claims in the reviewing process of a journal; and he chronicles the controversies among specialist "core researchers" as they reinterpret each others' work. Myers also moves beyond the activity systems of core researchers to consider the textual practices of popular science journal editors and scientists as they reposition or translate their highly specialized genres into genres that give them power in the wider society, and adapt research to it. Similarly, he looks at science textbooks to see the commodification of scientific knowledge as it is "translated" to serve educational ends ("Textbooks"). And at the furthest reach of commodified expert knowledge, Myers examines a scientific controversy and public policy debate in popular magazines and newspapers (*Writing*) to see how the rhetoric of science, translated into popular genres, extends to the genres of "public" discourse ("Out"), where core researchers participate only indirectly. (The commodification of expert knowledge in expanding systems of activity also occupies Fahnestock, who analyzes the changes in

information as it passes from one activity system to another in increasingly commodified form.) The ways that knowledge circulates textually in professions and disciplines helps us see the complex pathways students must trace to arrive at competence in writing in some field.

MacDonald analyzes representative research articles from three disciplines in the humanities and social sciences to connect highly specific grammatical features (e.g., substantives, nominalization) to the epistemology of a disciplinary subfield (Renaissance New Historicism, Colonial New England social history, and child-caregiver attachment research in psychology). The textual differences, she shows, are more than differences in "jargon," in formal features. Textual differences are constructed by and construct the epistemology of the subfield, its ways of cooperating to identify and solve problems, to make and remake knowledge—or, in the case of literary criticism, to realize an epideictic rather than an epistemic motive. Students must pick up not only textual features as they learn to write, but also the ways specialists think, their identity and motive as members of a disciplinary community.

Other studies examine workplaces less directly related to academia. In the tradition of Odell and Goswami's groundbreaking studies of workplace writing, Yates chronicles the rise of modern organizational communication from the early nineteenth century through the 1920s. She examines its functions (control of far-flung organizations such as railroads), technologies (typewriter, rotary press, carbon paper, and the most powerful of all, the vertical file), and genres (memos, letters, reports, company newsletters, printed forms, timetables, etc.). Yates and Orlikowski have combined Giddens's structuration theory with genre theory to critique contemporary management communication theory from a genre perspective, including the genre of e-mail (Orlikowski and Yates). The ways people communicate textually in and among organizations change over time, and students entering a field enter an unfolding historical process in which their futures are bound up with changing communicative practices.

Studies of the genres and genre systems of a range of workplaces have followed. For example, McCarthy ("Psychiatrist")

examines the epistemological and textual consequences of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*), psychiatry's charter document, on a psychiatrist's evaluation of a client. McCarthy and Gerring trace the negotiations that led to *DSM*'s revision. They followed the working group on eating disorders for three years, documenting the struggle to create a new diagnostic category, Binge Eating Disorder, and the stakes involved in the decision: status, research funding, and so on. The recognition of a new disorder by the profession was an intensely rhetorical/political process. Berkenkotter and Ravotas continue that line of investigation as they follow the construction of categories in the written genres of clinicians.

Van Nostrand traces the genres of research and development in the U.S. Department of Defense, charting the recursive flow of knowledge between customers and vendors through the flow of six genres, such as the Request for Proposal. A similar historical interest is evident in Huckin's studies of changes in a professional organization's convention program, the evolution of a scholarly journal, and the complex cycles of peer review in a scientific journal (Berkenkotter and Huckin). These and similar studies of the microlevel textual negotiations that workplace writing mediates show the deeply political nature of written communication in which students will become enmeshed when they enter disciplinary and professional networks.

Brandt is carrying on a large-scale study of the literacy of people from many walks of life over many decades to see how the writing in homes, churches, civic organizations, and so on intersects with the writing in school and workplace. She finds that people's life experience of literacy is immensely various and complex, ranging over a lifetime ("Remembering," "Accumulating").

In sum, writing is clearly not a single, autonomous skill, learned once and for all, but a varied and developing accomplishment. It is bound up with complex questions of motive, identity, tools, and processes. And writing in formal schooling can prepare—or fail to prepare—people for a lifetime of involvements in modern culture—personal, civic, religious, and artistic as well as intellectual and professional.

Writing in Graduate School and in Internships

Ordinarily, students must see themselves as students, mastering a discrete body of information and skills—until they find themselves in contact with professional networks. But in making the transition from school to work, school writing takes on added importance and complexity. Perhaps the best place to see the difficulties students have learning to write in the disciplines is in studies of graduate students and interns. Both emphasize how idiosyncratic, gradual, and "messy" (in Prior's phrase [*Writing/ Disciplinarity*]) it is to learn to write, even when students have chosen a profession and are motivated to identify themselves as professionals and to learn its discursive tools and communicative processes.

There have been many remarkable recent studies of internships (e.g., Winsor; Anson and Forsberg; Dias et al.; Freedman, Adam, and Smart; Smart, "Genre," "Knowledge-Making"; Paré, "Discourse," "Writing") that describe students/professionals in transition, struggling to make sense of a professional networks' writing using the tools they picked up in their schooling. Similarly, studies of the transition from undergraduate to graduate education have broadened our understanding of the complex play of power and identity within writing processes in complex, hierarchical, professional activity systems.

In the seminal study of graduate student writing, Berkenkotter, Huckin, and Ackerman follow the rhetorical development of one student during his first year in a prestigious Ph.D. program in rhetoric. Their quantitative discourse analysis of his five course papers written that year showed that "Nate" (co-author Ackerman) gradually came to produce texts that used more and more of the tools of the discipline: its expository patterns, syntactic complexity, avoidance of hyperbole, and sentence subjects referring to the disciplinary object and not himself.

Yet Nate had difficulty producing consistent cohesive ties, logical connections, and thematic unity. The authors trace this difficulty to his unfamiliarity with the discipline's activity system. And they examine, through qualitative methods, his processes in learning to write the genres of social science research

through reading in the field and interacting with faculty. Nate drew on his history as a teacher of composition, a role in which expressive, personal genres are valued, to learn the much more impersonal, formal genres of expository social science writing. He reached back through informal writing in notes to himself and memos to professors to generate ideas and—crucially—to wrestle with issues of identity and motive. He finally came to (uneasy) terms with the necessity to adopt the observer stance of the discipline and its social-scientific detachment from the student writers it studies.

This article announced a central theme in future work: that newcomers to a genre/activity bring their cultural history to their writing and take an active role in learning as they wrestle with new genres. The studies of graduate students' writing that followed also suggest that disciplinary enculturation may be less a gradual absorption or assimilation and more a messy struggle.

Drawing heavily on Bakhtin's theory of speech genres, Paul Prior's studies of graduate students' development in applied linguistics, sociology, geography, and American studies extended the analysis to "the ways historical activity is constituted by and lays down sediments in functional systems that coordinate with various media with different properties" ("Contextualizing," "Redefining," "Response," "Tracing," *Writing/Disciplinarity* 36). He looks at the interactions of persons, artifacts (semiotic systems and material artifacts), institutions, practices, and communities to analyze the messy flow of graduate students' literate activity over time in multiple "streams of activity."

In Prior's accounts, the multiple and often conflicting motives and goals of participants in graduate programs, their personal and disciplinary histories, shape their mutual appropriation of tools and their dynamic representations of writing tasks—and of their own identities. Students and their teachers engage in a process of "genrification"—reclassifying texts, attributing resemblance—in the process "aligning" themselves with others. Agency is distributed in streams of activity as participants appropriate voices in the networks of disciplinary practice. Their images of authorship change as they negotiate authorship among themselves in their oral and written interactions, redrawing disciplinary

boundaries as they redraw their personal boundaries and align themselves with—and sometimes reject—powerful disciplinary social practices.

Ann Blakeslee builds on the work in situated cognition to analyze how graduate students learn to write experimental articles in physics—focusing on their failures. She points to the limitations of situated cognition theory's emphasis on the weakness of intentional or prescriptive pedagogy. Indirect support "often seems insufficient to newcomers who have no previous experience engaging in the tasks they are asked to perform," she argues ("Activity" 145). Newcomers have residual writing practices and approaches to learning drawn from formal schooling that they appropriate—often unsuccessfully and unreflectively—to genres of research writing that have subtly different motives and conventions. And students' lack of authority makes it hard for them to fully engage in the domain's activity or challenge its direction, even "though they may be completely competent intellectually" ("Activity" 156). Blakeslee argues that explicit, direct support, reflective mentioning, making goals and motives explicit, and an earlier sharing of authority may be necessary support for engagement in the discipline's activity or allow some newcomers to understand, embrace, and transform the discipline and its genres.

Casanave also tells the story of a graduate student wrestling unsuccessfully with writing demands, this time a Hispanic sociology student who could not reconcile the conflict between disciplinary and personal values played out in her attempts to write assignments in theory courses. "Everyday" English and Spanish "came to be less valuable to her over time as tools for communicating her ideas about her work with friends and family in that they were not valued as resources for communication within the [sociology] department" ("Cultural" 161). Moreover, contradictions within sociology between positivist and hermeneutic approaches (made salient in the writing assignments) left her unable to reconcile the motive that drew her into the discipline—helping women, minorities, and educators in culturally mixed neighborhoods—with the motive of the most powerful wing of sociology. Alienated, she dropped out to become a researcher in a nonprofit Puerto Rican educational organization in New York. But she regretted leaving because she felt she would have less power to

make a difference if she didn't stay with the more powerful core of the disciplinary practice. "Having a Masters in sociology is not enough to get people to listen to the ideas of a young Puerto Rican woman" ("Cultural" 173).

Chin traces the material conditions of communication—phone access, office placement, and so on—for graduate students in journalism. Their "failures" to write the genres research-oriented professors demanded of them arose from the sociologic of their ambiguous dangling between the activity systems of working journalists and professors of journalism, unsure of their identity as writers—and future professionals.

The most in-depth treatment of interns' writing is Winsor's four-year longitudinal study of four engineering students. Taught by their discipline to ignore the rhetorical character of their education and work, they nevertheless gradually appropriate the genres of professional writing and come to realize the importance of rhetorical expertise in the complex textual negotiations through which their profession—and the large corporate organizations it serves—is dynamically reconstructed. Each student follows a different path in his or her appropriation of written genres, paths laid out by their different personal histories and reflected in the very different professional roles and identities within engineering that each finds. What is competent writing at one point in their education, at one position in the vast activity systems of engineering, may be radically different from competent writing at some other point, some other node in the professional network. Given this local and variable character of writing, would-be insiders have great difficulty stepping back in order to understand and critique the rhetoric of their discipline, though Winsor finds such critique emerging in these young engineers.

The most comprehensive research on interns is being carried on by a group of Canadians who are exploring the transition from formal schooling to work in banking (Smart, "Genre," "Knowledge-Making"; Dias et al.; Freedman and Smart), finance (Freedman, Adam, and Smart), law (Freedman, "Reconceiving"), social work (Dias et al.; Paré, "Discourse"), engineering (Beer), architecture (Medway, "Language"; Dias et al.), and other related professions. They combine North American genre theory, situated learning, distributed cognition, and Engeström's systems

version of activity theory to trace the profound ways school writing differs from workplace writing—and the ways student writers become professionals writing.

Beginning with the notion that people learn to write through activity-with-others, social engagement, Freedman and Adam describe school activity—the collaboration of teachers and learners—as "facilitated performance," in which the goal of the activity itself is learning. In nonschool workplaces, writing "occurs as an integral but tacit part of participation in communities of practice, whose activities are oriented towards practical or material outcomes," which the authors call "attenuated authentic performance," modifying Lave and Wenger's (1991) categories (Dias et al. 199). This difference profoundly affects people and their uses of texts in a host of ways: the psychology of instructor-learner interactions, the sociologics of power relations, the genres people write and read, the nature of assessment and sorting, and the writing processes they use, with improvisatory learning and "document cycling"—feedback and revision loops—being much more important in nonschool workplaces.

Smart and Freedman's work on banking explores the ways in which cognition in organizations is "enacted, preserved, communicated, and renegotiated through written texts" in systems of genres that mediate the routine actions of bankers and economists. They look at interns, senior managers learning a new genre, staff analysts, and others (Smart, "Genre," "Knowledge-Making"; Dias et al.; Freedman and Smart).

Paré's studies of social workers in hospitals and legal settings also suggest the extraordinarily broad range of genres/uses for writing, and the ways genres mediate power and authority (Dias et al.; Paré, "Discourse," "Writing"). Within a hospital or a court system, a large number of professions organize their work around shared written records, and in the writing and use of those records Paré traces competing and often contradictory motives. Social workers must negotiate various administrative, financial, legal, and medical interests and accountabilities—along with the interests of individual clients—in the routine but always changing genres of written records. Fledgling social workers, in internships and practicums, struggle mightily to find and create their place among these professional communities through writing, in which

even the most seemingly trivial phrases in reports can have life-changing consequences for clients. Fortunately, newcomers are guided by traditions of induction that support them, in tacit ways, as they learn what to write/do—and who they are in the process.

Medway's studies of architecture students (Medway, "Language"; Dias et al.) emphasize another theme in North American genre research: the relation of alphabetized text to other media of inscriptions. He traces the ways students use a wide range of genres in alphabetized text that are "casual or undeclared" (informal and private jottings on drawings, notes, etc.) in conjunction with genres of graphical signs and diagrams that have a spatial as well as syntactic arrangement. In the "unofficial texts the students are rehearsing both the ideational content and the rhetoric—the terms and argumentative structures—of the discipline" (Dias et al. 29).

These qualitative studies of the transition from schooling to work get at the microlevel relations between school and society, in Dewey's phrase (Russell, "Vygotsky," "Rethinking"), and put into a wider—and starker—perspective the debates over transfer of learning and explicit versus implicit instruction (Freedman, "Show"; Williams and Colomb). The motives, identities, tools, and processes that students appropriate as they move from formal schooling to work are by no means linear or neat. They do not simply transfer knowledge of writing to new environments, nor do they learn to write through either explicit precepts and formulae or implicit trial and error. Rather, they learn to write through a complex negotiation between people and tools as they expand their involvement with some powerful system(s) of human activity mediated by dynamic systems of texts.

Writing in Intermediate and Beginning Courses in the Disciplines

Questions of the motivation for writing are central to students who have just begun their involvement with a discipline that they imagine might become their life's path. In studies of students in intermediate and beginning courses in a major, it is clear that writing is not a single skill, learned once and for all at an early

age, as the autonomous view of literacy would have it. Instead, students appropriate (or ignore or resist) the genres of a class or discipline (pick up or reject its discursive tools) to the extent that they find them useful for further involvement with the discipline and its motives—or with other disciplines or peer groups, families, churches, hobbies, etc. This is often at odds with the motives of their teachers.

Professors, as representatives of a discipline, generally see students as professionals-in-training (Walvoord and McCarthy). They often assume—like the blind men and the elephant—that their particular genres represent the whole of academic writing. Since modern secondary and higher education developed in the late 1800s, school writing has settled into a relatively few "classroom genres" (Christie): the research paper, the essay (exam), and the laboratory report, each of which reflects, however dimly, the writing of professionals (scholarly articles and essays, experimental reports) (Russell, *Writing*, "Rethinking"). Yet these classroom genres vary immensely by discipline, such that a student must "psych" the teacher to divine the expectations for a particular discipline and course. What pushes students to do that?

The most immediate motive for students and teachers is the getting and assigning of grades, the institutional motive of selection. Students are writing first "for the grade," not for further involvement. Sometimes, however, students come to identify with (want further involvement with) one or more of those disciplines, and are motivated to appropriate its ways with words (learn to write new genres, to put it simply). They begin writing out of some motive beyond the grade.

As undergraduates in North American universities move from course to course, discipline to discipline, they are like "strangers in strange lands," as McCarthy ("Stranger") put it in one of the best cross-disciplinary comparative case studies of writing in undergraduate education. Her participant, Dave, experienced great difficulty when asked to write in radically different genres in biology, poetry, and composition classes, with little sense of the scholarly and research activities of the disciplines that motivated those genres. Despite some similarities among the genres of the different disciplines, he experienced them as totally different from one another. Because he was more interested in biology,

and because the teacher furnished him more tools for involvement with the discipline than did the poetry professor, he more readily appropriated the genres of biology and came to see himself as a potential scientist (rather than a potential literary critic).

Faigley and Hansen's study of students writing social science papers in psychology, sociology, and English reveals the complexity of recognizing and appropriating disciplinary motives and discursive tools. Students in the social science courses found it difficult to understand the motive of the writing from the professor's (disciplinary) point of view. "To tell you the truth, I really don't understand what he's trying to do," one complained (143). An English professor helping a student write a sociology paper did not understand the sociological motive for analyzing the penal system, and the English professor's only comments on the student's paper dealt with surface features rather than "the depth of [the student's] encounter with the probation system," which the sociology professor was interested in (as well as the student, whose motive was becoming a lawyer) (147). Though the English teacher could understand the motives of writing to a general reader (journalistic genres), he could not evaluate the student's grasp of the penal system from a sociological perspective (and therefore the student's success in writing sociological analysis). Similar misunderstandings about "task representations" occur within courses in the same discipline.

Herrington's ("Writing") comparison of upper-level students writing in a lab course and a design course in chemical engineering found that the "courses did represent different classroom contexts or forums" (340). Lines of reasoning differed between the two courses' reports (340–41), as did the students' perception of the role of writing: epideictic and evaluative in the lab course, where the assignment did not have a plausible professional context and the students were writing for the instructor (or a less-informed version of the instructor), and deliberative in the design course, where the students were writing to influence an imaginary client's decision and the professor took the role of project design chief. In the lab course, students were not often conscious of having an identity beyond that of a student pleasing a professor. In the design course, they took on the role of practicing engineers—"suddenly we're experts" (349). They cited their

own knowledge much more frequently, but displayed less knowledge of basic engineering (since a professional audience would assume it). Herrington concludes:

> Members of each community did not always agree on the conventions appropriate to that forum. Professors' perceptions of the conventions sometimes differed from those of the students. In the design course, the professor presented [the] audience as [a] project design chief, in a corporate setting, and students responded accordingly. Faculty shaped these roles, viewing the lab exercises as a learner-centered exercise to get concepts straight. Students saw it as tedious exercise in giving teachers what they want. (342)

Herrington's ("Teaching") study of two students in an introductory literary criticism course suggests how crucial it is for students to appropriate the motive of the discipline, as well as its discursive tools, in order to write successfully. The teacher wanted the students to "learn how to read [and write] like English majors," but the "individual students' own backgrounds and interests" profoundly influenced their "perceptions of functions and how they respond to the teacher" (152). Students who had already appropriated the motive of literary study, who already understood the object of the game, made argumentative claims and marshaled evidence for a discipline-sanctioned argumentative purpose—"not just a spit-back, [but] some reason you should be writing this paper," as one student put it (156). They were working out problems not only for themselves (their personal motives) but also for the disciplinary community. Herrington suggests that a more explicit writing pedagogy might give students a way to link their interests to those of the discipline and appropriate discursive tools for greater involvement, fostering independent inquiry rather than merely doing it for the grade.

Greene's ("Role") study of two groups of upper-level European-history students using six sources and their prior knowledge to write two different classroom genres (report and problem-based essay) also points to students' difficulty in going beyond the activity system of formal schooling. Neither the group writing reports nor the group writing problem-based essays used more prior knowledge than the other (or much at all). Both merely attempted to "demonstrate that they had done the reading, that

they knew what the key issues and problems were" (67). Even on the problem-based essay, most students did not feel free to go beyond sources and venture an opinion, only demonstrating that they had read the sources. "You leave yourself open far more," said one student, who had been criticized by teachers when she ventured an opinion. But another student with prior experience in a debate club "constructed an image of the teacher as someone who valued the ideas of students and appreciated students' willingness to go beyond the task" (61). Though the students writing problem-based essays used more items from sources (perhaps because the prompt was more involving), both groups tended to use citations as "sources of information rather than as resources for supporting an argument or locating a faulty path" (68). Neither group did better on a pre-/post-test of learning, perhaps because even the problem-based task was perceived as a school exercise, not as a professional genre that involved students with the processes and motives of the discipline, as the researchers had hypothesized.

Jolliffe and Brier's study of upper-level (and some graduate) nursing and political science students writing abstracts of research literature supports their proposition that "a person's participation in the intellectual activities of an academic discipline directly affects his or her acquisition, use, and awareness of these kinds of knowledge"—including writing (35). "For the political science writers, the degree to which they read texts on subjects similar [to the article they wrote abstracts on] significantly predicted a higher summed holistic score on abstracts" (67). But nursing students did better on the summaries (e.g., discussed methodology more often), perhaps because they had almost all worked in nursing, all wanted to be nurses, and their curriculum required more writing in professional genres (68–79). Political science students, by contrast, "take political science courses for a number of personal and professional reasons" and have more electives. "Thus, political science professors may not feel the need to socialize students into the language . . . of the field." "Even the more advanced writers [graduate students] in this study suggested little unanimity on what it means to write successfully as a political scientist." Nursing students, with their intensive socialization in a more specialized and "crowded" curriculum, appropriated

genres more quickly (71). The student nurses and their teachers saw themselves as soon-to-be professionals in action; the political science students were still doing school, not yet actively involved in professional work and lacking identity as professionals-in-training.

Hare and Fitzsimmons found that undergraduates from nursing who had read research literature from their field, analyzed its IMRD (instruction, methods, results, discussion) structure, and written papers using that structure were much more adept at writing a missing discussion from a research article in *education* than were undergraduates in education who had not read, analyzed, or written research articles in their own field using the IMRD structure. The nursing students appropriately recognized the genre as an experimental article and appropriated useful discursive tools. They related claims to data and in some cases provided warrants and backing. Moreover, they reported the results and discussed how the results filled the gap in research. Their discussion sections, however, clearly showed their lack of involvement with the activity of educational research. They made far more unsubstantiated claims than graduate students in education, and were "unable to make incisive and original claims," even compared to the undergraduate students. Hare and Fitzsimmons conclude:

> On the strength of their literacy experiences in nursing, they were able to invent discussion sections for an educational research article that were structurally comparable to the ones written by masters' students in education. On the other hand, education students with virtually no experience in the research discourse community were unable to invent the community's discourse successfully. (375)

The choice of a life path clearly affects students' motivation, sense of identity/agency, and choice of tools in writing. Chiseri-Strater offers a moving book-length portrait of two students, Anna and Nick, who use writing as a tool to make decisions on major and career, and two professors trying out changes in the way they use writing to teach general education. Anna has trouble meeting the writing demand of an art history professor that she move beyond incoherent description and biography ("Cuisinart"

writing) to disciplinary-sanctioned analysis (97). On a final paper, however, Anna begins to connect art to the ecofeminism movement, uniting the personal, political, and academic dimensions of life. She becomes an art history major as a result. Nick, by contrast, uses writing to try on identities, to pose, as he moves from major to major, but he never overcomes his view of academic writing as competitive display, and never becomes involved in a discipline.

> In the end, Anna becomes a successful learner, not because she adapts to the mastery model but because she makes a conscious effort to "connect" her course work, an approach documented by feminist scholars looking at the different learning styles of women students. Nick, however, remains the separate knower within the academic setting, compartmentalizing and isolating his course work. (146)

The teachers helped little in these processes, she concludes: "From the students' perspective the literacy norms within most fields—the reading, writing, talking, and thinking patterns of the discipline—most often remain powerfully invisible, not offering ready access for them to earn membership in any discourse community" (144).

Similarly, in a four-year study of one biology student, Haas traces Eliza's growing sophistication as a reader of biology texts. Eliza gradually increased her involvement with a wider network of human agents and texts, "a growing cast of characters in the 'drama' of her interaction with texts" (71). In her summer job as a professor's lab assistant, for example, she got a sense of the sociocultural settings of biology.

Walvoord and McCarthy's book-length study of four courses in different disciplines suggests the complexity involved in understanding students' writing challenges and helping them to meet them. For example, when a production management professor had students evaluate various sites for a stadium, he expected them to write using the quantitative tools of his field in a genre similar to those of his discipline/profession, in the role of a business decision maker. He was dismayed to find they wrote in genres of the popular press and peer groups, without reference to the genres of the discipline he was teaching them. They had trouble

seeing themselves as professionals-in-training, appropriating instead model genres and strategies from their other courses, such as the term paper or reflection paper, rather than learning to write a new genre, the business plan. Walvoord and the professor found that the students had difficulty gathering sufficient information for the case study; instead of using information from the textbook to develop problem-solving procedures (the how), they merely harvested declarative knowledge (the what). Their conversations with peers pushed their writing in the direction of dorm room or street corner debate rather than disciplinary analysis. And they often lacked topic-specific knowledge that would allow them to gather information in useful ways for later analysis—and see themselves as professionals-in-training as well as students completing another course assignment.

Walvoord and the professor traced the difficulties to mismatches between students' and teacher's expectations. They set about expanding and restructuring the assignment sheet, explicitly teaching—early in the process—strategies for writing, and modeling more useful strategies for gathering information, analyzing it in discipline-specific ways, and writing the genres expected in the language they wanted students to use.

Similarly, a biology professor's students had difficulty defining roles for themselves and their audience as they wrote lab reports on an experiment they had designed and conducted to evaluate a product. Some took the role of moralizing parent or storyteller, for example, or cast readers in the role of sports fans. Students had trouble stating a position, using discipline-based methods to arrive at and support it, managing complexity, gathering sufficient specific information, constructing operational definitions, and organizing the paper in the IMRD structure. When the professor taught the course three years later, she had developed a series of teaching strategies such as regularly spending class time doing group exercises and presentations on relevant writing tools (e.g., graphics and organization). The students' performance, as measured by external raters, increased.

As more teachers and researchers come to recognize the importance of disciplinary—and social—activity, qualitative research in undergraduate general education courses is expanding to trace the ways motives, identities, tools, and processes are appropri-

ated (and ignored and rejected) by students exploring different disciplinary involvements leading to life paths—and the ways with words these entail.

Writing in General Education

Students just entering college and encountering its discourses in general education or liberal arts courses have an even more difficult task than students who have the direction—the identity and motive—that a major affords, because they are even further from involvement in the activity systems of disciplines, from the day-to-day actions that motivate its writing. Poised between the discourses of their networks of home, peer group, and mass media and the specialized discourses and activity systems of disciplines and professions, they must, as Bartholomae puts it in his ideological analysis of college students' entrance essays, begin "inventing the university" in their writing. They must "appropriate (or be appropriated by) specialized discourse" (135) to become part of some disciplinary project (system). Students "have to speak in the voice and through the codes of those of us with power and wisdom; and they not only have to do this, they have to do it before they know what they are doing, before they have a project to participate in, and before, at least in the terms of our disciplines, they have anything to say" (156). Required performance before active involvement, the need to imagine different identities and motives and the power that comes with involvement, causes errors to increase as students "find some compromise between idiosyncrasy, a personal history, on the one hand, and the requirements of convention, the history of a discipline, on the other" (135). To succeed, "a writer would have to get inside of a discourse that he could in fact only partially imagine" (160), and students in this in-between state, shuffling from one discipline and its genres to another, experience particular difficulty negotiating their futures and their identities through writing.

An important article by a group of first-year students and their teacher, Susan Miller (Anderson et al.), suggests that the "loudest voice" in students' descriptions of their motives was "that of the institution. The students were not, with the excep-

tion of Brandt [who had clear career expectations], planning schedules around related intellectual interests, but cooperating with the institution's provision of paths toward degrees," choosing from a menu of required courses and writing for the grade in them (16). This "generated feelings of frustration and singularity." They originally chose courses out of a diffident sense of duty combined with interest in a course's "uses." But these innocent motives reinforced "'me against this system' views of the pedagogical cultures they entered" (16). Psyching the teacher, divining expectations, and doing a "cost-benefit" analysis of study time and techniques, such as note taking, was central to writing. Writing was more difficult because "teachers across the curriculum did not define knowledge-making as an interactive process, with [a few] notable exceptions" (17). "Learning in these courses was assumed to be a private, competitive action" (17), and knowledge was commodified into hard facts and concepts without competing voices from the discipline that might motivate students' further involvement in its activities. In this environment, they "must compete for admission to major programs while they sustain their interest in introductory courses" (29).

Against this backdrop of an institutional system, North describes three students in an introduction to philosophy course negotiating disciplinary authority and their own personal motives in their required (and graded) journals. They appropriate the tools of philosophy, Alison to affirm her authority as a fundamentalist Christian; Mark to wrestle with his rebellion against his combative father and his inability to make a life commitment; and Yvette, a Jamaican immigrant, to find authority as an independent learner in a new institutional culture. The professor wanted the course to "achieve a general education function, personal values clarification, self discovery," but at the same time he wanted the students "to be philosophers themselves: to articulate their personal philosophies in the context of Western and Eastern thought as represented for them by their textbook" (229). In their struggle to reconcile personal and disciplinary authority and thus identity, students wrestled mightily with the writing, "to get a grip on what we're supposed to do in the journal" (245), as Yvette put it, to sound or not sound like a philosopher: to write garbled textbook paraphrase in an attempt to please the

professor, or common phrases from their "personal" activity systems that risked the professor's criticism.

Such double binds are even more dramatically illustrated in a series of studies by Fishman and McCarthy chronicling Fishman's development as a philosophy professor using writing ("Community," "Teaching," *John Dewey;* McCarthy and Fishman.) He is torn between a desire to give students authority and their "own" language, and his love of philosophy's tools of analysis and his sense of duty to the discipline. As he grants and withholds authority (and grades) to students, he explores the limits of radical pedagogy, of traditional pedagogy, of expressivism, of diversity, and, finally, of a Deweyan pedagogy he tries to formulate:

> That's the problem with starting with personal experience. . . . Students are going to leave this course thinking they've done philosophy. And that's not fair to them. They've not done the reading, so they've not really tasted the challenge and rigor of philosophy. If they're to become sophisticated in their own discussions, they're got to understand something of what's already been said. (Fishman and McCarthy, "Community" 76)

The students attempt to figure him out as they write. Fishman's classroom was "a gathering of novices without an elder," McCarthy writes. "However, it was their very success in establishing their own voices and roles within the group which led students to resist the reading [and philosophical writing]. . . . They saw the texts [of philosophy] as unwelcome intruders" in their personal and collective searches ("Community" 76).

Disciplinary texts are more than repositories of knowledge; they are part of a dynamic system of disciplinary activity, and general education students are outsiders. Geisler offers an activity theory critique of cognitive psychology's autonomous spatial modeling of writing processes—which dominated empirical research in composition for almost a decade—by modeling writing processes in terms of temporal action. Expertise, she argues, is rhetorical. Experts don't merely know and apply rules or structures or norms; they constantly recreate and reinterpret them over time in dynamic social/historical conditions using writing and other semiotic means. She analyzes the development of expertise

in the discipline of philosophy by comparing students in a general education philosophy course and graduate students in philosophy on the "same" task, an analytical philosophy paper.

The graduate students did much better on the task because they had already appropriated the motives, identity, and genres of the discipline, which extend back to William James's curious shuttling between academic and nonacademic activities and genres in his philosophical writing. They wrote as insiders, even when they used personal material and narrative. The general education undergraduate students, in stark contrast, constructed the writing task in terms of more overtly personal motives and goals, and wrote narratives closer to the genres of English classes, with which they were more familiar. The liberal arts students were not doing philosophy, but working out, for example, personal religious or family issues using some of the discursive tools of philosophy—but in a way not sanctioned by the discipline.

Walvoord and McCarthy's book looked at two general education courses, in history and psychology, as well as two upper-level courses. Like other professors in upper-level courses, the history and psychology professors viewed students as professionals-in-training—as debaters in history and as social scientists or counselors in psychology (though the psychology course also allowed for nonprofessional roles). The process of historical argument (stating a position, supporting it with evidence, and handling counterarguments) was taught in large part through oral classroom debates, which modeled the process and served as prewriting—though the process had to be taught and refined to make the students' writing more than mere text processing and to facilitate involvement in the activity of history through its genres.

Finding classroom genres that allow both disciplinary and personal or civic involvement is difficult. In a general education psychology course on human sexuality, the students were assigned to write a letter to a friend about to marry, giving advice on "how to have a good marital sex life" (Walvoord and McCarthy 150). The assignment presumed four complex and interrelated roles: "social scientist, counselor, mentor/friend and self who uses professional knowledge for personal decision-making" (150). Stu-

dents found it difficult to construct an audience and identity as writers. Yet these roles encompassed the various motives that the students in an introductory psychology course might have, and supported the instructor's general education goals of incorporating and testing personal experience in light of disciplinary knowledge. Students tended to adopt the role of "text processor addressing a teacher checking textbook knowledge," or the role of a layperson, rather than the role of professional-in-training. And they appropriated models from other settings (e.g., essay test answer, dorm conversation) that were not sufficient from the teacher's disciplinary point of view (153). The professor and Walvoord looked for strategies to strengthen the expert stance of the student writers and find an appropriate tone that would allow them to integrate discipline-based methods and support a position while still negotiating the complex rhetorical stance the letter required.

Students and teachers in general or liberal education learn and teach and write in an institution where specialization and rigor constitute the highest value, but general or liberal education courses can offer only an introduction. The ambiguous role of writing in general or liberal education, and the genres students and teachers choose and reject, put students' and professors' motives and identities into a complex negotiation as they choose, reject, and transform discursive tools appropriated from the disciplines and personal lives they bring to the classroom.

Where the Literature on WAC/WID Points

The most striking aspect of the qualitative WAC/WID research literature is that it suggests again and again that when writing mediates further involvement with the activity—the social life—of the discipline, it is more successful, both for inviting students to go further intellectually and personally and for selection (helping them and other stakeholders make informed decisions about their future involvements). The literature suggests that for students to achieve the kind of involvement necessary in order to write a new genre successfully, they need four things:

1. **Motivation:** A motive for involving themselves with the people who write in new ways (genres), people pursuing different disciplinary objects of study, is central in drawing students beyond the ways they have written before into new written genres of involvement.

Because institutions of formal education are set up to help professions select students and help students select professions, the grade (officially enabling further involvement) will be a motive and object at all levels. And instructors must acknowledge this and take it into account in assigning, teaching, and evaluating writing. As studies repeatedly show, when instructors do not demonstrate that the writing is important by making it central to teaching and evaluation, most students do not involve themselves with it (writing intensive WAC programs acknowledge the need for such motivation by requiring that writing count significantly in the grade). The tendency to assume that students will write well or learn content through writing simply because they are writing—with or without the motivation to invest the time and effort in writing well—is a legacy of the autonomous view of writing so widespread in our culture.

Though grades may be an initial motive and objective, they are only crude spurs toward further involvement. The writing must help students realize more substantive motives in working with new disciplinary objects of study if it is to be valuable beyond the grade. The motives for and objectives of writing may be those of the discipline, its problems and social values, as students come to select and be selected for further involvement in a profession. And the clearer the relation between the ongoing activity of the profession and the writing in the classroom, the greater the potential for involvement in the profession, for appropriating its objectives and motives, for learning to enter and transform that profession.

Alternatively, students' motives for and objectives of writing may be what has been called "personal" or "public"—further involvement with already-existing activity systems of family, friends, religion, art, politics, gender, race, culture, or another discipline, as students use writing in some discipline to realize motives that may have little or nothing

to do with the profession the course represents. Studies point again and again to students who use writing for objectives and with motives that are not those of the professor or the discipline. Students work out personal and public issues through writing in unpredictable ways; the task the professor has in mind may be very different from the task students are doing from their perspective on the assignment. In a sense, the mismatches and double binds this creates for teachers and students—whether from confusion or downright resistance—can be important to students' development, as they search out paths of future involvement, appropriating, rejecting, and transforming what they are offered in courses (Ronald; Greene, "Making"). Writing is intensely multivalent (in a way multiple-choice tests are not), and the research suggests that these differing motives for and objectives of writing—even on the same assignment—be taken into account.

2. Identity: To understand the ways in which students write and learn to write differently than they have before, researchers have found it crucial to understand the ways in which students construct their identities as writers in particular disciplines and genres. Writing (unlike multiple-choice exams) demands that students have a voice, a sense of themselves as empowered to say some things (and not others). In choosing an identity in their writing, a sense of agency, they enter a complex negotiation with the instructor (and perhaps other students), with the social practices they are already involved in and empowered to write in, and with the more powerful social practices of the discipline that they may choose or choose not (and be chosen or not chosen) to enter. Students must see themselves (past, present, or future) in the writing. Instructors tend to see students as potential professionals-in-training or as vessels to be filled with information (whose potential uses are too veiled in myriad futures to take into account). Students tend to see themselves as students, after a grade and perhaps a life direction, or at least a job. Some will come to identify with the discipline and want to become a part of it, perhaps even involved enough to help transform it.

Studies repeatedly point to students' and instructors' confusion about what identity to assign to themselves and each other in the writing and reading. Where the writing, teaching, and learning seem most successful, instructors and students have a clear sense of their identity and agency, what they can do and say now and what they cannot. And the clearer this is—whether because of a specialized curriculum or extraordinary efforts by the instructor to empower students—the greater the success of writing for learning.

Identity is deeply involved with issues of gender, age, social class, and ethnicity, which have just begun to be studied. As we have seen, writing is a messy activity. It is conditioned—but never determined—by a huge range of historical involvements and by the expectation of future involvements, stretching into an indeterminate future. The few studies that have considered gender, age, social class, and ethnicity suggest that the most powerful influences are families, neighborhoods, and friends. Again and again in the literature we see that the changes resulting from contact with formal education are polyvalent. Change may be "learning" for the teacher but "selling out" for parents and friends. The literature on writing and learning is replete with accounts of deep identity struggles in individuals and groups (e.g., women, African Americans) as they sort out their life directions in relation to "personal" activity systems of family, peer groups, and so on, and as they (re)construct their identities from among contradictory motives of various systems of human activity (Velez; Haas; North; Casanave; Chiseri-Strater). Writing is difficult in part because the process of appropriating certain tools-in-use and not others implies—implicates students and teachers in—certain life directions, certain affiliations, with long-term consequences for their identity (Walvoord and McCarthy).

3. Tools: Qualitative research strongly suggests that students need a range of tools for writing that lead to further involvement. Motive is insufficient by itself (Hare and Fitzsimmons). The most crucial choice of tools is that of genre. In what ways will the kinds of writing students are asked (and al-

lowed) to do involve them in the activity system of the discipline, or help them more usefully engage in activity systems beyond it? If the goal is memorization of facts and concepts, extended writing may not be the best choice. If faculty want something more, then they must choose genres that will bring students into contact with the uses of facts and concepts in their (students' and professors' and professionals') worlds. Fortunately, every discipline and every profession has a wide range of genres, from the most specialized experimental reports and esoteric academic journal articles to the least specialized mass-media magazine and newspaper articles, brochures, position statements, and so on, through which a discipline or profession makes its work useful to various publics. Faculty tend to stick to the traditional classroom genres of essay (exam), research paper, and canned lab report, which have often fossilized into sterile exercises, divorced from the myriad dynamic activities of the discipline. Choosing a genre for student writing is a way of opening students to the worlds of writing through which people work and live.

Other tools for learning to write and writing to learn take many forms in many media, such as explicit instructions and criteria, models, precepts, talk, and physical action. With enough time for trial and error, students can appropriate a genre successfully without explicit help. But most courses don't have that time (or provide sufficient feedback to show students what works and what doesn't). So students need other tools to demystify the discourse of a course or discipline and its uses in and beyond the course or discipline. These tools for helping students learn are all too rarely used in college courses.

Because faculty have been socialized in a discipline, they often assume that students share their perceptions and expectations about writing—what makes it effective and good. The writing, genres, and expectations of their disciplines have become second nature to faculty. But the studies of writing in the disciplines show that unsuccessful writing (from the point of view of faculty, students, or both) proceeds from misunderstandings about what constitutes good writing in a par-

ticular genre. Students need the central tool of clear instructions about the expectations of writing in the discipline, such as assignment sheets and grading criteria.

Another crucial tool is models or examples of the kinds of writing expected. Students have difficulty producing writing in a genre if they have not read examples of it—and understood them as examples of the kind of writing that works in the discipline (Fishman and McCarthy, "Community"; Herrington, "Writing"; Brooke; Greene, "Making"; Charney and Carlson; McCarthy, "Strangers"; Blakeslee, "Activity," "Readers," "Rhetorical"; Henry; Prior, "Contextualizing," "Redefining," "Response," "Tracing," *Writing/Disciplinarity;* but see Freedman, "Show"). Depending on the history and motives of the students, modeling may be implicit or explicit, but modeling is an essential—though often ignored—tool. And models may be used well (as invitations to involvement) or poorly (as forms to be mindlessly copied).

Another tool for demystifying writing is precepts or guide lines about how writing in a genre is done—through assignment sheets, grading criteria, explicit teaching of conventions, specific analysis of models, and so on. Without precepts, students may not understand the salient features of a genre from models presented (if any are), or they may appropriate unimportant features and ignore central ones. Precepts, like models, can be used effectively or ineffectively, as general cookbook recipes and formulas (based on the assumption that writing is autonomous), or as information on how a discipline works through its writing and how students can work with the discipline using what is valuable to them.

Talking together, either in large-group discussion or small-group work, is another important tool. Nystrand's research on secondary literature instruction confirms and expands research on classroom talk that strongly suggests students learn from open-ended dialogue about the content, as they can formulate and reformulate their understanding in preparation for, or as part of, a process of writing. Most classroom talk, however, is not open-ended dialogue on the content, but recitation, in which the teacher elicits previously known information (as on a test), or discussion not related to the

content. Neither seems to involve students in the activity of the discipline in a way that permits them to do extended writing on ill-structured problems as well as they would do using open-ended dialogue (though they may do as well or better on recall tests, which recitation resembles).

Acting together is another tool that facilitates writing, particularly in fields that rely heavily on nonverbal tools, such as laboratory apparatus, and visual tools. Students in engineering, laboratory sciences, nursing, mathematics, and architecture, whose reading and writing are integrated with the goal-directed use of nonverbal tools, seem to appropriate writing along with their use of those tools (Medway, "Language," "Writing"; Haas; Winsor; Smagorinsky and Coppock). As powerful as writing is, it remains one tool among many for learning and cannot be separated from the other tools.

4. Processes: Earlier research on the processes of writing assumed that there is such a thing as *the* writing process. As with the autonomous view of literacy, writing processes were assumed to be universal—prewrite, write, revise, edit. But research on writing in the disciplines suggests that the process of writing (and learning to write) is multiple, as varied as the uses of writing. What works in composition or literature may not work in some other discipline that has different uses for writing and different traditions of teaching and learning. What does seem to work is a process of writing that involves students in the activity of a discipline, whether as consumer or client of its commodified products (as in writing a quick and unrevised response to an ad) or as potential participant (gathering data from a lab as "prewriting" for writing an experimental report).

Designing assignments and courses so that students engage in a process of learning to write and writing to learn over time, allowing them to build, refine, and reflect on their composing, seems to be more effective than assigning a paper and taking it up on the due date, with nothing in between—though what comes in between will vary enormously.

These four directions in which WAC/WID research seems to point all suggest that the question in designing writing experiences that go beyond rote recall has to be: What do we want students to be able to *do* with the material of the course? Not merely, What do we want them to *know*? The motive, identity, tools, and process—the why, who, and how—are as important as the content—the what—in learning to write and writing to learn.

The Future of Research in WAC/WID

A final word on the future directions of this research: The increasingly rich literature of individual case studies is being extended to groups, sometimes using quantitative as well as naturalistic methods. It will be useful for us to know through survey research, for example, whether and how prior exposure to the activity of a discipline is associated with success in writing in its genres. It will also be useful to know whether identification with the discipline's motives (an expressed intention to take subsequent courses in the field, for example) is associated with success in writing in its genres.

Richer discipline-specific studies of writing will tease out the differences in learning to write in various disciplines, building on the work of Velez, Haas, Geisler, and others. Large-corpus quantitative discourse analysis, of the type Susan Conrad is undertaking in biology and history, will also be helpful in understanding the ways in which students' reading and writing change over time to more resemble that of professionals in a discipline.

The work already going on in qualitative studies of the relation between academic and workplace writing (such as that of the Canadian researchers) is being extended over time both forward, to young professionals expanding into wider and wider involvements (and genres), as well as backward, through longitudinal and retrospective analysis of previous writing experiences that shape students' entrance into and rejection of (and by) various professions. (Some five longitudinal studies of cohorts of undergraduate students are now in progress.)

Finally, researchers have repeatedly found that the very pro-

cess of studying writing in conjunction with faculty helps faculty to critically reflect on their practice and change that practice. It is important to continue to document the development of faculty—individually and as part of a department, an institution, and a profession—as they change over time, so that we can bring the fruits of our research to inform educational practices across disciplines and institutions. Walvoord et al.'s longitudinal study of faculty at three institutions (*In the Long Run*) is a major step in this direction.

Learning to write, then, is an extraordinarily "messy" activity, to return to Prior's term. Yet that very messiness comes out of the persuasiveness of writing in (post)modern societies. Writing mediates so many human actions, is central to so many collective human activities, that it is as diverse and messy as the (post)modern world itself. Yet in spite of the daunting task ahead for research in WAC/WID, we should not lose sight of the fact that naturalistic studies of WAC have created an entirely new object of disciplinary study: the workings of writing in society and culture. And by carefully tracing the comings and goings of students' writing in many walks of life, these studies, messy and difficult to generalize though they are, can have important implications for a wide range of human activities—not only in education but also in government, industry, business, the nonprofit sector, and advocacy groups, as well as in families, neighborhoods, and the deepest personal relationships. Through naturalistic studies of writing, we are developing expertise of real value to others: our students certainly, but also our students when they are no longer students but professionals entering and eventually transforming our culture through this immensely plastic tool called writing.

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