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STUDENT AND FACULTY RESPONSE TO WRITING TO LEARN AT THE COLLEGE LEVEL

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STUDENT AND FACULTY RESPONSE TO WRITING TO LEARN AT THE COLLEGE LEVEL

By

Tracy Anne Webb

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ABSTRACT

Student and Faculty Response to Writing to Learn at the College Level

By

Tracy Anne Webb

Proponents of writing across the curriculum, or more specifically, "writing to learn," claim that it can improve student learning, can increase involvement with the content and the class, and improve the student teacher relationship. However, most of these claims are from a teacher's point of view. Little specific attention has been paid to the response of students to writing to learn or to the effect of a teacher's attitude toward and implementation of writing to learn on his or her students' response.

To research these two problems, I observed six college classes, covering a wide range of content and levels as the teachers used writing to learn with their students. I surveyed the students in the classes three times during a semester and interviewed each faculty member and several students from each class several times on their opinions and reactions to writing to learn.

Contrary to the cautions in some of the literature, students began the semester confident that writing to learn would help them learn, and most maintained that attitude regardless of their teacher's attitude. However, the way that a teacher implemented writing to learn could effect

student response. Clear, purposeful assignments met with the greatest approval; classes in which assignments were unclear, overwhelming, or not responded to did not see as much worth in writing to learn.

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Writings Across the Curriculum: a Review of the Literature

Among current educational buzzwords, writing across the curriculum (and its cousins writing to learn and writing to think) buzz as loudly as any. Teachers claim marvelous results from having their students write: increased learning, increased attention, increased interest. That the passion of their prose is occasionally supported by reports of improved test scores lends credence to their claims. Yet, few writing across the curriculum proponents pay much specific attention to their students' attitudes toward writing across the curriculum, particularly before they begin writing. It is not unlikely that these teachers do know of what they speak; an alert, concerned teacher's perception of "how class is going" is often an apt one, particularly when the teacher is particularly concerned that class go well. However, this study is based in the notion that student attitude toward this new wave in the sea of educational techniques is also worth close observation. Furthermore, as the writing-to-learn "movement" gains momentum, it is entirely likely that not all teachers will use writing entirely voluntarily--what happens in the classroom of a skeptical teacher? In light of this concern, this study also examines the effect a teacher's attitude and practice in implementing writing to learn has on his or her

students' attitudes.

Writing Across the Curriculum's History

The roots of the writing across the curriculum movement reach as far back as the turn of the century[1]; its latest fruition emerged from the language research of the 1960's and '70's, particularly the 1966-71 Schools Council Research Project on Written Language of 11-18 year-olds directed by James Britton, and the 1971-76 Schools Council Writing Across the Curriculum Project under the direction of Nancy Martin.

The first project expressed concern that

> many teachers...entertain the belief that an English teacher has only to teach pupils 'to write' and the skill they learn will be effective in any lesson and in any kind of writing task. As a result, it seems to us, a learning process properly the responsibility of teachers of all subjects is left to the English teacher alone, and the inevitable failures are blamed upon him" (Britton et al (1975), 3).

The researchers urged, in contrast, that children learn to write by writing, that "it is misguided to expect them to 'practise' in one lesson what they will employ in

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[1]In Teaching Writing in the Content Areas: College Level (1986), Stephen Tchudi traces its beginnings to an 1892 NEA "committee of ten" which noted:

> "There can be no more appropriate moment for a brief lesson in expression than when the pupil has something which he is trying to express. If this principle is not regarded, a recitation in history or in botany for example, may easily undo all that a set exercise in English has accomplished."(9)

another"(Britton et al (1975), 3).

Among the projects findings were that the overwhelming majority (95%) of students' writing was for a teacher audience, usually to "teacher-as-examiner." 63.4% of the writing sample was transactional ("those uses of language where the writer, operating in a participant role, seeks...outcomes in the actual world: to inform or persuade" [Britton et al (1975), 146]). They found little writing in a teacher-learner-dialogue relationship and little "expressive" writing. The committee remarked:

> We were disappointed to find so little (expressive writing)...in our sample....Our disappointment arises from our belief that expressive writing, whether in participant or spectator role, may be at any stage the kind of writing best adapted to exploration and discovery (Britton et al (1975), 197).

They were dismayed that the type of writing they believed preserved a link with speech--the child's most usual linguistic mode--was so neglected.

The 1971-76 writing-across-the-curriculum project began with the similar concern that

> if the bulk of school writing is transactional...and if much of what is not transactional is marked by the teacher for its technical accuracy, rather than responded to for its content, then only a small part of the possible range of writing purposes is fostered and there is limited opportunity for development (Martin et al (1976), 28).

In response to this concern, these researchers worked with teachers of various subjects on ways to use writing and talking to promote student's learning and personal

development.

While cautioning that "wrong language policies can prevent language learning but 'right' language policies don't necessarily produce learning" (Martin et al (1976), 123), as well as that teachers' views of the learning process may have to change along with their ideas about the writing process, the project researchers suggested that students have the opportunity to write more often and in more modes throughout their years in school and across the curriculum; that a significant amount of that writing be "expressive;" and that when students were asked to write "transactionally" they be provided models and the opportunity to incorporate their personal experience. Martin et al (1976) further noted that

> For changes to go beyond the occasional individual student there must be enough teachers who share a view about learning and language to create a different set of possibilities in the school (161).

Recommendations such as these, coupled with other influences such as the Bullock report and Newsweek's "Why Can't Johnny Write" (Tchudi (1986), 13) contributed to interest in writing across the curriculum to the point where Tori Haring-Smith's 1985 A Guide to Writing Programs (an admittedly incomplete survey) includes over 100 writing-across-the-curriculum programs at the college level alone. The phrase "writing-across-the-curriculum" has become a professional catch-phrase.

Writing Across the Curriculum #1: Every-Teacher-a-Teacher-of-Writing

The range of programs, projects, courses and assignments which are grouped under the umbrella term "writing-across-the-curriculum" is diverse, often resulting in confusion on the part of teachers, students and writing across the curriculum coordinators and proponents. However, for the sake of some clarity, most approaches--and the literature concerning them--can be loosely grouped under three sub-headings:[2]

The first approach might be called "Every-Teacher-a-Teacher-of-Writing" in which the focus is on including some sort of writing in "content-area" classes (courses other than English, most specifically other than composition) and providing content-area teachers with the skills and knowledge to most effectively help students improve their writing skills. Simply put, content-area teachers aid English teachers by sharing the responsibility for improving students' writing and encourage the teaching of writing along with content or, more specifically, teaching the writing of a specific content. Proponents cite a need not only for students to write more frequently, but for them to

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[2]Obviously, all three groupings overlap considerably, and, in fact, it would probably be nearly impossible to implement a writing-across-the-curriculum program or assignment which fit solely and exclusively into only one group.

write in the manner common to a specific discipline. Teachers employ variations of the approach James Kinneavy explains as "the business of writing is taken over by the various departments" (Kinneavy (1983), 14). Kinneavy notes that in such a situation students can write more narrowly, more topic- and profession-specifically than they could for a teacher who had less knowledge of the field. The classroom can, in fact, be made to closely approximate the actual sort of situation and include types of writing students will do later in their careers when they write for other members of the profession. Kinneavy says,

> the most obvious feature of such a program is that the teacher is an expert in the field in which the writing is being done; he or she knows the subject, its vocabulary, and the methods of reasoning and major genres of the field (Kinneavy (1983), 15).

Advocates say students in such a class do not have to simplify their subject so that a lay person will remain interested or will simply be able to decipher their information. They can practice becoming members of their intended profession. They can write in depth on complex subjects, using the jargon and the conventions of the discipline and can receive feedback from the teacher and their peers which approximates the sort of response they can anticipate once immersed in their particular occupation. In such courses,

> the function of writing can be to introduce students not only to the "conceptual activities central to a given profession and to expected

> structures and styles of professional writing, but also to the social roles and purposes for writing within a given disciplinary forum. In other words, writing can function as a way of introducing students to what it means to think and act in various disciplinary forums (Herrington (1985), 334-5).

There are, however, drawbacks. Many content teachers say they are un- or under-prepared to teach writing. Gillespie (1981) conducted research in secondary schools and found that, while content faculty are receptive to writing-across-the-curriculum, "teachers have not received sufficient training to teach writing. Teachers do not have the level of competence to teach writing in the content areas that they indicate they would like to have." Healy (1983), Kinneavy (1983) and Lehr (1982) report similar misgivings and Knoblauch and Brannon (1983) express concern whether "writing is seen as an important activity in "content courses" or just a necessary inconvenience tolerated in the interest of collegiality"(465). They are concerned that many programs are little more than "grammar-across-the-curriculum" in which "writing is subordinate to content, at most enabling students to demonstrate the extent of their learning, ceremonially, as it were, in a prescribed format"(466).

Writing Across the Curriculum #2: Technical Writing

The second group of writing across the curriculum programs might be termed "technical writing" or "pre-

professional writing" or "content-specific writing." Here, English classes are adapted to deal with a certain content area, producing courses such as "Writing for Science Majors," "Pre-law Composition" or "Writing in Sociology." Students read and write in their English classes about their major field of interest. This subdivision involves English teachers aiding content-area studies by focusing their courses on a specific "non-English" (non-literary) content. Here the focus is on teaching writing and using content information to do so, part of the idea being that students will read and write better on topics they are most interested in or, as Ambrose (1986) says, "a semester long writing across the curriculum course [is] offered to freshmen at Carnegie Mellon University [as]...an alternative to the basic required freshman course...on the premise that students could improve their writing skills and learn about a specific body of knowledge ...simultaneously." Hoar says she uses student ability in one area to increase their confidence in English. She reports success in increasing students' confidence in writing papers by tapping their ability to write computer programs, telling them, "anyone who can write a computer program has many of the skills needed to write a composition...because computer programs and expository writing are based on similar cognitive principles" (93).

Ann Raimes (1980) also sees content-rich English

courses as linking the development of writing abilities with modes of communication and concepts of content areas, benefitting the teacher by providing a wider range of materials with which to teach and the student by reinforcing information from his/her content course:

> If we writing teachers choose not to derive topics from our own subject matter in English--that is, literature--we can turn for inspiration to the most common modes of discourse demanded in other disciplines: process description in biology, problem solution in the social sciences, definition in the political sciences. We can then devise topics related to those disciplines, topics that might at least introduce students to some basic terminology and concepts of the subjects (800).

Along similar lines, Eisenberg (1986) reassures English teachers that they can use familiar, comfortable approaches (historical, thematic, rhetorical model) for dealing with scientific texts. (Her reassurances may ring a little hollow to teachers who do not choose to teach writing using a "models" approach). She adds that the texts English teachers use for such a class need not be incomprehensible to the students or teacher.

> There is a world of documents in science and engineering available to the nonscientist enterprising enough to teach reading/writing. Such teaching has a satisfying reward: students arrive at the awareness that reading and writing are often overlooked but vital activities in science (212).

However, Faigley (1985) found that, despite their best intentions, English teachers ran these courses in one of two ways, and in each, there was a common shortcoming:

> In a few classes professors trained students to write like professionals in a discipline; in other classes, professors followed the liberal arts tradition of asking students to explore questions presented by the subject matter of the course. What we found interesting was that both the professional and liberal arts aims for teaching writing pose major difficulties for a writing teacher from outside the student's discipline(14).

Because the English teacher is not trained in the content-area his/her students are writing about, and because the students' knowledge may well exceed the teacher's, the student is forced to write down to the teacher. While this may provide good practice in explaining technical terms to a lay person or writing about a specialized subject to a general audience, "the student cannot assume the sophistication about the discipline that the single subject approach takes for granted"(Kinneavy (1983), 17).

Writing Across the Curriculum #3: Writing to Learn

For the third sub-group of writing across the curriculum, the term "writing-to-learn" will serve. Strategies in this group may be adapted to any course content--including English/literature courses. As Gere (1985) says,

> although writing to learn, like writing across the curriculum, emphasizes writing in all disciplines, its goal is different. Writing across the curriculum aims to improve the quality of writing, while writing to learn focuses on better thinking and learning. To be sure, students who use writing as a way of learning often produce better written products, but this is a side benefit, not the chief purpose (Gere, ed., 5).

Various teachers and researchers have defined the category writing-to-learn more or less broadly, ranging from Gere's restrictive description above, based on the purpose of an assignment, to Wotring's more inclusive definition:

> The term "writing to learn" includes any kind of writing which is done by a student in the learning process. It includes the notetaking at the presentation of the material, the written work on a homework assignment, and the written answers on test questions....Recently writing researchers have given the phrase "writing-to-learn" a more particular meaning. They have seen how students learn by writing freely and personally about the subject in their own words and using their own experience. They suggest that teachers need to offer their students many opportunities to write in their own terms in a nongraded atmosphere about a school subject (Wotring & Tierney (1981), 1).

Proponents of writing across the curriculum, particularly supporters of its "writing-to-learn" sub-group base their beliefs in the ability of writing to foster learning on cognitive research, especially that of Vygotsky (1986). This research suggests that, through language, humans both represent the world to themselves and discover meaning. It says they "think," not by manipulating experience, concrete objects, <u>things</u>, but by manipulating symbols--words, language. "Higher thought", cognition, begins with the creation of categories, the use of words.

> To be able to group objects in accordance with words existing in the language at different levels of generality is a mere beginning, but it is the essential foundation for the higher thought processes (Britton,28).

"Real" concepts (the highest level of cognition) cannot be taught directly, Vygotsky says, but must be formed, and they

cannot be formed without using and manipulating words.

> We may say, therefore, that neither the growth of the number of associations, nor the strengthening of attention, nor the accumulation of images and representations, nor determining tendencies--that none of these processes, however advanced they might be, can lead to concept formation. Real concepts are impossible without words, and thinking in concepts does not exist beyond verbal thinking. That is why the central moment in concept formation, and its generative cause, is a specific use of words as functional "tools"(Vygotsky,106).

Furthermore, writing may assist high-level, abstract thinking. In order to deal with abstract concepts, say writing-to-learn proponents, thinkers need to be able to exercise decontextualized thought, to detach their thinking from the here and now. Writing not only offers a chance to do this, it requires it. When one writes, according to Vygotsky, s/he abstracts twice: once from the sound of speech and once from the listener. The act of writing almost inevitably involves writing about the past (writing about what one did, what one read, what one thought) or the future (what one will do), for a future reading. Virtually no writing involves writing about the present (listing what is happening as it happens), for the present (for the sole purpose of listing). From this, some proponents of writing to learn conclude, one cannot help but transcend the here and now as one writes; writing cannot help but promote higher levels of thought because the act of writing probably calls upon "inner speech", which Vygotsky calls "to a large extent thinking in pure meanings"(249)

> In writing, lacking situational and expressive supports, communication must be achieved only through words and their combinations....Usually we say to ourselves what we are going to write; this is also a draft, though in thought only...this mental draft is inner speech (Vygotsky, 242).

Peter Elbow (1986) says the act of writing itself includes what he calls both "first order" (intuitive) and "second order" (logical) thinking. Writers shuttle between creating new words and ordering and arranging those words; they both abstract and synthesize. As abstraction, writing allows writers to apply concepts and thereby to understand them. As a synthesizing activity, writing allows reorder them, creating fresh, somewhat different concepts and meanings. Thus, the process of writing itself parallels the process of meaning-making:

> There exists, then, a permanent tug-of-war between two basic tendencies in cognition, namely, that of seeing every given situation as a unified whole of interacting forces and that of constituting a world of stable entities, whose properties can be known and recognized over time. Each of the two tendencies would be hopelessly one-sided without the other (Arnheim (1985), 82).

Theorists say that writing is one means of connecting new fact to prior knowledge. Choosing the words in which new information is embodied helps the writer make sense of it, make it uniquely his or hers. Martin et al (1976) explain that

> There are many ways in which we can set about making sense of new information. Every day we reconstrue our experiences as we remember, reflect, select, connect, imagine, speculate; we can also (and this is where writing perhaps can be most useful), do the more complex job of

> organizing our memories, reflections, selections, connections, imaginings and speculations. In turn these reconstructions of experience provide us with fresh insights and perceptions (68).

Theorists also say that writing may be especially helpful with the learning process because as it can follow the writer's own rhythm and pace. Janet Emig (1977) postulates the following possible correlations between the writing process and successful learning strategies:

Selected Characteristics of Successful Learning Strategies	Selected Attributes of Writing, Process and Product
1) Profits from multi-representational and integrative re-inforcement	1) Represents process uniquely multi-representational and integrative
2) Seeks self-provided feedback:	2) Represents powerful instance of self-provided feedback:
a) immediate	a) provides product uniquely available for <u>immediate</u> feed-back
b) long-term	b) provides record of evolution of thought since writing is epigenetic as process and product.
3) Is connective:	3) Provides connections:
a) makes generative conceptual groupings, synthetic and analytic	a) establishes explicit and systematic conceptual groupings through lexical, syntactic, and rhetorical devices
b) proceeds from propositions, hypotheses, and other elegant summarizers	b) represents most available means (verbal language) for economic recording of abstract formulations
4) Is active, engaged, personal-notably, self-rhythmed	4) Is active, engaged, personal-notably, self-rhythmed

Furthermore, the physical act of writing may benefit the learner, too. Robert Samples writes: "knowing, like the structure of matter, is the result of overlapping patterns of energy-encoded experience in the entire brain as well as in the entire body of each person"(in Shuman, ed (1981), 37). Writing is a decidedly more physical activity than speech or reading; perhaps there is some connection between the movements the writer makes and the "encoding" of experience.[3]

Benefits of writing to learn

Teachers who have incorporated various writing to learn strategies into their classroom practice make many and various claims concerning the benefits of writing to learn; although these teachers come from all grade levels and subject areas, their assertions can be grouped under three general headings which, in turn, will later serve as three of five guiding questions for this study.

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[3]Janet Emig (1983) cites four reasons that literal, physical writing may be crucial to the composing process: "First, the literal act of writing is activating, mobilizing....Second, the literal act of writing may be...an aesthetically necessary part of the process....Third...the literal act of writing, with its linear organization in most Western systems, may reinforce in some way the work of the left hemisphere of the brain....Fourth...writing by hand keeps the process slowed down"(111-12). It should be noted that, while each and all of these are true for <u>some</u> writers, they are equally untrue for others (the number of writers successfully using word processors casts doubt on the necessity of physically shaping aesthetically pleasing letters, for example).

Assertion #1: Writing improves learning

First, most simply, and most often, teacher-proponents of writing to learn say that writing improves their students' learning. Mayher et al (1983), for example, say that writing in response to reading can "increase interpretative and synthesizing skills" (110); Martin et al (1976) reiterate the learning benefits of a student putting material into his or her own words as do Knoblauch and Brannon (1983), who comment that, because it allows more freedom to explore from a personal vantage point, "a journal or notebook (allows) greater opportunity to learn without the anxiety of anticipating formal expectations that are made to seem more important than the search for meaning" (470). Frank J. Cunningham (1985), who has his college philosophy students write, says even with traditional assignments such as term papers,

> the demand to produce a text forces students to organize their thoughts, to attempt some coherent justification for their position, to consider, however superficially, alternative positions and arguments;"

he goes on to report even greater success with shorter, less formal writings (166). Brostoff and Beyer (1980) integrated informal writing into college-level history classes and found that,

> there was marked improvement in students' abilities to conceptualize, analyze, and structure information, and that development of these thinking and writing competencies helped the students gain sophisticated insights into the subject matter (50);

Crowe and Youga (1986), too mention writing's ability to increase student sophistication, this time in an economics class, the writing usually explanations of economics concepts. Sidney Schuster (1988) uses informal, often definition or explanation-of-concepts writing in his physics classes to "aid students in concept assimilation and in strengthening logical thinking" and says writing helps, in part, because "words seem to have more lasting significance than the symbols in equations"(3).

Jensen suggests that writing increases the comprehension and retention of reading material, whereas Evans found writing explanations of math problems and definitions increased her students' comprehension and retention of math. Gerald Burton's (1987) doctoral research traced the effects of essay writing on introductory level college algebra students. Measuring achievement by a twenty-question, multiple-choice test, Burton found

> that essay writing in college mathematics classes did not improve mathematics achievement, but suggested a highly positive effect on retention....The treatment is recommended for mathematics teachers because of the possible effect on retention and the increased interest level of the students (Burton).

Also in mathematics, Wolff (1986) studied the effect of written verbalization on mathematical skills and found writing most effective for students who were already high achievers; Perez (1985) investigated the effects of having students write and solve their own word problems on the

problem-solving performance of remedial algebra students at the college level. He concluded that "if a student has been able to write a word problem then there is a high probability that he or she would be able to solve a similar problem." As a group, the teachers collected in Gere's Roots in the Sawdust (1985) praise writing to learn's ability to improve students' learning of German, social studies, history, science, math and art by helping them organize their ideas, review them, and make them more personal.

Finally, and refreshingly, whereas most of the above-mentioned teachers' claims of writing's ability to improve learning often seem re-statements of the earlier claims of writing theorists, and they do not usually refer specifically to their students' experiences or reactions to writing, Perez (1985) used attitude tests to document improving student attitude as well as problem-solving ability. Wotring's (1981) conclusions carry a certain weight because she writes from her own experiences as a member of a chemistry class which used writing to learn.

> I found that writing eliminated all my need to study the night before a test. I knew and understood everything already. I didn't need to memorize anything or cram anything into my head; and, because I didn't have any information precariously and hurriedly jammed into my head, I knew that I couldn't forget it in the middle of the test. I knew I had it all in there in order so that it made sense, and I could call upon it and find it when I needed it. It was all neatly filed, not just thrown in. I was confident in this knowledge and in my knowledge. All the

> pressure I'd always associated with tests vanished (35).

Assertion #2: Writing increases student involvement

The second general assertion is closely related to the first. It is generally held that a student who is more involved with the subject, who has a personal interest in learning course material, will be a more able learner. Writing to learn, say its proponents, can increase student involvement with course material and in the course itself. Some claims of this sort are rather pragmatic. Tierney says that writing a summary of the teacher's presentation can "help keep the class alert and can provide a break in routine" (Wotring and Tierney (1981), 61) and Fulwiler (1985) says of journals, "it is hard to daydream, doze off, or fidget while we write--unless we write about it"(188). More abstractly, Fulwiler also says that journal writing individualizes instruction, generates ideas, and can provide a student with greater self knowledge which may, in turn, motivate students to become more interested in content information because they can relate it to themselves.

> Without an understanding of who we are, we are not likely to understand fully why we study biology rather than forestry, literature rather than philosophy. In the end, all knowledge is related; the journal helps clarify the relationships (196).

Cadwallader and Scarboro (1982) make a similarly broad claim for writing's ability to involve students in sociology:

> Better student writing leads the student to a closer, more personal involvement with the discipline through more active involvement with

> its ideas, concepts, and information. It leads to clearer understanding, to an immediate feel for what is being presented. As students write about and become familiar with what they hear they move, almost despite themselves, to a more exacting appreciation of the sociological imagination (362).

Priscilla Zimmerman (in Gere, 1985) says writing about art helps her students increase their sensitivity and awareness; Ray Marik (also in Gere, 1985) has found that a variety of writing techniques including journals, "treeing," and role playing increase generates more active participation from his special education history students.

Other teachers emphasize "writing's capacity to place the learner at the center of her own learning"(Mayher et al, 78) and say that it can make students more responsible for their own learning as well as allow them learn to create their own learning situations.

> Students improve as thinkers in small, undetectable increments of change, brought about by the level of challenges they face. It is only when they are put into situations where better thinking is called for that they will be challenged to produce it. Such situations, of one kind or another, at whatever degree of difficulty, should be the aim of each course that students take. But lacking such consistency, students should at least know that they can create such situation for themselves, by looking for questions or problems within the material they encounter. This is a practice that is encouraged by writing, if writing is understood to be a means of clarifying problems and of inquiring into potential solutions (Gage, 23).

Concerning the claim of increased student involvement, as concerning the first, because it is often based on the writer's recollection and impression, reported benefits may

seem broad and weakly supported. There are some welcome exceptions: Marik, for example, carefully analyzes examples of student writings to support his claims.

Assertion #3: Writing improves communication

Finally, in addition to increasing a student's involvement with the class, teachers who use writing to learn techniques say that they can improve the student-teacher communication, primarily by allowing the teacher access to the student's thought, primarily through reading student journals, "admit slips" or other informal writings.

> When students...have the opportunity to jot down their understandings of course content, teachers have an effective means of gauging what learning is taking place....With such knowledge of how the students' learning is progressing, the teacher can adjust and react accordingly (Mayher et al (1983), 25).

Writing can also open lines of communication between students, building a sense of community in the classroom. Peterson (in Gere, 1985) uses journals in her German class which students share with each other. This, she says, provides an opportunity for them to make mistakes without looking dumb, as well as providing them a "realistic" chance to communicate in the language. More broadly, Martin et al (1976) say that personal writing in a trusting atmosphere can serve a purpose similar to that of sharing anecdotes with friends--"[validating] our own experience and [confirming] our sense of identity and mattering to other people"(98).

Chapter Two

"It Struck Me as Kind of Weird that Someone Would Run an Experiment on This": Methodology

Rationale:

Teachers who have worked with writing to learn techniques claim that writing to learn satisfies a number of needs: it fosters a rich and productive teacher/student relationship; it increases student and teacher involvement and satisfaction with the learning process. As a learning tool, it produces outcomes that are worth the energy and time invested, both in "learning" in general and in personal involvement. However, although there have been both qualitative and quantitative studies of the effects of writing to learn on students' "learning" and a number of teacher-testimonies as to its merits, these fulfill only half the Association of American Colleges' Task Group on General Education's recommended formula for assessment[4]. Astin (1985) says,

> Students' satisfaction with the institution's program is one of the most important indications of an institution's effectiveness. Students should be asked not only about their overall

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[4] "The art of assessment is far from perfect, but it is a feasible art and can stimulate curiosity, foster self consciousness and strengthen education, particularly when it involves faculty and students who have a stake in what is being assessed" (Katz, chair (1988), 52, emphasis mine)

> satisfaction but also about their satisfaction with more specific matters: the quality of teaching, advising, curriculum, facilities, extracurricular activities and various student services (170).[5]

In the matter of writing to learn, other than in an informal gathering of response by individual teachers, student attitude has been largely overlooked.[6]

In addition to a driving concern with the potentialities of writing to improve students' learning, the authors of Writing and Learning Across the Curriculum also point out the importance of the inter-relationship of student and teacher self-view to the learning process. Both the student's image of himself as a student, the teacher's perception of himself as teacher, and each party's perception of their relationship as teacher and student shape the sort of relationship that actually will be formed and the sort of learning that will take place. To put it simply, the teacher's and student's perceptions of what is going on in the classroom and in themselves shape what

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[5] One of the students interviewed for this study said the same thing, a little more prosaically: "The students are the ones that are writing. They should have the opinion, someone who's in the class and sees it day to day" (Tiller, interview #1).

[6] Studies which do deal with students' response to writing to learn include Mayher et al's (1983) brief notation of students' comments about writing to learn in their writing logs, Herrington's (1985) citation of positive student response to writing to learn on their course evaluations, and dissertations by Holliday (1989), Rose (1989), Reynolds (1987), and Chamberlin (1988) in which students were surveyed and/or interviewed about their response to writing to learn.

actually does go on in the classroom, the student, and the teacher.

Despite the importance of the teacher/student relationship and perception of each other outlined in Writing and Learning Across the Curriculum, the resulting relationship between teacher attitude and student attitude toward writing to learn has also not been specifically examined.[7]

This lack of specific attention to student reaction to writing to learn is the guiding concern of this study. More specifically, I hoped to learn whether the claims made for writing to learn (that it improves learning, increases student involvement and improves communication) were as valid for students as they were for the teachers who made them. Furthermore, because it is not unlikely that teachers who are not as enthusiastic about writing to learn as those mentioned above may also use writing to learn in their classrooms, I hoped to learn what sort of relationship existed between a teacher's attitude toward writing to learn, his or her "practice" or actions in implementing writing in his or her classroom, and the students' response to writing to learn. In short, do students agree that

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[7]One exception to this lack of exploration of the relationship between teacher and student attitude toward writing to learn is Johnstone's (1989) dissertation, in which she specifically examined the "interacting network of relationships" between writers, the agenda and conduct of the class, the teacher, and assignments.

writing to learn is effective and what effect does their teacher have on their response?

Because of this focus, I eschewed pre- and post-test empirical approaches. Those might indicate whether students were "learning" but would not address the questions of student response and faculty influence. A "control group" study such as Tierney's (in Wotring and Tierney, 1981) would have been interesting, but would have been nearly impossible to accomplish at a small school and, again, would not have been broad enough to address the larger question of faculty influence on student response. Instead, I chose an approach similar to that of the Schools Council Project outlined by Martin (1976). I observed and "analyzed teachers' innovations," interviewed students on their responses to writing to learn, and interviewed teachers on their attitudes and responses to writing to learn as they used it in their classrooms. To provide a broad "setting" for the student interviews, I also surveyed all students in each class in the study on their responses to writing to learn; these surveys, however, are "background noise," generally in harmony with, but not--to mix the metaphor--as specifically illuminating as the interviews.

Methodology:

Study Group: I studied six classes over the course of one semester at Adrian College, a small (student body about 1200), private, liberal arts college in southern Michigan.

Class size ranged from seven to thirty three. I chose classes for as broad a range of subjects, student level, and professor familiarity with writing to learn as possible. The specific classes included:

- Assembly Language Programming. A 300 level computer science course, initial survey size 12, final survey size 12. Students were juniors and seniors, all computer science majors. Taught by Willard Craft, professor of chemistry and computer science, chairperson of the chemistry department.
- Invertebrate Zoology. A 100 level biology class, initial survey size 10, final survey size 10. Students were sophomores through seniors, all biology majors. Taught by Robert Husband, professor of biology.
- Seminar: William Faulkner. A 400 level English literature class, initial survey size 14, final survey size 7. Students were juniors and seniors, all English majors. Taught by Richard Koch, professor of English.
- East Asian Civilization II. A 100 level history class, initial survey size 29, final survey size 21. Students were freshmen through seniors, most not history majors. Taught by Michael McGrath, professor of history.
- Music Appreciation. A 100 level music class, initial survey size 33, final survey size 29. Students were freshmen through seniors, most not music majors. Taught by Esther Rothenbush, instructor of music.
- Children's Literature. A 300 level English class

specifically for education majors, initial survey size 30, final survey size 29. Students were freshmen through seniors, all elementary education majors. Taught by Betty Skillman, professor of education.

With the exception of Esther Rothenbush, who volunteered and interest in writing to learn before the study began, I approached the professors and asked them to participate in a study I was doing on writing across the curriculum. I tried to select as wide a range of faculty as possible, based on subject, years they had been teaching, teaching style and experience with writing.

For the purposes of this study, the term "writing-to-learn was specifically chosen because the focus of the study was on whether writing would be perceived as improving learning, not writing, and in an effort to avoid the potential for confusion the umbrella term "writing across the curriculum" would engender. In order to allow participating professors as much autonomy as possible, the broad definition of writing to learn was adopted--that virtually any act of writing can and may facilitate learning. I met with each professor before the beginning of the semester, gave him or her a handout on writing to learn (see appendix A), explained how writing to learn was distinct from other types of writing across the curriculum, discussed their perception of the class, their anticipated needs, and suggested writing techniques that might best meet

those needs and the objectives of the class. The professors were ultimately in complete control of the types of writings they chose to use. Actual sorts of writing used varied widely from class to class and within single classes and are listed in the subsequent chapters with the discussion of each individual class.

The professors' experience with writing and writing to learn ranged widely. Richard Koch is a writing teacher who had previously used writing to learn extensively; Betty Skillman had used some writing to learn techniques and was familiar with the uses and benefits of writing, but had not previously used much informal writing in this particular class. Esther Rothenbush and Michael McGrath were both aware of the writing across the curriculum/writing to learn movement and were eager to incorporate more writing into their classes in a planned way. Bob Husband writes a good deal himself, but seldom required writing of his students; Willard Craft was somewhat skeptical of the writing across the curriculum movement and hoped to learn more about it by participating in the study. He, too, had seldom required writing of his students.

Professor interview methodology: Each professor was interviewed every other week for a minimum of six interviews each (some choose to meet more often). The initial meeting--actually a pre-study, informational meeting described

above--involved finding out very basic information about the class. At this time I gave each participant a written explanation of writing to learn (see appendix A) and we discussed the possible uses s/he might make of writing. To help shape this discussion, each teacher was asked: 1) What is your class like (difficult, easy), what is the content, what are your goals and objectives? 2) What will the average student in the class be like, how prepared will he or she be? 3) What does a student need to know/do/learn in order to succeed in this class? 4) What kinds of writing to you plan to use? 5) What kinds of writing are you interested in? Most teachers also indicated why they were interested in participating in this study.

In subsequent interviews, conducted after classes started, I elicited what the teacher had done with writing and his or her reaction to it, any concerns or questions, and the teacher's perception of the class and how it was "going." In nearly every case, the participating teacher came to the interview eager to talk and full of information; generally the above topics were covered without my having to pose questions. After classes started, I also concentrated on observing, giving advice on using and handling writing only when it was actively sought so that it would be the professor and his/her individual, relatively uninfluenced use of writing to which students reacted.

In the final interview each professor answered the same

six questions: 1) When they agreed to participate in the study, what did they hope writing to learn would accomplish? 2) How successful was the undertaking toward meeting those goals? 3) Did their attitude toward using writing as a means of learning change in any way over the course of the semester? 4) What did they perceive the attitude of their students toward writing to learn to be? 5) What did they see as the greatest advantage of advantages of writing to learn? 6) What were its greatest disadvantage or disadvantages? They were also invited to add any other comments. I collected 103 pages of teacher-interviews, then selected from them remarks concerning ways in which, they thought, writing to learn was or wasn't meeting their goals as well as concerns they might have about it and their perception of their students' responses to writing to learn. The responses of each professor will be discussed in the subsequent chapter concerning his or her class.

Student interview methodology:

In addition to professors, two to five students from each class were interviewed as well; all were volunteers. They were often, but not always, perceived by themselves or the professor as among the best students in the class. Several, but not all, chose to participate in the study because of a pre-existing interest in writing (some notable exceptions were one student who said he was dyslexic and

described writing as frustrating and difficult and one who said "I don't like writing, I don't write very well"). Each student was interviewed approximately every three weeks, for a minimum of four interviews each (like the professors, some chose to meet more often).

In order to "identify" the student, that is, to get a sense of what sort of student s/he was and his/her general attitude toward school and the class in question, and to give him or her something to respond to, rather than having to talk without prompts, at the first interview each student was asked: 1) What is class like, what do you think of the class so far? 2) What sorts of writing have you done so far and what do you think of them? 3) How do you learn best? 4) What kind of student are you?

At the final interview each student was asked more summary questions: 1) What do you think the professor hoped to accomplish by using writing to learn? 2)How successful was s/he at meeting these goals? 3) What do you think your professor's attitude was toward using writing to learn? (It was explained to them that participating professors had been solicited, their attitude could in fact range from very positive to very negative). 4) Did your attitude toward writing to learn change in any way over the course of the semester? 5) What was the greatest advantage or advantages of writing to learn? 6) What was the greatest disadvantage or disadvantages of using writing to learn? 7) Compare

writing with other means of learning as far as effectiveness, and as far as how enjoyable/painful it is. I also invited student interviewees to comment on their survey responses.

As with the faculty, at the intervening interviews, students were asked more general questions about how class was going and what sorts of writing they had done, then their opinions of the worth of that writing were elicited. Again, as with the case of the faculty, I hoped to "meddle" and influence their reactions as little as possible and assumed that the comments they volunteered would concern matters of the most interest to them. Students were also invited to comment on the survey questions.

I collected on audio tape a total of 16 hours of student comments, transcribed them into 72 pages of written remarks, then selected information that addressed my original concern with whether writing to learned seemed to students to be worth the time it took (and the pertaining sub-questions: did it improve learning; increase student involvement; effect the student/teacher relationship, their attitudes toward writing in general or their self image?) as well as any comments concerning their perception of their teachers' attitudes toward and practices with writing to learn and any other remarks about other aspects of writing to learn that had not previously occurred to me, particularly recommendations they might have for teachers

planning to use writing to learn in their classes.

Student interview results:

The responses of interviewed students were more specific and more illuminating than the survey results. Whereas the survey results set a general background of attitude, the interviews fill in the gaps, providing some indications as to why students responded as they did. The comments of members of each class will be discussed in the following chapters; general responses of all interviewed students will be discussed in the conclusion.

Classroom observations: To determine the extent and manner in which teachers put writing to learn into practice, I observed each class approximately once every two weeks and collected samples of written assignments and student writing (available on written request).

Surveys: To measure overall response and provide a background for the interview statements, I surveyed each class three times: once at the beginning of the term before any material had been covered or any writing had been done. Once in the middle of the semester (seven weeks later) when students were in the midst of both material and writing. At the end of the semester (before finals week, seven weeks later) when virtually all course work and writing were

completed. The surveys asked students to indicate the extent to which they agreed or disagreed with statements about writing to learn. These statements can be grouped into six categories, three of which are based on the categories of claims made by proponents of writing to learn discussed in chapter one. A fourth category grew from the large number of testimonials by teachers saying that writing to learn was time consuming for them, but worthwhile. Would this prove true for students, too? The final category of statements sought to learn whether students doing writing would see worth in writing itself, what effect the act of writing itself would have on their attitude and practice of writing itself. In addition, two questions asked students to "place" themselves as learners and writers. Because this study was based on an interest in students' attitude toward writing to learn, the survey asked students' self-perceptions as learners or writers rather than for some external measurement such as grade point average or SAT scores.

The survey was developed with the aid of Dr. Henry Cetola, professor of psychiatry at Adrian College, who has developed several in-house survey instruments for the college. The major assumptions about writing to learn (above) were identified and re-stated into statements which could be agreed or disagreed with. Most key ideas were worked into several statements, worded differently, so that

a students' response could be caught more than once. Some questions were worded "negatively" so that students filling out the survey would not be able to quickly "run down" the answers without reading the question carefully. The survey was then piloted to several faculty and students, then re-worked for greater clarity.

All student surveys were anonymous. The first survey was administered before course work actually began; hence, the first survey's results reflect the students' predictions of what writing to learn would and would not do. Before taking the first survey, they were told what the term "writing-to-learn" would refer to in the context of their specific class. Each survey sheet also carried a written explanation of writing-to-learn (see appendix B) and some professors included their own explanation of writing-to-learn on their syllabi. The second survey was administered just past the mid-point of the semester (approximately 7 or 8 weeks into the semester); the final survey, was given as near the end of the semester as possible, but before finals week. Both subsequent surveys contained the same written reminder of what writing-to-learn was, this time in the specific context of their class, and students were invited to make inquiries about specific assignments.

Survey Results: general response

The primary focus of this study is on the interaction

of teacher and student and on students' reactions to writing to learn; these are most fully and clearly presented in the case studies in the following chapters and pertinent survey results will be discussed then. As a backdrop to those case studies, however, the responses of the survey population as a whole are presented on the next page:

Table 1: All-student response

	Total: Survey 1=128, Survey 2=110, Survey 3=108	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3
		Disagree strongly			Disagree moderately			Neither agree nor disagree			Agree moderately			Agree strongly		
Were the results of writing to learn worth the time invested?	Writing to learn keeps the course from covering as much material as possible	22	33	23	41	45	42	40	25	33	23	5	9	2	2	1
	Writing to learn takes time away from learning	25	27	15	49	57	53	28	22	31	4	2	9	2	3	0
	Because of writing to learn, I need to spend more time studying	9	10	9	41	41	44	42	35	30	33	21	22	3	3	3
	Writing to learn takes time away from other ways of studying	12	16	12	59	47	40	45	31	26	9	13	10	3	2	0
	This course requires too much writing	8	13	8	36	40	40	52	27	31	29	20	20	5	10	3
	This course requires too little writing	18	24	19	49	50	49	59	31	31	2	4	9	1	0	0
Did writing to learn improve learning?	Writing to learn helps me learn	1	1	2	2	2	8	13	14	18	84	70	63	28	23	17
	Because of writing to learn I need to "study" less	5	4	4	20	25	29	38	37	37	55	39	31	10	4	6
	Writing to learn makes course information easier to remember	2	1	24	6	8	13	13	14	25	85	68	51	24	19	12
	Writing to learn makes course information harder to understand	33	24	18	77	60	67	16	24	21	2	1	2	0	1	0
Did writing to learn increase student involvement?	Writing to learn does not make the course information more personally relevant	15	17	10	56	45	40	36	27	33	19	17	22	2	4	3
	Writing to learn makes the course information more interesting	6	5	5	15	14	12	45	37	38	53	45	44	11	9	9
	Writing to learn helps me create and develop my own ideas	1	0	0	10	9	14	14	22	26	78	60	56	24	18	12
	Writing to learn does not show me that my ideas have merit	11	12	6	53	52	50	39	35	42	23	10	9	2	0	1
The effect of writing to learn on the student/teacher relationship:	I feel the professor knows more about me as a person because of writing to learn	2	3	2	11	15	11	38	30	36	62	51	48	15	10	11
	I feel I do not know the professor as a person better because of his/her reading my writing	9	8	7	33	31	22	65	35	49	21	32	23	1	3	3
The effect of writing to learn on the student's attitude toward writing in general	I will not do writing to learn on my own	19	15	9	46	35	45	32	15	22	27	35	30	6	10	2
	When I have to "figure things out," writing will	help a lot: 37	26	23	help somewhat: 75	66	55	neither help nor hinder: 13	15	20	hinder somewhat: 2	2	1	hinder a lot: 1	0	1
	When you have to do a writing assignment do you feel	very apprehensive: 13	6	7	somewhat apprehensive: 49	45	43	neither apprehensive nor confident: 19	13	16	somewhat confident: 18	36	34	very confident: 9	13	9
	Approximately how much non-assigned writing do you do per week?	none: 18	19	20	1-3 pages: 52	62	53	4-6 pages: 27	16	23	7-9 pages: 4	5	5	10+ pages: 5	6	6
Students' self-image as learner and writer	Compared to other students you know, as a learner, would you say you are:	a better learner than most: 21	23	21	a better learner than some: 53	47	44	about average: 18	17	16	a worse learner than some: 2	1	5	a worse learner than most: 0	0	0
	Compared to other students writing, as a writer, would you say you are:	more effective than most: 21	12	14	more effective than some: 41	45	50	about average: 48	41	32	less effective than some: 16	9	10	less effective than most: 1	2	3

1) Would the results of writing to learn be worth the time invested? Questions 1, 4, 6, 9, 12 and 13 on the survey addressed this concern.

About twice as many students disagreed writing would keep the course from covering as much material as possible as marked neither agree nor disagree; still fewer agreed. The second survey saw a slight increase in disagreement which on survey three returned to original levels.

The majority of students also disagreed that writing would take time away from learning--about three-quarters on the first two surveys, dropping to about two-thirds on the last.

Question 6 asked student response to "because of writing to learn I need to spend more time studying." Overall, between roughly half of the students disagreed with this statement. Over the course of the semester, there was a slight, gradual increase in disagreement and a movement from agreement to "neither" on survey 2, followed by a movement from "neither" to disagreement on survey 3.

Question 9, "writing to learn takes time away from better ways of studying," saw a similar slight increase in disagreement (from about half to about two thirds) and overall decrease in the percentage of students marking "neither."

Roughly half of all students surveyed initially disagreed that there was too little writing; by survey three

this had increased to about two-thirds. Few students (about 10%) agreed.

Despite some slight and diminishing concern that the course required too much writing--and certainly did not require too little--students indicated that the time invested in writing to learn was not too great for the results. They did not perceive it as lessening the amount of material the course could cover and, while there was some drop in disagreement with "writing to learn will take time from learning," there was increase in disagreement with both "because of writing to learn I will need to spend more time studying" and "writing to learn will take time from better ways of studying."

2) Questions 3, 5, 7 and 8 sought student opinion on whether writing to learn would actually improve their learning.

On survey 1, roughly 85% of all students agreed with that writing to learn would help them learn. Over the course of the semester, agreement dropped by about 10%.

Question 5, "because of writing to learn I need to 'cram' less" sought to substantiate this claim made by some proponents of writing to learn. Initially approximately half the respondents agreed, one-third marked neither agree nor disagree and less than one-fifth disagreed. Over the course of the semester, agreement dropped and those marking "neither" and "disagree" increased; on the last survey

results were nearly evenly divided.

Question 7 also sought student attitude toward a claim that is common and has been quantified: that writing to learn improves retention[8] A majority of respondents predicted this would be true on survey 1 (about 85%); this gradually decreased to more than two-thirds while about one fifth marked "neither agree nor disagree" and one tenth "disagree" on survey three. The greatest shift from agreement occurred between the second and third survey.

A similar high percentage of respondents predicted writing to learn would not make information harder to understand. After the first survey, there was a slight shift to "neither," and a small shift to "agree." Overall, however, disagreement with the statement remained high (about 80% survey 3) and agreement low (less than 5%).

Students expected and usually found that writing to learn would improve their learning. While writing to learn did not decidedly decrease the need to "cram," it should be noted that survey 3 was administered during the high-anxiety period before finals; post-finals results may have been different. Furthermore, while writing to learn did not quite meet high initial expectations in the areas of improving retention, making course information easier to remember and understand, and improving learning in general, agreement in the latter areas remained over two-thirds of

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[8]see Burton (1987), Copeland (1985) or Wolff (1986).

respondents.

Questions 10, 11, 14 and 15 addressed student involvement with the course material, based on the assumption that the more interested and involved students are and the more relevant the material seems to them, the better they will learn.

Question 10 stated "writing to learn does not make the course information more personally relevant." Responses to this statement did not vary greatly from survey to survey. About half the students disagreed with the statement, about one third neither agreed nor disagreed and one-fifth agreed.

Responses also did not change greatly to question 11, "writing to learn makes the course information more interesting," with somewhat less than half agreeing, about one-third neither agreeing nor disagreeing and less than one-fifth disagreeing.

Question 14 also dealt with student involvement: would they feel that writing to learn would allow them to develop their own ideas? To the statement "writing to learn helps me create and develop my own ideas," over three-fourths initially agreed; on the third survey about two-thirds agreed while the great majority of remaining respondents marked "neither agree nor disagree."

Roughly half the respondents disagreed that writing to learn would not show them their ideas had merit; this disagreement increased slightly after the first survey.

Overall, students indicated writing to learn increased their involvement with the topic, and, while they showed tentative agreement, this agreement remained consistent over the course of the semester.

Proponents of writing to learn say it can facilitate two-way interchange of information and feedback between students and teachers and thus improve the student-teacher relationship. Questions 21 and 22 dealt with this issue. Slightly more than half of respondents initially agreed that "the professor knows more about me because of writing to learn;" about one-third neither agreed nor disagreed. As the semester proceeded, agreement decreased slightly. On the other hand, about half the surveyed students initially marked "neither agree nor disagree" in response to "I do not know the professor better because of his/her reading my writing." Again, agreement that writing to learn would improve teacher-student awareness decreased very slightly; most students remained undecided by survey 3.

Students were neutral about whether writing improved the student-teacher relationship. They were somewhat more inclined to expect the professor would know them better than that they would know the professor better, but did not have as high expectations of writing to learn in this area as in most othera. They were, as in most cases, good predictors of their final opinion.

Finally, the survey sought determine the effect, if

any, of writing to learn on students' attitudes and practices toward writing in general. Question 2, "I would not do writing to learn on my own," was specifically concerned with whether having done writing to learn for a class would encourage students to write-to-learn when not required to do so. Throughout the semester, about half the surveyed students disagreed with that statement.

Students initially expected writing would help them figure things out, with more than 90% indicating that writing would help, about one-third saying it would help "a lot". This dropped over the course of the semester to about three quarters; however, very few students said writing hindered them; most of those that no longer said it helped indicated that writing "neither helped nor hindered."

Question 19 sought to measure students' writing anxiety, asking how apprehensive or confident they felt when they "have to do a writing assignment (especially longer assignments like papers and essays)". This question received very little change in attitude over the course of the semester; very few students indicated that they were neither apprehensive nor confident, slightly more students felt apprehensive than confident.

Question 20 asked students how much non-assigned writing they did. Again, results remained quite consistent over the course of the semester: few (less than one-tenth) wrote more than seven pages a week, about one-fifth wrote 4-

6 pages and most (about 70%) did 0-3 pages of non-assigned writing per week.

In general, writing to learn had little or no effect on students attitudes and practices toward writing. Few students wrote on their own and they did not begin to do so; students remained slightly more apprehensive than confident when faced with formal writing and did not change their attitudes, yet they expected writing would help them learn and usually, although not always, found this to be the case. Most indicated that they would consider doing writing to learn on their own.

Chapter Three

"It's Been an Interesting Thing for Me to Look at": Willard Craft's Assembly Language Programming Class

I studied six classes, encompassing as wide a range as possible of subjects, levels and teacher-experience with writing and writing to learn. Each of the next six chapters will be devoted to one class, particularly the response of students in that class to writing to learn, and the relationship between its teacher's attitude toward and practice of writing to learn and the students' reactions.

Craft's class was Assembly Language Programming, a 300 level computer science course, initial survey size 12, final survey size 12. Students were juniors and seniors, all computer science majors. He assigned the following writings:

1 Program plans: a written outline for every computer program.

2 Admit slips of the following specific kind:

   A "What are you comfortable and uncomfortable with?" in-class writings: students handed in to the professor a sentence or two each on concepts they thought they did and did not feel comfortable using.

   B "Why did the program fail" in-class writing:

students explained why most of them were not successful in writing one particular program.

3 Final project plans: a summary of what they planned to do for their final programming project.

All these assignments would meet even the most stringent definition of writing to learn. They are informal, expressive writings that organize or examine knowledge.

Teacher's attitude toward writing to learn

Dr. Craft began the semester with some reservations about writing to learn and interested in learning more about it. Furthermore, he began the project with developed opinions about it.

> I guess the thing that bothers me about writing across the curriculum is that it never seems to get down to having the students write well, and it's not a communication technique, it's a learning technique (interview #1).

He was concerned about drawbacks to using writing to learn--that the students would perceive it as busy work, that in a course such as his they might not need writing to facilitate problem solving

> The blackboard, for my purposes, is a better tool. When you write bigger it stands out better. I can watch ten [students] at once, watch for commonalities, see the mistakes they're making. From my point of view, that's a very powerful technique (interview #1).

Nevertheless, he was frustrated with the performance and attitude of recent classes and willing to try something new.

Recent students, Craft said, seemed less motivated than in previous years. They didn't start assignments as early as they should, they were too impatient, wanting things to work the first time and he felt a large part of his time was taken simply teaching them patience. He suspected that "the courses that they're taking [aren't] making them think enough." In his class they would need to be able

> to organize, to read a problem, understand a problem, decide how they would solve it, on the basis of how they would solve it, how they would have the computer solve it, and then teach the computer to solve it. Those are the steps. I think a lot of students--I'm not sure many students get to the point where they understand what the problem is (interview #1).

Craft was willing to try something new that might make a difference despite his strong (and strongly expressed) reservations about writing to learn. These concerns were basically two-fold. Whereas he acknowledged that

> I think that the process of writing is...you ski better the more you ski. I think that's sort of similar in terms of reading a lot. Reading a lot's important in terms of being able to write well, but that's not all there is to it. You've got to actually write and write and write and throw a lot of stuff away (interview #5)

he was concerned with what he perceived as the English department's perception that writing anything would improve writing and said he was most interested in students being able to use writing effectively to show him that they <u>had</u> learned. He was especially troubled that

> [The English department's] goals are totally different from the rest of the campus's goals....Sometimes when I hear the people in the

> English department, they have a tendency to denigrate the idea of writing to communicate....They say that they don't need to spell, they don't need to punctuate at all. They do need to spell and when they leave here that's going to have an awful lot to do with people's perception, so from a professional point of view, that have to be able to communicate when they leave here (interview #5).

Craft wanted to see more emphasis on writing correctly, writing to communicate and less emphasis on writing as a learning tool. He acknowledged that writing could be an effective tool for learning, that it would, for example, help students become more active learners, but cautioned that it worked because it was activating a less-often used learning "pathway" and there were many more pathways than listening, cramming and writing.

> I think writing to learn is a good technique, but it's just one and I think chemists are much broader in their learning techniques than most areas. For example, we smell to learn and we touch to learn, and we listen to learn. We use lots and lots of different learning styles and learning techniques here, and I think that, from my point of view, focussing too much on writing to learn, to me, it's too narrow. It's over-focussing on just one technique and it's as bad as using just hearing to learn. There needs to be a lot of broader basis (interview #5).

Perhaps because of this concern with an over-emphasis on writing to learn, through much of the semester Dr. Craft seemed reluctant to characterize writing to learn as "helping" or "working." This class went much better than any in recent memory--students were bright, active, interested and involved. When asked about this, Craft said, "I don't necessarily attribute it to the writing exercises,

but something's clicking this time, I don't know what" (interview #4). Writings he received were characterized as "interesting," or "amusing," and the use of writing itself was "reasonable."

Despite his doubts about writing to learn, Craft was very open to trying writing to learn techniques with his class. He assigned "true" writing to learn exercises: short, five-minute in-class writings on what they did or didn't understand, written program plans and explanations of what their final projects would be. He used writing to "get inside their heads," to nudge them toward planning or completing a project. He was very open to hearing--and trying--suggestions not only for activities that would improve their learning of the content-material, but that would help sustain the morale of the class. "I want to have my class sustain. They're head and shoulders above where I expected them to be. I want them to feel good about themselves, sustain that" (interview #3). He also experimented with writing in classes other than the studied class.

> I did have my Freshman research lab write very short "what do you hope to get from this?" It was interesting. I'm not sure how applicable it is, but it was interesting. And I'm going to come back to that a couple times during the semester (interview #2).

Teacher's response to writing to learn

On the whole, he summed up his experience with writing

to learn as a mixed one. It had its value, but did not relieve him of his original concerns about the need for writing to communicate and over-emphasis of just one learning technique.

> It's been an interesting thing for me to look at. On the whole I feel good about it, and will probably use some of these techniques in the future; I may expand them into other classes. But it also has made me believe some of the English department's ideas less and maybe that's unfortunate, but that's a fact (interview #5).

He saw some other problems as well, particularly with the program plans. He was surprised that his students didn't question why he required writing of them and worried that some of the writings, especially those in which they indicated what concepts or operations they were comfortable and uncomfortable with might have given them a false sense of security.

> I think it gave them false impressions. They think they understood and they didn't....They figure, 'I'm comfortable with this...I guess' and then not go back to it (interview #6).

Most troublesome, though, were the program plans. Craft assigned written plans of what a computer program would contain, hoping to "force them into the design stage because, essentially, your program has to be right before you start or you won't get it right." They took time to read, and students were aware of when they were not read, but it was a "reasonable" workload for the professor. Although they did force the students to think about their programs earlier, giving them more time to deal with

unforseen difficulties, students began "sloughing off" on them as the semester progressed when planning was actually more important.

> I think that, with the simple programs [program plans] are less necessary, so [the students] concluded that they're not necessary. But then on this particular [assignment] they got bit rather badly. Maybe asking them to write too early is a mistake, I don't know. But even the early ones, the less bright students were having trouble with, so they should do that routinely (interview #5).

Although program plans were not as successful as he hoped, in his final interview Craft indicated that the problem might not be with assigning them too early, but too <u>late</u>.

> It could be, in the department we have to start off the design process a lot earlier. And I think when you first start on the design process probably [writing program plans] would be more useful there, because by the time they're seniors they've kind of learned not to do it (interview #6).

On the whole, and keeping in mind that it did <u>not</u> teach writing to communicate and was just <u>one</u> learning pathway, Craft found the writing to learn experiment to be successful. For his part, he did gain insight into what writing to learn was all about. For his class, writing to learn helped quieter students feel freer to contribute and was, for the teacher, "a good way to find out what's going on". It may also have helped students synthesize information. Craft saw writing to learn's biggest advantage as

probably psychological rather than educational.

It makes them think we're more interested in what they're doing. I think also it helps them realize some of their deficiencies.

Teaching style:

Although Dr. Craft expressed concerns and reservations about writing to me throughout the semester, to his class he was unfailingly positive and matter-of-fact about it, never conveying any doubts to them. Unlike several of the teachers in this study who mentioned writing to learn more or less in passing on the first day of class, Dr. Craft presented his students with a typed sheet of "supplemental remarks", attached to their syllabus, about this research project, their role in it, and the effect it would have on the class. These remarks presented the project as a team effort on the part of both myself and Dr. Craft; "we [would] both be interested" in its outcomes and clearly spelled out each of our roles: mine as primarily disinterested researcher and consultant, Craft as implementor. It also explained some of his reasons for using writing to learn ("this is primarily a feedback mechanism") and exactly what sorts of writing would be required and why. Above all, the remarks were reassuring: "This is not meant to intimidate you [but to] increase your understanding of the subject matter." Craft's oral explanation of this project was similar. He reassured them that it would not be difficult. Writings would be "short

and sweet;" he would not require "big term papers," and repeated that "this is not intended to intimidate you." He also explained that he was very concerned with program design and would use writings for that purpose: "as you're designing your program, [write, and] I'll ask you to hand that in." Furthermore, he presented the class itself as one concerned with language. He explicitly described the course as a language course and said that programming meant "writing programs." Implicitly, his syllabus itself was a piece of writing: conversational, accessible, the product of someone who seemed comfortable with language and writing.

This encouraging, comfortable, yet professional mood pervaded his conduct of the entire course. He emphasized repeatedly both in his syllabus and in class that it was and would be important for students to be both creative and professional about their work explaining, for example, that he wouldn't give a lot of directions on how to write specific programs because that might inhibit their creativity and that students would have to "learn to stand on [their] own feet. That's part of being a professional." This course, he said, was preparing them for future work and it would, therefore, be important to be creative, thoughtful, professional and to take careful notes.

"When this class is running properly," Craft wrote in his syllabus, "it is a joyful experience." Despite the challenging subject matter, Craft was highly reassuring

about his students' ability to measure up and create that joyful experience. Early on he assured his class that they would "all become expert" at programming and later, when they did demonstrate proficiency, told them that their programs were better than those in the textbook. He reinforced their sense of their own ability as he explained new concepts, pausing to say "everything makes sense, doesn't it?" or "It's logical, isn't it?" and waiting for agreement before continuing on. Furthermore, he presented his students with a sense that there were choices in problem-solving and that making those choices was the students' responsibility, a task not beyond their ability: "This is not a real difficult assignment, you've got lots of possibilities."

In addition to conveying to his students that they were able learners, Craft presented himself as a fellow-learner. In this class he was not the holder of the vessel of knowledge which he would dole out to them if they were attentive and clever enough; rather he was a "coach" a "knowledgeable partner" who knew more about some things than they and could help with hints, but did not have all or final answers. In his syllabus he emphasized that the students were also responsible for making the class a success, and that in the best of circumstances he would learn, too. Not only did he share his own experiences programming (and running into trouble programming) with the

class and write the programs along with them, he shared his thoughts as he problem solved with them. During one class, as Dr. Craft was reading through a program in their textbook to the class, a student asked him whether a certain command were necessary. "I'm not sure," Craft responded, and he (and several students) thought out loud until they had reached a mutually-agreed upon answer. He seldom presented himself as the ultimate authority on such questions, frequently qualifying his responses to questions with "I think so," "I'm not sure" or "as far as I know." One of his most enthusiastic stories in interview sessions was about when one of his students had found a "bug" in one of the professor's programs.

This sharing of experience and presentation of the professor as a fellow learner helped foster a very strong sense of community in this classroom. Many of the students knew each other before taking this class and, because it was an upper level class, were probably more likely than a lower-level class to already consider themselves members of a "computer-programming community." Not surprisingly, most pre-class talk was about programming. What was notable, was not that the students were a community, but that the professor was so readily accepted as a nearly-equal member of that community. Although class met in a large room (approximately four times as many seats as students) the students clustered in the center of the front three rows of

the room. The professor met them there; although there was a desk at the front of the room he never sat or even stood behind it, but paced back in forth directly in front of the students. When he would have to write on the board, he would walk around the desk to do so, then walk back around the desk before continuing his lecture or discussion.

Students seldom took notes, but there was a nearly continuous student/professor and student/student interaction, usually centered around the asking and answering of questions. Craft stressed in his syllabus that students would be expected to ask and answer questions in class and to "drop by" and discuss problems they were having with him in his office. He further encouraged questioning in class by frequently and repeatedly asking for questions, then answering them thoroughly and at length. In response, the students were very willing both to ask questions of him (sometimes asking so many questions that they got ahead of the information he had planned to cover), and of each other. They answered each others' questions, as well, and often thought out loud to find those answers. The impression was that it was acceptable to be confused and admit it, and that someone (not necessarily the professor) would help the questioner sort through that confusion to find an answer.

To all appearances, this was a class in which, in many aspects, writing to learn would have been superfluous. Professor/student interaction and feedback was already

strong. Students were willing participants in their own learning and programming was presented as a learning process. Despite this and his misgivings about writing to learn, Craft conveyed the sense that writing to learn, too, was worthwhile and important. Early in the semester he told his students that program plans would be important because "if you can't describe in sentences what you're going to do, you don't know what you're going to do." The program plans had a solid deadline (in keeping with their use as a means for reducing procrastination) and were always collected. Although the professor did not provide students with written feedback on these, programs (which were graded by a student-grader) or any other writings, he did provide extensive oral feedback. Short, in-class "admit slip" writings were assigned matter-of-factly, collected and read immediately. Students saw him using their writing the day they did it, heard about what they had said in the next class session, and, not infrequently, were approached out of class to discuss their comments.

Student response:

Student response to writing in this class was among the best of any class, both in interviews and particularly on surveys, as follows:

Table 2: Whole-class response--Craft's Class

	Total: Survey 1=12 Survey 2=12 Survey 3=12	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3
		Disagree strongly			Disagree moderately			Neither agree nor disagree			Agree moderately			Agree strongly		
Were the results of writing to learn worth the time invested?	Writing to learn keeps the course from covering as much material as possible	0	4	2	5	6	8	5	2	2	2	0	0	0	0	0
	Writing to learn takes time away from learning	0	5	3	8	7	7	4	0	2	0	1	0	0	0	0
	Because of writing to learn, I need to spend more time studying	0	0	0	2	3	7	5	6	4	5	[illegible]	1	0	0	0
	Writing to learn takes time away from better ways of studying	1	1	3	5	11	7	5	0	2	1	0	0	0	0	0
	This course requires too much writing	0	3	2	2	5	8	10	[illegible]	2	0	0	0	0	0	0
	This course requires too little writing	1	1	0	2	2	3	9	6	[illegible]	0	3	5	0	0	0
Did writing to learn improve learning?	Writing to learn helps me learn	0	0	0	0	0	1	2	1	2	9	9	7	1	2	2
	Because of writing to learn I need to "cram" less	1	1	1	2	2	0	3	5	5	5	4	5	1	0	1
	Writing to learn makes course information easier to remember	1	0	0	1	3	2	3	1	5	6	7	5	1	1	0
	Writing to learn makes course information harder to understand	1	[illegible]	3	10	7	6	1	1	3	0	0	0	0	0	0
Did writing to learn increase student involvement?	Writing to learn does not make the course information more personally relevant	0	1	1	3	5	2	7	3	6	2	3	3	0	0	0
	Writing to learn makes the course information more interesting	3	3	1	2	3	1	7	5	5	3	4	4	0	0	1
	Writing to learn helps me create and develop my own ideas	0	0	0	1	1	0	3	3	3	8	7	6	0	1	3
	Writing to learn does not show me that my ideas have merit	0	2	0	6	5	7	5	4	4	1	1	0	0	0	1
The effect of writing to learn on the student/teacher relationship:	I feel the professor knows more about me as a person because of writing to learn	0	0	1	1	2	3	9	5	5	2	4	2	0	1	1
	I feel I do not know the professor as a person better because of his/her reading my writing	2	2	0	1	2	1	8	5	6	1	3	4	0	0	1
The effect of writing to learn on the student's attitude toward writing in general:	I will not do writing to learn on my own	2	1	3	5	6	4	2	1	2	3	3	1	0	1	0
		help a lot			help somewhat			neither help nor hinder			hinder somewhat			hinder a lot		
	When I have to figure things out, writing will:	3	5	7	9	7	5	0	0	0	0	0	0	0	0	0
		Very apprehensive			somewhat apprehensive			neither apprehensive nor confident			somewhat confident			very confident		
	When you have to do a writing assignment do you feel:	2	1	1	4	5	5	3	1	3	3	5	3	0	0	0
		none			1-3 pages			4-6 pages			7-9 pages			10+ pages		
	Approximately how much non-assigned writing do you do per week?	4	1	1	4	7	9	2	2	0	0	0	0	1	1	1
Students' self-image as learner and writer:	Compared to other students you know, as a learner, would you say you are:	a better learner than most			a better learner than some			about average			a worse learner than some			a worse learner than most		
		4	0	2	4	7	4	4	2	4	0	0	2	0	0	0
	Compared to other students you know, as a writer, would you say you are:	more effective than most			more effective than some			about average			less effective than some			less effective than most		
		2	1	2	5	6	5	4	3	1	1	2	0	0	1	2

Were the results of writing to learn worth the time invested?

Overall, disagreement decreased that writing to learn kept the course from covering as much material as possible and, while a few students predicted that it would, none agreed on subsequent surveys. There was also a decrease in the percentage of students marking "neither" as they, too, moved to disagree. This class had one of the lowest initial disagreements with "writing to learn will take time from learning;" on the second survey, all Craft's students disagreed with that statement and survey three retained higher disagreement than most groups. Writing to learn clearly exceeded their initial expectations as far as not taking time from learning and, while there was what seems to have been a typical rebound as the respondents face finals, this group still overwhelmingly disagreed that writing too time from learning. Craft's class showed a steady increase in disagreement with "because of writing to learn I need to spend more time studying," going from the lowest initial percentages to one of the highest on survey 3. And, after one of the lower survey 1 disagreements that writing takes time from better ways of studying, all students in this group disagreed on survey 2. Survey 3 saw some rebound to "neither" but this groups still had the second highest disagreement at the end. Clearly, Craft's students did not agree that writing to learn in any way too time or

effectiveness from studying, probably because the did short writings (like "admit slips) and/or writings which were obviously useful (like program plans). As far as the amount of writing required, no Craft students, on any survey, indicated that too much writing was required; and those who disagreed that too much was required increased steadily from the lowest of any class (20%) to the highest (over 80%). Craft's was also the only class with a significant increase in agreement that too little writing was required.

This class was probably the most initially skeptical about whether the results of writing to learn would be worth the time invested and, other than a couple cases in which they--like many groups--tempered their high second-survey response at the end of the semester, one of the two groups most indicating that writing to learn was definitely worth the time invested[9].

Did students perceive writing to learn as improving learning?

Like most groups, a great majority of Craft's class indicated that writing to learn did help them learn. Their initial high expectations (interesting from a group of people who might easily be considered as non-writers) were exceeded on the second survey, then agreement with "writing to learn helps me learn" dropped on the third survey, as it

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[9]The other such class was McGrath's, see chapter six.

did for all classes, leaving this class with the third highest level of agreement among the classes surveyed.

Unlike the survey group as a whole, disagreement with "because of writing to learn I need to cram less" decreased slightly over the semester. First survey predictions and third survey percentages are very similar at about half the class and what may have happened is that some students who thought they would be able to cram less became less sure, particularly on survey 2, and some who were unsure or believed they would not be able to cram less decided they could, in fact, do so, particularly on survey 3. Overall, like most groups, while writing to learn did seem to reduce the need to cram, agreement was not overwhelming. Most likely, this question was actually not applicable. As one student indicated, this was not a "cram for the test kind of class."

Whereas Craft's class's agreement with "writing to learn makes the course information easier to remember" decreased overall over the semester, as did nearly all other groups, it did so in a different pattern than most. His students had relatively low initial agreement which increased somewhat on the second survey, then dropped to less than half on the third; students marking neither agree nor disagree increased overall. Furthermore, this class had the lowest agreement percentage of all classes, possibly because writing to learn did not help them remember but

possibly, rather, because the types of writing done did not help memorization or because the nature of the course made little memorization necessary. This latter explanation seems plausible, given that the majority of these students disagreed that writing made the course information harder to understand: second survey disagreement met first survey predictions at around 90% then dropped (as did most groups) possibly as students become more anxious about final projects.

Although students in Craft's class did not agree as much as other classes that writing to learn made information easier to remember, and although they did not see it greatly decreasing their need to cram, overall they definitely indicated that writing did not hinder understanding and did, indeed, help them learn.

Did writing to learn increase student involvement with the topic
or the class.

A large percentage of this class marked "neither agree nor disagree" to "writing to learn does not make course information more personally relevant" on both survey 1 and survey 3. In fact, the highest percentage of any class in both instances. On survey 2, 50% did mark "disagree", but overall Craft's students did not expect and do not find that writing to learn made the course material personally

relevant, probably because they types of writing they did were not those directed at making course information personal, the way keeping a journal or role-playing, for example, might.

A large portion of this class also marked "neither agree nor disagree" concerning whether writing to learn made course information more interesting and, while the percentage agreeing did increase steadily over the semester, this class remained the second-least in agreement with this statement. On the other hand, a large and increasing percentage did agree that writing helped them create and develop their own ideas (all other classes' agreement level, even that of those whose percentages are higher, decreased over the semester). Craft's class's end of the semester attitude also exceeded initial predictions, and was third highest in disagreement with "writing to learn does not show me my ideas have merit." The writings done--program plans and admit slips--did not invite identification with subject matter. It did, however, lend itself to the examination and testing of the writer's own ideas.

While this class seemed unsure whether writing made course information more interesting or relevant to them, they did indicate that writing to learn's effects as far as their own ideas and confidence in them were positive and exceeded initial expectations.

What effect did writing to learn have on the student-teacher relationship?

Craft's class had the lowest agreement of all classes with "the professor knows more about me" and, although it increased appreciably on survey 2 and slightly overall, the largest percentage of students indicated they "neither agreed nor disagreed. Response to "I do not know the professor better because of his/her reading my writing" was similar, with few students disagreeing, increasing percentages agreeing, and the largest percentage marking "neither agree nor disagree." Perhaps because they had little experience with this sort of writing and were less knowledgeable that other classes about what to expect, overall students in this class did not expect writing to improve their teacher-student relationship. Perhaps because of the type of writing done and the way it was handled, their expectations (or lack of them) were fulfilled. Interviews of both the professor and students suggest another reason: that they simply didn't feel the need to improve an already good and open relationship.

What effect does writing to learn have on students' attitude toward and practice of writing in general?

Nearly two-thirds of this class consistently disagreed that they would not do writing to learn on their own, apparently agreeing with the classmate who said that

professional programmers did program plans as a matter of course. An equally consistent 100% indicated that writing helped them when they had to figure something out, with the percentage indicating it helped a lot (as opposed to somewhat) increasing over the semester. Craft's students felt slightly more apprehensive than confident when they had to do a writing assignment, particularly initially. Unlike several other classes,however, their apprehension did not increase--in fact it did not appreciably change over the semester. They fell roughly in the middle of the other classes according to how much non-assigned writing they did. Most students wrote 0-3 pages per week with more writing 1-3 and fewer 0 as the semester progressed. A steady few students wrote 7 or more and while nearly 20% indicated they wrote 4 - 6 pages on the first two surveys, none did on the third.

Although their practice in terms of non-assigned pages written was not quite as good as other classes, the attitude of Craft's students toward writing to learn was good; in fact it was generally better than most classes, particularly their response to "writing helps me figure things out."

Interviewed students' responses

The interviewed students, too, were generally positive about the writing they had done. They characterized the class as challenging--"It's a very demanding class. Dr.

Craft expects a lot out of a student" (Burger, interview #1)--but also concluded that "he teaches it well. I'm actually learning something" (Costanzo, interview #1). Like Husband's students, who will discussed in the next chapter, they did not expect to do writing in the class and their initial reactions were mixed, but strong.

> My first reaction was, 'this is not an English class.' I thought it'd be a neat idea, something different, at least (Costanzo, interview #1).
>
> I was kind of wondering what was going on. It was really different from last year when he taught it. I was like, 'something's happening here. I better pay attention' (Burger, interview #1).

Although Craft was very opinionated about writing to learn and writing in general during interviews, his students saw only what he did, not what he thought. When asked at the end of the semester what they though his attitude toward using writing in his class was, all interviewed students said that they could not really tell, it seemed neutral--neither particularly for it nor against it.[10]

> I think Dr. Craft was trying it as an experiment and if you start an experiment you can't expect things if you want to be objective on how it works. So I don't think he was really positive or negative on it. He wanted to try it and put in a genuine effort, but I don't think he had any preconceived notions. I'd say he was fairly neutral on this. Every once in a while, when he felt like he was in a hole, he'd whip out the

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[10]Interestingly enough, although he was unaware of Craft's strong views about the importance of using several learning "pathways," one of his students began using two such pathways for program planning: "I'm also drawing little pictures with the writing to help me understand what's going on (Burger, interview #2).

> paper and say "write some stuff for me," so I think he thought of it as a tool to use and to try and he got it out when he thought he needed it (Ploegstra, interview #4).

Response to writing to learn

With the exception of one reservation--that they would have known the professor better if he had provided written feedback to their assignments--the overall reaction to writing to learn was quite positive. In general it helped make ideas more concrete and easier to handle and was worth the time it took.

> It takes some time to do it, but from a cost versus benefits, it's really greatly to your advantage to spend the time up front rather than spend the time on the back end trying to band-aid together the stuff you work on (Ploegstra, interview #4).

One student used writing to learn techniques from this class in his own tutoring of other students.

> I tutor Basic [programming] people and one [time]...in stead of going through the program with them to help do it, one time I just said, "Stop, this is your twelfth week of the semester or whatever. Tell me what it is you want to do first and write it out." And they did that and then I said, "Ok. Look at your step-by-step." I used that theory on them to get them to do it and it worked well because it took a lot less than it usually did to get through the program. It worked well (Costanzo, interview #5).

Like their professor, they thought the "admit slips" explaining what they did and didn't know or why a particular program crashed, were helpful. Writing and hearing about why programs crashed made the students more aware of the problems in their own programming and reinforced the need

for careful design. It also, in this close-knit class, added to the sense of community. Several students indicated that it was helpful to hear others' perspectives on what went wrong and to share the woe.

> Perhaps [Craft read these admit slips] in class to show that other people were having problems and what the problems were. That they can share the grief, humor, whatever (Costanzo, interview #3).

Students indicated that writing what they did and didn't know or were and weren't comfortable with made them more aware of their own comprehension and more able to evaluate their ideas. It also, they thought, let the professor know more about their knowledge level, whether they were keeping up with or ahead of his agenda, so he could adjust his teaching accordingly.

> They let him know where we were, so he wouldn't just assume we were up to date with him and just keep going while we're just straggling behind (Burger, interview #4).

Craft's students were also impressed that he could and would approach them to ask about and help explain what they had indicated they didn't understand.

> It was very worthwhile because I know Dr. Craft read them, and a couple times he approached me and said, "So you don't know about this." Then it would help him explain a lot better. I knew if he read them he would do it, but if he never read them he couldn't tell, so I think it was a very good idea. I'd like to see it done more in other classes (Burger, interview #4).

Not all students were completely enthusiastic. While one said he wished they would have written more admit slips in this class, another said he didn't really think they were

necessary--the professor kept close tabs on them anyhow and was approachable for help. For larger classes, though, "yes, you need the half-sheet [admit slips]" (Costanzo, interview #3).

Although Dr. Craft was unsure that program plans were entirely successful, the students were quite sure that they were. They conceded that writing them could be time consuming, but concluded that it actually saved time in the long run.

> I've been programming for fifteen years, and it took me ten of those to figure out that the hot setup is to design it first, [write a program plan] and then write [the program itself]. I think this will be of great assistance to students, that they won't have to go through all the pain and agony that I had to figure it out, "wow, I can do a little work up front or I can do a lot of work at the end" (Ploegstra, interview #1).

As Craft had hoped, students said that required program plans did discourage procrastination, leaving students with more time to work on the program "unconsciously" or ask the professor questions before the program was due. The plans forced them to think about the program before writing it, planning out and organizing their ideas, evaluating them and sometimes discarding unsuccessful steps for more successful ones. Besides showing what would work best, they also showed--without the "pain and agony" of a crashing program--what wouldn't work. In keeping with Craft's emphasis on the students as professionals-in-training, two of the most able students indicated that they already did programming on

their own. In fact, Mike Ploegstra, a professional programmer explicitly characterized program planning as something that professional programmers routinely do, saying

> My boss and I are both computer professionals, but when we want to think about something the first thing we do is reach for a pencil and paper and start writing things down. A lot of times, seeing it on paper makes it make more sense, or we can identify the problem. Writing is a tool that I use every day because it makes my life easier (interview #1).

The interviewed students partially shared Craft's concern that he had assigned programming too early, before it was really needed. While plans were undeniably necessary for complex programs, "you don't have to do program plans all the time. There are some programs that are so simple even a child could do it" (Costanzo, interview #5). Overall though, they thought program plans were a good idea.

> It changed my way of working with things in the course of the semester. I imagine I could have sat down and done it from my freshman year on; I never forced myself to. After being forced to do it, I find myself doing it more often (Burger, interview #4).

Chapter Four

"I Can Remember the Volvox and That's What We Wrote On": Robert Husband's Invertebrate Zoology Class

Class characteristics

The second class is Robert Husband's Invertebrate Zoology, a 200 level biology class, initial survey size 10, final survey size 10. Students were sophomores through seniors, all biology majors. The writing assignments in the class were as follows:[11]

1 "Volvox" and "arthropod" paragraphs: students synthesized material from their textbook and a handout into a paragraph on each of these invertebrates.

2 Essay questions on exams: students were given their choice and were always told beforehand what the essay questions would cover.

3 Final scientific report: a paper in formal scientific style on the invertebrate of the student's choice.

The first assignment would come closest to meeting, for example, Gere's definition of writing to learn with students informally and in their own words summarizing information. However, none of these writings are expressive, all were written for the teacher-as-audience, and all were writing to

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[11]Although Dr. Husband considered lab reports and fill-in-the-blank note-taking sheets writing-to-learn assignments, his students did not, so they are not included in this list.

demonstrate, rather than create knowledge, particularly the last two. These writings included little or none of the process approach--revision was allowed on the volvox paragraph, but only because the students did not initially understand what was expected of them.

Dr Husband began our initial interview somewhat hesitant and unsure about using writing across the curriculum in his class. It was a "hard-science" course in which students would need "to be able to memorize quite a lot of information that comes at them quickly [and] can be confusing (interview #1). Nevertheless, he had heard the phrase "writing across the curriculum," was interested in the idea, and membership on the editorial board of a scientific journal increased his concern with his own students' writing ability or lack thereof. As the meeting progressed and we discussed both formal writing and uses of writing to improve learning, especially retention, he grew more interested.

Teaching style

On the first day of class, Dr. Husband told his students that "we" (he and I) hoped they "would do a bit of writing in the class," for example "short" reports on various invertebrates. "We may have you do a little writing on exams," he continued, as well as keep a lab notebook.

This introduction is significant because Husband had not taken "ownership" of writing to learn in his class. The implied message was that he would require writing as part of a research team, not entirely of his own accord. Furthermore, the writing done would be "little," limited both in size and kind.

In all likelihood Husband presented the prospect of writing in a zoology class to his students in this low key manner at least in part to reassure them. He realized that this would be a difficult class and did not want to add to their anxiety[12]. As their professor, Husband showed and expressed a great deal of concern about his students and their ability to weigh and assimilate the information he would present to them. To help with this information/memorization load, from the first day, he told them repeatedly, "don't try to memorize everything; get a general idea." Despite these reassurances, students remained worried about lectures that conveyed and tests that asked for specific factual information.

Still concerned a few weeks into the semester, Husband began giving the students fill-in-the-blank handouts on

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[12]In Brad Elder's case the prospect of writing did, in fact, cause anxiety: "Everyone was talking about Dr. Husband is a real easy class and I got in here and found out I'm gonna be writing. I thought: "just what I need" and that it was really gonna hurt my grade. I didn't know what was involved in the writing. I hope it doesn't dock my grade...I'm dyslexic...I have a hard time...I can write good, but I can't spell (Elder, interview #1).

which he had simplified a section of their text, boiled it down to the essentials, and from which he then lectured.

> The main objective, reason for doing that is that they often get assigned twenty five pages or so, and what I try to do in about six pages or so, is pick out the things I think that are important. That gives them a small package to deal with, the significant things out of the book. They could do this themselves if they wanted. The style is a lot different from what the book is, it's more informal. I also try to stress the importance, the significance of the particular thing, show what these things are good for, why you study spiders for example, because sometimes that helps give some purpose to it. If you're studying these things for a reason it's a little more motivating (interview #4).

He modelled, in a sense, the sort of notetaking that he thought would be most effective for them. He also modelled lab reports and their research papers for them, so they would see clearly what he wanted, how to do it "right."

> [The lab reports] are still not that great, but the point is, I gave on the handout sheet the kinds of things that impress me about an organism and they're casual and they're personal. Like: "this thing looks like an egg," something that would help me remember something about that organism and fit it in with other organisms. At first people wrote down what I put down; now a number of people are beginning to put down the things that impressed them. Even though it's not very sophisticated, it's working (interview #2).

His concern for his students came through most strongly in his eagerness that they view themselves as future scientists. This class began with a strong sense of community: a small, upper level class in which most students knew each other and talked comfortably, often about class or science-related subjects until the professor began

lecturing. Husband fostered this atmosphere in several ways.

He encouraged a sense of community between class members by his choice of meeting-place, a small, cozy meeting room outside his office. His students seemed to feel comfortable comparing notes and sharing laboratory adventures and mishaps when he left the room.

Husband included himself in this community and bridged the gap between his students and the larger scientific community by writing personable comments on their papers and tests as well as talking to them about their text book in such a way as to make it clear that a real person wrote it and made choices while doing so. For example, he told them that the text contained a large amount of information about the author's area of specialization and mentioned that there had been changes in the amount of attention to women scientists between this and previous editions. Further, and perhaps more importantly, Husband shared his own experiences as a scientist, bringing in interesting objects (coral, Petosky stones, slides) for the students to examine, and telling stories about swapping bumblebees through the mail, naming a newly discovered mite for a family member. Finally, although his assignment of the research paper did not use the process approach, and was primarily assigned for the students to demonstrate knowledge, Husband presented the paper as a means of exposing the students to the

expectations, forms and langauge of the scientific community. He told me,

> [The purposes of the paper are:] several things. Number one, I'd like to get them reading scientific literature in this particular branch of biology, not just the textbooks, but the journal references as well. I like people to see what people are doing, that they are doing a variety of things, which is what I hope they come up with, so that a person who is at a place like Adrian college may or may choose to do laboratory work or field work or whatever....I'll try to show that a person that is teaching in a place like high school can contribute, [give them] illustrations of persons who have not gone on for years and years of graduate work.

About writing itself, he said,

> Am I trying to teach them writing skills? Yes. First of all, the writing skills of a particular type. The way things are organized, they have to do a historical summary, show where the work is in that particular field, summarize a little bit of the literature, not a great deal, but some, and then say something about methods. Even though the methods we use are library research methods, that must be mentioned. Looking at their journal articles they can see how others structured their methods, then how you present data and how you almost always use third person singular....the other thing is of course the organization has to be good, the punctuation has to be good, correct, the grammar, the whole thing. And the same thing in terms of literature cited. I hope to point out that there are indeed choices, what you do is you look at the journal you hope to get into. I don't think it's a really difficult thing for them to do (interview #5).

Throughout, Husband gave the sense that, first, science was very interesting stuff done by very interesting people and, second, that those people were human beings just like himself and his students; he was very positive about invertebrates in particular and science in general as an

intriguing, exciting and worthwhile endeavour.

Teacher's attitude toward writing

After the previously mentioned initial hesitation, Husband's attitude toward writing to learn became more positive as well. He found assigning paragraphs about volvox a beneficial exercise, not just as an exercise, but as preparation for an exam.

> The animal I asked them to write about is one that is somewhat like the stem organism between single cell and multicellular, so it's a kind of focal point. What I was trying to get at is it cannot be thought of as the ideal stem animal for multicellular [animals], and there are reasons why it is a candidate. So I wanted them to look at this organism in more than just a casual sort of idea and they did (interview #2).

He said that his students, too, "liked it. They enjoyed it, and they appreciated it once they got the exam" (interview#3).

However, Dr. Husband expressed concern that he was not having his class do as much writing as they could--or should--throughout the semester:

> I probably should be doing more writing (interview #2).
>
> Do you have some other ideas for working on their writing? We should be doing more, I know (interview #3).
>
> I should have done more [writing] because there wasn't that much problem with grading (interview #6).

And he indicated that in future classes he would try to assign more writing ("I suspect I'll do more of this sort of

thing in the future than just having a paragraph here and there like I've been doing so far on exams,") as well as plan out assignments more carefully.

In retrospect, Husband thought the writing he assigned accomplished many of the objectives writing to learn proponents say it does:

> I think you get more involvement with the ideas, more interaction with the ideas in having to write them down. And that means longer retention, better understanding. I think that's the best thing I got and the best thing they got out of it (interview #6).

He also indicated that it helped quiet students contribute, helped students synthesize ideas, could have improved discussion if there had been more discussion in the class, and--a matter of some concern to Dr. Husband--seemed to help his students write more competently.

Although Husband said he saw value and success in using writing as a means to improve learning, and although he seemed genuinely intrigued by writing to learn's possibilities and several times asked for suggestions for learning-writing assignments, he was reluctant to incorporate many ideas quickly. Other than the volvox paragraph, he actually assigned very little writing that would meet most definitions of writing <u>to learn</u>. For the most part, his was a "traditional" content-based class in which the professor, feeling he must cover a large amount of content material, spent most of his time lecturing while students took rapid notes; he asked few questions, answered

most of them himself, and expressed concern that if more writing were required he could not cover everything. Husband recommended to his students that they memorize by "keep going over and over it and eventually you remember it." With few exceptions (the opportunity for revision of lab reports and final papers might be considered one) he assigned mainly "testing" writing, writing for teacher as examiner: exam questions, lab reports, formal papers.

To Husband, writing to learn generally meant writing in the "traditional" sense with its emphasis on product including form and surface correctness. Most of his comments on student writing, while undeniably personable and helpful, nevertheless centered around these concerns, even on the volvox paragraphs and exams. In interviews he was most often concerned with how to assess and improve these aspects of his students' writing. For example, he was concerned with the appearance of one his students' exams:

> One of those [students] is one of our top students, but the last time she took an exam she had all kinds of language problems in it, pronouns, verb agreement. And it really isn't like that person to do that. I put a comment on her paper saying that she must have been tired, which she probably is, she's doing her student teaching right now. I think that is wearing her out. My general impression is she really wanted to do well, to write well. Everybody has lapses like that and they have to come back and correct their work (interview #3).

Although he did indicate that "to improve writing, I think is to make people do it and to do it and do it and do it. I

don't think you have to put a grade on it, but you should make comments. And you also have to set an example yourself" (interview#4), he remained very concerned with how to grade the writing he received

> It's hard for me to be objective. I guess that's not really the word because it's pretty easy for me to tell that nouns don't agree with verbs and spelling and stuff like that, but it's pretty hard for me to know what to do in terms of assessing a grade for that . And I don't know as I'm really as worried about assessing a grade as I am about them changing their habits because I'm more really concerned about content. But it is a concern to try to get them to try to work toward improving. But I do worry about it: should I really be giving, marking someone half off for not having this thing spelled correctly when they really know what they're doing. Usually I give them some credit, half credit or something like that, and I'm not sure that's right. If I were grading myself I'd grade myself all wrong, but in others I'm not so sure how much encouragement he needs (interview #4).

To solve the problem of poor student writing, he would like to see students take more English classes ("The more courses you get the more, I think you get to the point where you're going to stop making mistakes").

Dr. Husband began the semester unsure about what writing to learn was and whether it would work. He ended the semester believing it to be a good idea for students to write more, yet despite reassurances and information about writing to learn, caught between definitions. To him, even though volvox paragraphs worked, success in writing remained primarily a matter of following form and convention correctly. Writing was more something one did to formally

demonstrate familiarity with content than a means of becoming comfortable and familiar with it.

Student response

Interestingly, to most of his students, "writing to learn" was and remained largely an effective means of learning.

Whole class response

The overall surveyed response of Husband's class to writing to learn was generally positive, although not as much so as most other classes and, at times, less positive than that of the surveyed population as a whole (see subsequent chapters and chapter 2).

Table 3: Whole-class response--Husband's class

	Total: Survey 1=10, Survey 2=9, Survey 3=10	Survey 1	Survey 2	Survey 3
		Disagree strongly		
Were the results of writing to learn worth the time invested?	Writing to learn keeps the course from covering as much material as possible	4	4	3
	Writing to learn takes time away from learning	1	4	3
	Because of writing to learn, I need to spend more time studying	0	2	2
	Writing to learn takes time away from better ways of studying	1	3	3
	This course requires too much writing	1	0	2
	This course requires too little writing	0	0	0
Did writing to learn improve learning?	Writing to learn helps me learn	0	0	0
	Because of writing to learn I need to "cram" less	0	0	0
	Writing to learn makes course information easier to remember	0	0	0
	Writing to learn makes course information harder to understand	2	3	3
Did writing to learn increase student involvement?	Writing to learn does not make the course information more personally relevant	1	1	0
	Writing to learn makes the course information more interesting	1	0	0
	Writing to learn helps me create and develop my own ideas	0	0	0
	Writing to learn does not show me that my ideas have merit	1	1	0
The effect of writing to learn on the student/teacher relationship:	I feel the professor knows more about me as a person because of writing to learn	1	0	0
	I feel I do not know the professor as a person better because of his/her reading my writing	0	0	0
	I will not do writing to learn on my own	0	0	0
The effect of writing to learn on the student's attitude toward writing in general:	When I have to figure things out, writing will:	Help a lot		
		1	4	2
	When you have to do a writing assignment do you feel:	Very apprehensive		
		2	1	1
	Approximately how much non-assigned writing do you do per week?	none		
		2	3	2
Students' self-image as learner and writer:	Compared to other students you know, as a learner, would you say you are:	a better learner than most		
		1	1	2
	Compared to other students you know, as a writer, would you say you are:	more effective than most		
		0	0	0

	Total: Survey 1=10, Survey 2=9, Survey 3=10	Survey 1	Survey 2	Survey 3
		Disagree moderately		
Were the results of writing to learn worth the time invested?	Writing to learn keeps the course from covering as much material as possible	1	3	2
	Writing to learn takes time away from learning	5	3	3
	Because of writing to learn, I need to spend more time studying	2	3	2
	Writing to learn takes time away from better ways of studying	5	1	4
	This course requires too much writing	2	6	5
	This course requires too little writing	1	3	2
Did writing to learn improve learning?	Writing to learn helps me learn	1	0	1
	Because of writing to learn I need to "cram" less	1	2	3
	Writing to learn makes course information easier to remember	1	0	1
	Writing to learn makes course information harder to understand	4	2	4
Did writing to learn increase student involvement?	Writing to learn does not make the course information more personally relevant	5	2	5
	Writing to learn makes the course information more interesting	1	0	0
	Writing to learn helps me create and develop my own ideas	1	1	0
	Writing to learn does not show me that my ideas have merit	4	3	4
The effect of writing to learn on the student/teacher relationship:	I feel the professor knows more about me as a person because of writing to learn	1	1	0
	I feel I do not know the professor as a person better because of his/her reading my writing	4	4	3
	I will not do writing to learn on my own	3	4	5
The effect of writing to learn on the student's attitude toward writing in general:	When I have to figure things out, writing will:	help somewhat		
		6	3	4
	When you have to do a writing assignment do you feel:	somewhat apprehensive		
		2	3	4
	Approximately how much non-assigned writing do you do per week?	1-3 pages		
		8	4	4
Students' self-image as learner and writer:	Compared to other students you know, as a learner, would you say you are:	a better learner than some		
		7	3	4
	Compared to other students you know, as a writer, would you say you are:	more effective than some		
		5	4	5

	Total: Survey 1=10, Survey 2=9, Survey 3=10	Survey 1	Survey 2	Survey 3
		Neither agree nor disagree		
Were the results of writing to learn worth the time invested?	Writing to learn keeps the course from covering as much material as possible	3	2	5
	Writing to learn takes time away from learning	3	2	2
	Because of writing to learn, I need to spend more time studying	3	1	3
	Writing to learn takes time away from better ways of studying	2	4	2
	This course requires too much writing	5	3	3
	This course requires too little writing	8	6	7
Did writing to learn improve learning?	Writing to learn helps me learn	2	0	2
	Because of writing to learn I need to "cram" less	4	3	3
	Writing to learn makes course information easier to remember	2	3	1
	Writing to learn makes course information harder to understand	3	4	2
Did writing to learn increase student involvement?	Writing to learn does not make the course information more personally relevant	4	5	3
	Writing to learn makes the course information more interesting	1	6	6
	Writing to learn helps me create and develop my own ideas	2	1	7
	Writing to learn does not show me that my ideas have merit	2	4	6
The effect of writing to learn on the student/teacher relationship:	I feel the professor knows more about me as a person because of writing to learn	3	4	6
	I feel I do not know the professor as a person better because of his/her reading my writing	5	4	5
	I will not do writing to learn on my own	5	3	2
The effect of writing to learn on the student's attitude toward writing in general:	When I have to figure things out, writing will:	neither help nor hinder		
		2	1	3
	When you have to do a writing assignment do you feel:	neither apprehensive nor confident		
		0	0	1
	Approximately how much non-assigned writing do you do per week?	4-6 pages		
		0	1	0
Students' self-image as learner and writer:	Compared to other students you know, as a learner, would you say you are:	about average		
		2	5	3
	Compared to other students you know, as a writer, would you say you are:	about average		
		2	4	3

	Total: Survey 1=10, Survey 2=9, Survey 3=10	Survey 1	Survey 2	Survey 3
		Agree moderately		
Were the results of writing to learn worth the time invested?	Writing to learn keeps the course from covering as much material as possible	1	0	0
	Writing to learn takes time away from learning	0	0	2
	Because of writing to learn, I need to spend more time studying	4	3	3
	Writing to learn takes time away from better ways of studying	1	1	1
	This course requires too much writing	2	0	0
	This course requires too little writing	1	0	1
Did writing to learn improve learning?	Writing to learn helps me learn	3	4	4
	Because of writing to learn I need to "cram" less	4	3	1
	Writing to learn makes course information easier to remember	6	2	5
	Writing to learn makes course information harder to understand	1	0	1
Did writing to learn increase student involvement?	Writing to learn does not make the course information more personally relevant	0	1	2
	Writing to learn makes the course information more interesting	7	3	4
	Writing to learn helps me create and develop my own ideas	6	6	2
	Writing to learn does not show me that my ideas have merit	3	1	0
The effect of writing to learn on the student/teacher relationship:	I feel the professor knows more about me as a person because of writing to learn	4	4	3
	I feel I do not know the professor as a person better because of his/her reading my writing	1	1	2
	I will not do writing to learn on my own	1	2	3
The effect of writing to learn on the student's attitude toward writing in general:	When I have to figure things out, writing will:	hinder somewhat		
		0	1	0
	When you have to do a writing assignment do you feel:	somewhat confident		
		5	3	3
	Approximately how much non-assigned writing do you do per week?	7-9 pages		
		0	1	3
Students' self-image as learner and writer:	Compared to other students you know, as a learner, would you say you are:	a worse learner than some		
		0	0	1
	Compared to other students you know, as a writer, would you say you are:	less effective than some		
		2	0	2

	Total: Survey 1=10, Survey 2=9, Survey 3=10	Survey 1	Survey 2	Survey 3
		Agree strongly		
Were the results of writing to learn worth the time invested?	Writing to learn keeps the course from covering as much material as possible	1	0	0
	Writing to learn takes time away from learning	1	0	0
	Because of writing to learn, I need to spend more time studying	1	0	0
	Writing to learn takes time away from better ways of studying	1	0	0
	This course requires too much writing	0	0	0
	This course requires too little writing	0	0	0
Did writing to learn improve learning?	Writing to learn helps me learn	4	1	1
	Because of writing to learn I need to "cram" less	1	1	3
	Writing to learn makes course information easier to remember	1	4	3
	Writing to learn makes course information harder to understand	0	0	0
Did writing to learn increase student involvement?	Writing to learn does not make the course information more personally relevant	0	0	0
	Writing to learn makes the course information more interesting	0	0	0
	Writing to learn helps me create and develop my own ideas	1	1	1
	Writing to learn does not show me that my ideas have merit	0	0	0
The effect of writing to learn on the student/teacher relationship:	I feel the professor knows more about me as a person because of writing to learn	1	0	1
	I feel I do not know the professor as a person better because of his/her reading my writing	0	0	0
	I will not do writing to learn on my own	1	0	0
The effect of writing to learn on the student's attitude toward writing in general:	When I have to figure things out, writing will:	hinder a lot		
		1	0	1
	When you have to do a writing assignment do you feel:	very confident		
		1	2	1
	Approximately how much non-assigned writing do you do per week?	10+ pages		
		0	0	1
Students' self-image as learner and writer:	Compared to other students you know, as a learner, would you say you are:	a worse learner than most		
		0	0	0
	Compared to other students you know, as a writer, would you say you are:	less effective than most		
		1	1	0

Were the results of writing to learn worth the time invested?

A few students in this class predicted that writing to learn would keep the course from covering as much material as possible; on the second survey, a large majority disagreed that it did, but on the third, perhaps because of approaching finals many students neither agreed nor disagreed. As with most classes, very few students indicated that writing to learn took time away from learning. Again, and with three other classes--the three in which one might least expect to do writing--the greatest percentage disagreeing was on survey 2. Also as with most classes, a significant portion of students predicted that they would need to spend more time studying, then found this was not necessarily true. Yet again, more recorded favorable responses to writing to learn on the second survey than the third.

Few students agreed that writing to learn took time from better ways of studying and the percentage that did agree decreased, especially after the first survey. Disagreement was highest on the third survey, so, although Husband's students became less favorable toward writing to learn on the other questions in this category, they become more favorable toward it in this aspect. Perhaps they felt anxious and overworked in general, but did not specifically

fault writing to learn. Equally likely, as they did little writing to learn, it simply did not compete with other methods. That is, no other particular method of studying would change their end of semester apprehensions.

This class was, it should be noted, second only to Craft's class in disagreeing that the class required too much writing (also, as in the case of Craft's class, few students disagreed initially) and were the class most marking "neither agree nor disagree" to "this course requires too little writing, with relatively little disagreement.

As might be expected in one of the two most usually non-writing classes, Husband's students' responses were more similar to those of Craft's students than any other class. Initially somewhat unsure whether the results of writing to learn would be worth their efforts, at mid-semester students indicated the results were worth the effort. Then, perhaps because of approaching finals, or because most of the writing was "testing" writing, they became less favorable. A notable exception to this pattern was that more students disagreed that writing to learn took time from better ways of studying as they semester progressed. Further, while these students did not indicate that the course required too little writing, neither did they indicate too much writing was required.

Did students perceive writing to learn as improving learning?

Husband's class had the lowest initial agreement of any class with "writing to learn helps me learn"--about 70%. This increased sharply at mid-semester to 100%, then dropped back to 70%, probably because little "learning" writing had been done. Their expectations and ability to "cram less decreased steadily over the semester; those indicating that writing to learn did not make it possible for them to cram less increased, possibly also because of the lack of writing. On a more positive note, responses indicating that writing to learn made course information easier to remember and did not make it harder to understand also increased overall, the only class in which this was the case.

Compared to other classes, Husband's students had relatively low initial expectations of writing to learn, possibly because they had done little and did not generally expect to do any in such a course. These expectations were not met as far as not needing to cram; however, they were exceeded as far as comprehension and remembering of material and greatly exceeded (at least on the second survey, given shortly after the "volvox" exam) as far as whether writing simply helped them learn.

Did writing to learn increase student involvement with the topic or the class.

Over half of Husband's students initially disagreed that writing to learn would not make the course information more personally relevant. While a large number did not agree to that statement at any time, over 50% neither agreed nor disagreed on the second survey and just half disagreed on survey 3. A part of the class may have hoped writing would increase the personal relevance of material, but it did not, to a great extent, do so.

Similarly, Husband's class had even higher initial expectations for writing as far as making information more interesting--these were also not met--and while agreement with "writing to learn helps me create and develop my own ideas" was high it dropped sharply on survey 3. Finally, while the percentage of Husband's students agreeing that writing would not show them their ideas had merit dropped over the semester from 30% to 0, the percentage disagreeing also decreased, although much more slightly.

Husband's students had relatively high initial expectations of writing to learn's ability to increase their involvement with course material (with the possible exception of expecting it to show them their ideas have merit--something they may not have expected in this sort of class). However, in virtually every case writing to learn did not come near meeting these initial predictions. One notable slight exception: on the second survey students indicated that writing definitely was helping them create

and develop their own ideas, again, this survey was given shortly after the volvox paragraph assignment.

What effect did writing to learn have on the student-teacher relationship?

Very few (none on the last survey) students disagreed that the professor knew them better because of writing to learn, however the percentage that agreed decreased slightly. The majority of students marked "neither agree nor disagree." The percentage that disagreed with "i do not know the professor better..." also decreased, particularly on survey 3. At the end of the semester, while few of Husband's students indicated that writing to learn did not improve the student teacher relationship, most neither agreed nor disagreed that it <u>did</u>. This was a class with an already strong sense of community. Writing to <u>build</u> community would probably have been redundant.

What effect does writing to learn have on students' attitude toward and practice of writing in general?

Although Husband's class started at one of the lowest levels of disagreement with "I would not do writing to learn on my own," it increased steadily until on survey 3 one half the class disagreed with the statement. And, although the percentage of students indicating that writing helped them figure things out declined, the percentage indicating it

neither helped nor hindered increased; at the end, over half the class indicated that writing helped them figure things out and three-quarters indicated it helped at mid semester. Furthermore, his students steadily did more non-assigned writing, one of the few groups to show this increase. On the other hand, their confidence when faced with a writing assignment decreased and apprehension increased as the semester went on. It seems possible that the students made a distinction Husband did not. Writing to learn helped them learn; however, product/"testing" writing made them anxious.

Husband's students did not enter the semester with the most favorable attitude toward writing to learn of all classes, and doing writing did not increase their confidence. They did, however, end the semester writing more and more likely to do writing to learn on their own than when they began.

Interviewed students' responses

Interviewed students, while generally positive about writing to learn, also had some concerns about it and its use in their course. This was, they indicated, a difficult and challenging course, requiring the memorization of a large number of facts about invertebrates. While some students found the going easier when studying animals in which they held a particular interest, all interviewees indicated that they often felt confused or overwhelmed

> This class is confusing, hard to study, and it's really hard to understand, even reading the book, because the Latin names are like a whole line in the book. I like the class, I just can't understand it (Elder, interview#1).
>
> I'm kind of lost right now. There's so much stuff to study, I'm having a rough time (Harsh, interview #1).

They weren't always sure what information was most important (usually meaning what would be asked for on the test) and had difficulty with the amount of memorization necessary

> [Class is] real different from any class I've had before. A lot of memorization, a heck of a lot of memorization [which] doesn't seem very practical for some reason (Harsh, interview #2)....I haven't found [a good way to study]. It's funny. The ways that used to work for me just kind of don't work in this class. I used to be real good at association and writing stuff down. An over-abundance of stuff is what it is, an overload. I'm trying mixing everything up, see if that'll work (Harsh, interview #3).

Nevertheless, every interviewed student indicated that writing did help him or her learn and understand information.

> I've always liked writing. It's always been, if you write it, then you learn it (Elder, interview #4).
>
> If he had more of "take these questions home and write out the answers to them," I think that would help. Writing, I think, is great because you remember it (Anderson, interview #1).

They indicated, in fact, that they took for granted, from the start, that writing fostered learning.

> It struck me as kind of weird that someone would run an experiment on [writing to learn]. I always took it that if you wrote something, if you could write something out and put it in your own words, you had to understand it to write it. And so it

> seemed like so serious and formal. To me, it seemed like that would be given (Elder, interview #1).

Three of the interviewed students said that they had always felt positive about writing as a means of learning, and had used it as one before. The other said

> Before [this semester] I would have said, "no. I hate writing. I don't want to write," and I wouldn't think that it would have helped. But it helps you piece together what you know (Blevins, interview #5).

Primarily, they perceived writing as helping them retain information better. Considering their previously-mentioned concerns with the amount of material to be assimilated, it is not surprising that when commenting on what writing helped with, they mentioned memorization.

> It helps your long term memory a lot more. I guess that's what we're striving for when you take a class like that. Is to remember some of it. It definitely helps a lot that way, where the methods we used before, just cram and forget it--you might as well forget it (Harsh, interview #4).

The students found the volvox paragraph especially helpful, in fact, in three of his four interviews, Elder mentioned how effective the "volvox paragraph" had been, concluding in his final interview,

> It got you to learn. Out of the whole class I can remember the volvox and the arthropod stuff and that's the things we wrote on (Elder, interview #4).

They saw worth in the short research paper they wrote,

> I like doing that kind of stuff. I'm sick and tired of having to memorize a thousand different things. I'd rather find out more about one thing than a little about a bunch of nonsense (Harsh,

interview #5).

> You should [write papers] because a lot of what you do, your research, is all paperwork. Senior seminar--all paperwork. Outside--all paperwork. You gotta know how to do the paperwork if you're med. tech. or if you're a doctor, so I think it's better. I wish they would have more of that and less of this studying thing (Anderson, interview #3).

Also worthwhile were essay question on their tests, either in addition to or rather than multiple choice or matching questions.

> I like [essay questions]. Provided I know what's going on, then you can get out everything you know. On a regular test, it's like the teacher can pick, well, how many colonies of this little thing are in a volvox. Well, if I don't know that, that doesn't mean I don't know volvox. I like the essay better , but you have to know what you're talking about on an essay; you can't bullshit your way out of them (Elder, interview #3).

Problems with writing

In fact, one student interviewed who had identified himself as a dyslexic and said that writing and reading his own handwriting was very difficult for him, tried writing to learn techniques on his own. His success was limited, however, and other interviewed students also noted drawbacks to writing in their class. It was, as most students (and experts) acknowledge, time consuming. Because of the preponderance of material to cover, they doubted they could have made it through and still have written much. This may stem partly from their conception of writing as "formal"

writing, a perception their experiences in this class did little to change.

> I have to know what I'm writing about, and to help figure things out, maybe writing not a paper and paragraph, but just ideas down and piecing those together, that would help. But if you had to just go out and write something, that would definitely hinder (Blevins, interview #5).

> [Writing] takes up a lot of time. Not just one paragraph would, but just sitting down, having to write out a paper and make it look nice. You need to take the time. If I'd had the time I would have typed [the "volvox paragraph"]. Some teachers, if you type it, it gives you the extra push to get to the next grade level (Elder, interview #1).

The students themselves indicated that they weren't writing much, and three of the four interviewees regretted it

> I would like to be doing, like the volvox. It does take up a lot of time to put in the research, but it's either that or not learn it, so I'd rather do more writing than we are (Elder, interview #3).

Husband's class, like most students, believed before the semester began that writing would help them learn better and were generally comfortable with the idea of using writing in their class. The professor, faced with a large amount of material to cover and seeing writing primarily as a means of proving, rather than creating knowledge, used writing mainly to test their learning in the form of lab reports, essay questions and research papers. Both professor and students saw this as a successful use of writing, however, the students indicated that they would have found more "true" writing to learn helpful as well.

Chapter Five

"The Students were Knocked Harder off the Horse than I Thought": Richard Koch's William Faulkner Seminar

The enrollment in Koch's Faulkner Seminar, a 400 level English class, varied from 14 students at the beginning of the semester to 7 students at the end. Students were juniors and seniors, all English majors. The course met once a week, for 3 hours. Writing assignments--the most given to any studied group--included:

1 Page-on-a-page: a one-page analysis of or reaction to one page of the novel, assigned roughly bi-weekly.

2 Four page papers: critical opinion papers dealing with some aspect of the novel, assigned roughly bi-weekly. (For a given class session, students were to write either a four page paper or a page-on-a-page).

3 Faulkner parody: a brief writing in the (exaggerated) style of William Faulkner.

4 Written responses to four-page papers: students read their four-page papers aloud, classmates then wrote a response to the content of the paper as preparation for discussion.

5 Reflective journal: an ongoing commentary (of varying structure) on the novels.

6 Index: a page-specific record of the novel's plot or

some theme, character, issue or concern.

7 "State of the Class" writing: students' mid-semester evaluation of the class and themselves.

8 12 - 20 page paper: a formal critical research paper, with a revision.

9 Various other short, informal take-home writing assignments including "Essay Puzzle of Absolom, Absolom!" and "Light in August Believing/Remembering Analysis.

10 Various other short, in-class free writings.

Although some of these writings ultimately became quite formal and polished, most were "writing to learn," expressive and exploratory, and all began that way. Prewriting and revision were discussed and encouraged (sometimes required) and more formal writings often grew out of earlier and more expressive ones.

Teacher's attitude toward writing to learn

Although Dick Koch regularly taught writing, and used writing in all his classes, he was eager to participate in this study and to try new techniques with his class. Already knowledgeable about writing across the curriculum, he said he was not concerned about writing taking up too much class time, or whether the results would be worth the effort, but about how hard it might be to change his way of teaching even slightly.

> I don't think I have much of any concern about using writing across the curriculum and its value. If I have a concern about the whole experiment that I'm involved in, I think it's that it's hard for a teacher to change the way they teach. I think we tend to not be aware of how rigid our sort of teaching personality tends to be, so my apprehension is that I'm not going to change the amounts and kinds of writing as much as I wish I would (interview #2).

Perhaps to forestall this possibility, he planned to--and did--incorporate a wide variety of writing to learn techniques. In fact, most of the techniques mentioned on the introductory sheet (see appendix A) piqued his interest and, as he reviewed the writings he hoped to use, he decided that most of them involved some sort of writing-to-learn component.

Characteristics of the class

He described the course as one which would be difficult, but said that the students who would be in it should be up to the challenge. Students would need to

> read and understand, recall, do some rudimentary classifying. They'll be doing a little bit of cause-effect analysis. They'll do some evaluating and assessing, establish priorities using pretty informal language. They won't need to do anything that anybody just off the streets couldn't do with their brains. There are certain kinds of knowledge and perspectives that they'll have to build on (interview #1).

His specific goals included making the students "comfortable with using literature to explore personal ethical concerns in their life,"(interview #2) and preparing them to deal with literature as art, to be able to look at a piece from

several perspectives. He hoped to use some of the more informal writings to help achieve these goals as well as to help lay a foundation for more formal writing that would come later on.

Teacher's response to writing to learn

Generally, for Koch, writing accomplished these objectives, as well as others he had not explicitly mentioned. The indexes gave focus both to class discussions and longer papers, state-of-the-class statements provided for feedback and contributed to students' self-awareness, and the four-page-papers and especially the written responses to them made for lively, fluent discussion, helping students focus their ideas and feel more confident about speaking out.

> When they've written it down, you know everybody is prepared to speak and that is never the case if they haven't written it down. There is always some people who have no idea or comment. And when they have written it down, they are ready to think about what other people say in a different way....If what so-and-so said was in the same ball park, they knew to respond enthusiastically and if what so-and-so said was on a different topic, they knew their own priorities were a little different. And they also knew by what they praised, if they were set in opposition to a suggestion or if their praise was compatible with a suggestion, so I think there is a highly complicated thing that you gain by having them write like that (interview #5).

He also thought the students enjoyed the writing, seeing it as a normal thing to do.

There were, however, some glaring difficulties with

this class. The subject matter was demanding and two books initially included in the syllabus were dropped for lack of time. Half the students dropped the class at mid-semester because it was harder than they thought it would be. Even after the first session, Koch concluded, the students seemed daunted.

> The students were knocked harder off the horse than I thought they would be by the theoretical lecture. I felt like I sensed a blow. I'm not worried about it, but they let themselves be more discouraged then I thought they would be (interview #2).

He saw problems with the writings, too. Indexing, journals and four-page papers were essentially successful, although students were not as thorough as they might have been, but--early in the class, at any rate--the in-class writings did not work well. Koch blamed this partly on not explaining these writings thoroughly, partly on their not being used well.

> The in-class writings are not working as well as I would have thought, and I think it's a real simple principle: if you ask people to expend effort and then don't exploit the fruits of that effort, they tend to not expend very much effort. And so I don't think the in-class writings have been taken very seriously (interview #4).

Solving this problem was not simple. Repeated explanations of the purposes of in-class writing helped, but merely producing writing raised a second concern: Koch felt he had to guard against becoming "a slave to sharing." Because he required and received a lot of writing from his students, balancing that writing became a primary concern. "It

becomes a question of 'How do I harness all of these productive things so that they can be maximized?'" (interview #3).

Part of this quandary was simply the difficulty of fitting everything he wanted to do into a limited amount of time. The students, too had trouble getting everything done--or giving the time to get everything done--and as a result became frustrated.

> I think they probably harbored, they felt some frustration in how much there was to do, but I think their perception was that I was giving them too much work. Not that writing was the wrong thing to do or not that writing was interfering with their experience (interview #6).

Out of these difficulties, Koch arrived at some conclusions about necessities when teaching with writing. As previously mentioned, he thought it important that the writing produced be used. He also said that it was important to assign a wide variety of writings and allow those writings to interact with each other--journal writings turning into papers, for example. A teacher using writing to learn needed to be committed to the undertaking, to see it through to the end, not give up if things didn't work immediately. Finally, like Dr. Craft, Koch thought that it was important to balance writing to learn with other teaching/learning techniques.

> Writing to learn is best balanced by certain other techniques: discussion, clearly. Writing and not discussing would be a frustrating environment to be in, so we have a lot of discussion. I think the mini-lesson or mini-lecture is a very good

> balancing technique. It helps me to feel like I've made a teacher-like contribution if I have a particular thing that I have studied or paper of my own I'm presenting or the equivalent of a lecture. For me, the writing to learn helps to characterize what the role of the lecture should be....I feel good about the interaction between other methods and the writing methods in this course (interview #6).

Although writing caused some problems that would not otherwise have arisen, Koch wanted to make it very clear that the class would have been even less successful (for both him and the students) without it. Students' writings served as a diagnostic device for him, helping with class management, letting him know how much his students knew and understood and what they were frustrated about. Furthermore, because it was such a difficult course for the students, Koch said,

> I think there probably would be an incredible difference if you taught the course without using the writing that I used. Not that the writings I used were perfect, but there were quite a few different types of writing and quite a few different pieces of writing that changed a little bit as we went through the course, and so I think it would have been far less effective if the course had been taught without varied and numerous writings (interview #6).

Teaching style

Dr. Koch's interest in and commitment to writing and writing to learn was conveyed clearly through his introduction to the course. Although his syllabus--essentially a calendar--made no mention of writing to learn or his involvement in this project, he did enthusiastically

explain writing to learn and the project to his students, saying, "We're going to help Tracy. She is trying to help us make changes on campus, to get others to do these things." He spent more time than any other professor in this study talking about writing, stating his strong commitment to writing across the curriculum, justifying it, explaining its historical importance and referring to research on writing and cognition.

The class itself was a very friendly and open one with each other, the professor, and me. (More students volunteered to be interviewed in this class than any other--7 out of 14 at the initial meeting). Almost all students knew each other and two-thirds had taken a class from Dr. Koch before. Very aware of room dynamics, they were vocally unhappy with the room class was originally scheduled to meet in ("we can't see each other," one student complained) so class moved to a more amenable location where students and teacher sat at tables arranged in a circle. Because students knew each other, they talked to each other a good deal before class and during breaks; most of the talk concerned Faulkner, and often included the professor. In a typical class session, students had their journals and/or other writings out before class began and talked about their reading as the professor outlined his plan for the class session on the board. The first part of class was usually spent discussing the students' general reactions to the

week's reading and questions they had, then students read short papers to each other in small groups. The small groups discussed the papers, after which volunteers read their papers to the whole class, students wrote responses, then held discussion based on those responses. After a break, the professor gave a "mini-lecture" which was usually punctuated by frequent questions from students (which the professor invited and encouraged). Class concluded with further discussion. Usually students did two to four in-class writings (including their responses) and two or three at-home writings (including journals and page-on-a-page or four-page papers). Whenever they wrote during class the professor wrote with them; he also produced all "at-home" assignments except the twenty-page paper. Students always began writing without hesitation, wrote quickly, and often had to be urged to stop. Compared to the classes previously discussed, these students were by far the most comfortable writers.

As previously mentioned, this class had a very strong sense of community which the professor took care to cultivate. He spent time at the beginning of the semester repeating students' names and making sure that they knew each other. A few minutes at the beginning of each class session were devoted to taking about "what's new," discussion--small talk--<u>not</u> about Faulkner. And he always thanked people who read, making class, as one student said,

"a very safe place." He was always positive about their comments and their writing, praising their contributions when they read, and reassuring them that they could do new and unfamiliar assignments. Of the final papers, for example, he said, "I don't think this should be a tremendously difficult thing. I see it as an invitation to extend your argument [from a previous writing]." Even on shorter, informal writings, he told students that they shouldn't worry, that although an assignment might be difficult, they were capable. He was positive, as well, about using writing as a means to learn, once remarking after had done free-writings, "Isn't it interesting what becomes clear when you write a quick note? It is for me."

The professor helped extend this community beyond a group of people who liked each other to a group of scholars by always writing with the students, and sharing his own writing. He made the students collaborators in their own education, telling them "I'm not going to know everything. I hope we can be a team" at the beginning of the semester and by asking them to help each other on their final papers. "My idea," he said, "is that we'll do this as collaboratively as possible, not competitively." He made it clear that it was their responsibility to do the work, to see him if they had problems, and to help each other learn, telling them, for example, "I'm [assigning four-page papers] partly to make you into someone who can teach us."

Although they did not always keep up with the work, generally the students seemed to accept their responsibility as team-members. They helped solidify the class as a community; on their own initiative, a different student each week brought in snacks to share and, as mentioned, they were quite vocally unhappy with the first classroom. The students were also supportive of each other academically, encouraging classmates to read their papers, and sometimes asking for copies, readily sharing sources and ideas for the final paper. Discussions were very lively, with students willing to disagree with the professor and to speak directly to each other; class frequently ran over the allotted three hours before discussion concluded.

In addition to being "intentional" about making the class a supportive community, Koch was also very clear about why he ran class the way he did, why he gave certain assignments. Their index, he said, would confer power on them as readers, while jottings involved "trying to say what you want to say and when you've said it, you're done." Free-writings were primarily for their benefit and four page papers--which could come from journal entries--would help them delve more deeply into the books. For longer or at-home assignments, Koch usually provided handouts. Most writings received some sort of feedback--those that were read aloud in class he usually commented on orally, journal entries were given brief, supportive comments like "good

point," or "that's an interesting idea." Koch wrote brief, largely evaluative comments on indexes and page-on-a-page papers, and marginal questions, evaluative statements, suggestions and lengthy end comments on four- and twenty-page papers.

For the most part, the students responded well to the writing required of them. Although some occasionally did not do assignments, most indicated it was because there was too much reading--they had not finished the book and were unable to write rather than unwilling. As Koch had hoped, students did participate much more fully after they had written. Students who did not write were far less willing to participate even when they could have. Also interesting in this class was the students' awareness of their own writing processes. Often, before reading a paper, the author would explain how he or she came to write it, as well as other papers that fed into or might grow from that particular piece.

Student response to writing to learn

Although class appeared to go well, and Koch was essentially happy with his use of writing to learn, the students did not entirely agree. This group was by far the most positive about writing at the beginning of the semester, and the most committed to it; however, this particular class indicated, especially on their surveys, that there were some definite difficulties with it.

Table 4: Whole-class response--Koch's class

		Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3
	Total: Survey 1-14 Survey 2-10 Survey 3-7	Disagree strongly			Disagree moderately			Neither agree nor disagree			Agree moderately			Agree strongly		
Were the results of writing to learn worth the time invested?	Writing to learn keeps the course from covering as much material as possible	9	3	1	2	3	1	4	2	0	0	0	4	0	2	1
	Writing to learn takes time away from learning	0	5	0	3	1	4	2	2	3	0	0	0	0	2	0
	Because of writing to learn, I need to spend more time studying	2	0	0	7	3	2	4	1	1	1	3	3	0	3	1
	Writing to learn takes time away from better uses of studying	5	1	1	7	4	4	2	3	1	0	0	1	0	2	0
	This course requires too much writing	4	1	0	3	2	2	5	1	0	2	3	5	0	3	0
	This course requires too little writing	3	4	4	6	5	2	4	1	0	1	0	1	0	0	0
Did writing to learn improve learning?	Writing to learn helps me learn	0	0	0	0	0	0	1	3	3	5	5	1	8	2	3
	Because of writing to learn I need to "cram" less	1	1	0	3	2	1	2	2	4	6	3	2	2	1	0
	Writing to learn makes course information easier to remember	0	0	0	0	0	1	0	0	1	8	7	4	6	3	1
	Writing to learn makes course information harder to understand	6	2	2	8	7	4	0	0	1	0	0	0	0	1	0
Did writing to learn increase student involvement?	Writing to learn does not make the course information more personally relevant	5	2	2	8	5	2	0	1	2	1	1	1	0	1	0
	Writing to learn makes the course information more interesting	0	1	0	0	0	1	3	5	1	7	2	4	4	2	1
	Writing to learn helps me create and develop my own ideas	0	0	0	0	1	1	1	0	0	3	6	4	10	3	2
	Writing to learn does not show me that my ideas have merit	3	1	1	8	7	5	2	1	0	1	1	1	0	0	0
The effect of writing to learn on the student/teacher relationship:	I feel the professor knows more about me as a person because of writing to learn	0	1	0	0	1	1	2	2	1	8	2	2	4	4	3
	I feel I do not know the professor as a person better because of his/her reading my writing	2	4	3	4	1	1	5	3	2	3	1	1	0	1	0
The effect of writing to learn on the student's attitude toward writing in general:	I will not do writing to learn on my own	7	1	2	2	2	2	3	0	0	1	4	3	1	3	0
	When I have to figure things out, writing will:	help a lot			help somewhat			neither help nor hinder			hinder somewhat			hinder a lot		
		10	1	3	3	5	1	1	3	2	0	1	1	0	0	0
	When you have to do a writing assignment do you feel:	very apprehensive			somewhat apprehensive			neither apprehensive nor confident			somewhat confident			very confident		
		2	0	2	3	4	1	2	0	0	6	3	1	3	2	1
	Approximately how much non-assigned writing do you do per week?	none			1-3 pages			4-6 pages			7-9 pages			10+ pages		
		3	2	2	6	5	2	4	0	1	2	1	0	1	2	2
Students' self-image as learner and writer:	Compared to other students you know, as a learner, would you say you are:	a better learner than most			a better learner than some			about average			a worse learner than some			a worse learner than most		
		4	3	2	5	3	2	5	3	2	0	1	1	0	0	0
	Compared to other students you know, as a writer, would you say you are:	more effective than most			more effective than some			about average			less effective than some			less effective than most		
		7	3	4	3	3	2	4	4	0	0	0	1	0	0	0

Were the results of writing to learn worth the time invested?

This class had the highest initial disagreement of any groups with "writing to learn will keep this course from covering as much material as possible." This declined greatly over the semester until, on the third survey, Koch's class had by far the highest agreement with this statement of any group. They also indicated high initial disagreement with "writing to learn takes time from learning," "because of writing to learn I need to spend more time studying," and "writing to learn takes time from better ways of learning." In each case, disagreement declined over the semester, particularly on survey 2. A significant portion of students end up indicating that they do need to spend more time studying because of the amount of writing they did. Of course, as one student commented in an interview, that was not necessarily a bad thing; in this class, to a great extent, writing was studying. Koch's students initially expected the class would require neither too much nor too little writing; sentiment by the end of the semester had swung to the belief that too much, and certainly not too little, writing was required. Again, as an interviewed student explained, the fact that this course alone required a lot of writing would not necessarily be a problem; however, all students in the course were English majors doing a good deal of writing for all their courses.

Koch's students' initial predictions were more favorable to writing to learn than their later attitudes. They did not expect too much writing would be required, but indicated that it was; they expected the results of writing to learn to be worth the time, but ended up indicating that was not necessarily the case.

Did students perceive writing to learn as improving learning?

Koch's students also began the semester anticipating that writing to learn would definitely help them learn--over 90% initially agreed with that statement, 100% expected writing would make information easier to remember and <u>not</u> harder to understand and theirs was the highest first survey agreement that writing to learn would make it possible to cram less.

Unfortunately, again these high expectations were not met: the percent agreeing that they needed to cram less halved, indications that writing to learn make information easier to remember and understand dropped by 10 to 20% and the percentage of the class agreeing that writing to learn helped them learn dropped by about 40%. It should be noted that most movement is to "neither agree nor disagree" and that final survey responses are still, in most cases, among the more favorable. This class of writers had perhaps unrealistically high expectations of writing to learn--or

unrealistically low expectations of the difficulty of the subject matter.

Did writing to learn increase student involvement with the topic or the class?

Koch's students also had high initial expectations of writing to learn in this area. Unlike the previous two categories, these expectations were, for the most part, met or nearly met.

Agreement remained nearly constant (decreasing slightly, around 90%) that writing helped them create and develop their own ideas, and disagreement did essentially the same (increasing slightly, around 80%) to "writing to learn does not show me that my ideas have merit." Disagreement to "writing to learn does not make course information more personally relevant" decreased, perhaps because the journal was not a personal one and because assignments became progressively more formal and analytical. Over the course of the semester, agreement with "writing to learn makes course information more interesting" was higher than most groups, but took a sharp drop in survey 2, possibly reflecting the discontentment of the students who eventually dropped the course.

What effect did writing to learn have on the student-teacher relationship?

These students had, overall, the best reciprocal

teacher-student relationship of any group. Their initial expectation that writing would allow the professor to know more about them were the highest of any group and, while they were not met, their third survey level of agreement with question 21 was the second highest of the classes surveyed.

As with most other groups, initial expectations that writing would allow the student to know the professor better were not nearly as high. In this class they were exceeded, however, on subsequent surveys. In fact, nearly 60% of Koch's students disagreed with "I do not know the professor better because of his/her reading my writing," the most favorable response of any class. That Koch wrote, too, probably contributed to this attitude.

What effect does writing to learn have on students' attitude toward and practice of writing in general?

Koch's class did begin the semester with probably the best attitude and practice of writing. Very few students indicated that they would not do writing to learn on their own, a large percentage said it helped them figure things out, the largest percentage of any class felt confident about writing, and this class did more non-assigned writing than the other classes.

The passing of the semester brought some significant changes; in several instances, this possibly over-loaded

class finished with the poorest attitude. Koch's class continued doing more non-assigned writing than other classes, but the number of students who indicated they would not do writing to learn on their own rose sharply and although it dropped considerably on survey 3, percentages still remained higher than any other class's. The percentage of students indicating that writing helped them figure things out also dropped, as did their confidence level, especially when facing the 20-page paper. Although most of these students began the course interested in writing--the subject matter--and ended the semester more committed to writing than many other students, it seems likely that the heavy workload wore down their enthusiasm.

Interviewed students' responses

Interviewed students, like their surveyed classmates (indeed, being the majority of those surveyed) began and remained supportive of writing in general and writing to learn specifically, but felt pressured and overworked as the semester progressed. They entered class with a good deal of experience writing and considered themselves knowledgeable about and interested in the writing process. They were also quite positive about the class and the way it was run. They appreciated that the professor shared his writing with them, enjoyed hearing each others' papers, and were glad to have

the option of not sharing their writing if they did not want to. They felt safe expressing their opinions.

> I like the response papers because of the real freedom there to say what you want without being judged. And I feel I can say whatever I want without being judged (Miller, interview #1).

In addition to providing an outlet for opinions, they thought writing also helped shape their opinions, making them more aware of their own ideas and helping "straighten them out." It made both their ideas and the subject easier to understand and made the course information more personal, providing greater awareness of their personal response to the reading.

> You get a more personal idea of how things that you've read or talked about or learn apply to you individually, your emotional response. And I think you learn a lot more about how you feel about something. And I think you can understand it better (Jones, interview #5).

They thought writing helped them write better and agreed with Koch that

> for the teacher, it gives a lot more insight on the students and the way the student's mind works, majority wise. And if they have some off-the-wall things, because you can say off-the-wall things in writing that you can't say in class because of peer pressure (Miller, interview #4).

Most interviewees thought that the journal was helpful, aiding them in understanding the books and writing their papers, as were the four-page papers which "made you think" and occasional in-class free-writings which helped them clarify their ideas. Their responses were less homogenous, however, to reaction papers and indexes. Most students

freely admitted that they hated indexing, but most also conceded that it did help discussion and was a great boon when they wrote papers.

> I found something interesting. I read Light in August over spring break, so I didn't really have a chance to index, and that was one of the books I had to write a four-page paper on, and it was harder to go back and find the quotes. I had a general idea of chapters, which chapter I wanted to look at the book in, but when you're looking at a twenty page chapter, it's hard to find exactly what you're looking for. I now see the purpose of it. I still don't like to do it. It's still hateful (Kruse, interview #3).

Reaction papers were helpful both to the person who wrote the reaction, providing a focus, and to the person who read a paper, but some students chafed under the time constraints of having to write immediately after hearing the paper, saying that they needed more time to think before writing.

Students saw larger problems, too, generally the same ones Koch identified. Several students became upset with classmates who did not keep up on their work and wished Koch would make them more aware of their responsibility to the class.

> One of the things I felt was real helpful was when papers were presented, and if no one had papers to present, or only partial papers--that was important in that class and whenever it didn't happen it felt like something was missing and I felt cheated....If it's going to be a major part of the class then everybody needs to know that it's going to be so that they come in prepared....There were time when I felt like Dr. Koch should have said, "Look, you haven't read the book, you haven't done the paper, just leave, you aren't part of us." They take away from class. They take class time--my time (Shaw, interview #4).

Some students were anxious about the long paper, having never written papers of that length before, or simply preferring more "creative" writing to research, and all students said that it was quite hard to keep up with the course work; they felt rushed, overburdened, burned out. However, all interviewees also said that the overwork problem was with the amount of reading--not writing--assigned.

> Writing was a big help. This was probably the most difficult course I've had in my four years. I know I wouldn't have made it through without the writing (Kruse, interview #4).

Problems with writing to learn

The interviewed students did offer some general precautions for teachers wanting to use writing to learn. They thought the writing in class would have been more interesting if the some of the techniques were changed partway through the semester--things got too predictable and, as the course drew to an end and they began focusing on their long paper, students resented writings that did not seem to them to have direct benefits. "I am getting real stubborn about the writing I do in class," Kay Miller said near the end of the semester. "I'm refusing to do free writes--not openly....The little stuff has gotten smaller but I'm putting more effort into the big stuff." Interviewees also mentioned that instructors need to provide good, immediate feedback (which Koch did, but some of their

other professors did not) and have some balance--provide time for talk as well as writing so that people who were primarily oral would not be penalized. Overwhelmingly, though, they most cautioned instructors to beware of overloading their students. Writing was a good thing that could seem very bad

> if they overwhelm you with writing to the point that you're just so saturated you don't have the time or energy to do it. And sometimes that happens even with Dr. Koch, where you have too much writing. And I think if you have to sacrifice quality for quantity, you're not doing a very good job, either (Shaw, interview #4).

Both professor and students in this course agreed on many things about writing--that it helped learning, that short pieces could grow into long pieces, that it helped their interaction. And the professor's practice paralleled his attitude about writing to learn: he thought it was a good and helpful undertaking and as a result, his students wrote to learn a good deal. However, the professor's enthusiasm in a receptive environment may have gotten away with him. Students ended up feeling overwhelmed and overworked and, although those who remained in the class defended writing to the end, there seems to have just been too much to do in too little time for this class and the writing done in it to have lived up to its students' initially very high expectations of it.

Chapter Six

"I Think Most of Us Would Agree in Principle it's a Good Idea": Michael McGrath's East Asian Civilization II Class.

This course, a 100 level course contained between 29 (beginning of the semester) and 21 (end of semester) students, freshmen through seniors. Few of these were history majors; most took the class to fill a requirement. For a student to succeed in his class, McGrath said,

> some of it is just memorizing stuff. Two of the things they have to deal with is, learn how to explain things, work backwards from events to their explanations. Another thing is learn how to connect things in long chronological sequences. One of the other things I try to do is give them a sense of what Chineseness is, what Japaneseness is. That's the hardest thing for them to deal with, but basically that's what I want them to come away with more than anything else (interview #1).

McGrath required a relatively narrow variety of writings:[13]

1 Reading notes: unstructured notes students took on their assigned reading.

2 Two research papers and a revision of each (revision required for the first paper, optional for the second).

Although neither of these were specifically assigned as expressive writing, students did use the notes to relate the

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[13]McGrath also used several essay questions on each test. However, as he routinely used essay questions, (in contrast to Husband's class) neither McGrath nor his students considered essay questions writing to learn.

course material to their own experiences, and often asked questions and explored ideas in them.

Professor attitude

Michael McGrath was an eager participant in this study. He had heard about and experimented a little with writing to learn previously and believed it related to other concerns he had about students and their learning.

> It just fits in with a lot of things that have concerned a whole bunch of us...we need to realize that some of the students don't know how to do it. Some of it is just clueing the students in on what you think is necessary that they learn (interview #2).

He began the semester eager to try this new technique, partly hoping to find a better way of handing term papers. However, he was less concerned with the way they were written than Rothenbush, for example, and more concerned with managing his own workload. "I've also been thinking about doing a term paper," he said, "which means that everybody gets jammed up at the end" (interview #1). In addition to working on students' writing skills, however, he also hoped to use writing specifically to improve their learning and had previously

> toyed with the idea of having students have a one page summary of what they've read and give it to me. I don't read it or grade it, just see that they had [done it]. My suspicion was that it might improve the quality of the discussions (interview #1).

While McGrath was very open to and interested in several

other writing-to-learn possibilities--role-playing papers, admit slips, journals, free-writings--he elected to use a relatively small range of writings, primarily because, he said, "I'm not used to using class time for anything other than discussion. That to me is hard: to figure how to balance it" (interview #1). Successful balancing, he concluded, would result from "being more intentional" about working writing into class. It was important to him to learn about techniques that students could use to write better within the context of his course; he was not a writing teacher, did not want to pretend to be one, nor did he want to weaken his class by overloading himself and his students. Although he asked for a lot of suggestions, he placed this semester in a larger context, planning to implement other techniques later

> I know that the way I'm going to organize courses, they're changed. I will think about my courses differently from now on, and part of it is that I've never put in enough time for some of these things, and it's just a matter of being more aware of them so that when I do plan courses [I fit them in], so that's one thing that's going to happen (interview #6).

For the writings that he did assign, it was important to him that he be clear to his students about why they were assigned, telling his students that reading notes would help them learn better than underlining because with underlining "there's no processing, you'd have to read it over again anyway," and that they would be helpful for reviewing.

The required reading notes were probably the writing

technique which was newest and strangest to McGrath; he had assigned papers before, and was aware of his own writing and revision process. He gave a fairly open assignment for reading notes: "I told the students that I wanted them to take notes of their reading to get prepared for class, and they'd be useful eventually for reviewing (interview #2). Reading notes were "eyeballed"--that is, students held up their notes for the professor to affirm that they had them--but not collected or graded. McGrath told his students that if there were problems with students not taking the notes, then he would begin to collect them. Although not all students took notes all the time, enough did that he did not feel it necessary to collect and read them.

> I just see that what they're showing me is what they're supposed to be doing. So far nobody has tried to sneak. And some people have said to me, "no, I didn't do it." I knew that I just didn't have the stamina to read and comment on them, and I know that certainly could be more helpful, but I just couldn't handle it (interview #4).

Even uncollected, McGrath found the reading notes very helpful. They stimulated class discussion, just as he had hoped, throughout the semester.

> The quality of the discussion and the amount that they were prepared was so obviously better than any other time, and in many cases these were students who probably would have remained painfully silent or just silent because they felt they had nothing to say (interview #2).

Because the larger class was broken down into smaller groups for discussion, and discussion was markedly better in all groups, he did not think "it's just the people I have here,

but the fact that they are doing those notes" (interview #4).

Assigning papers was not something new to Dr. McGrath. he was already aware of the unusual reader/writer relationship when students wrote for teachers, and tried to lessen it by having his students select topics that would "teach me something, too." He was very aware of his own writing process and sometimes showed students his own drafts to give them an idea of how paper-writing happened. He gave clear verbal assignments and provided a lengthy handout on how to do research papers which set out requirements and gave some explanation of the rationale behind them. These papers, he explained both orally and in writing, were not just busy work.

> Writing a history paper is not just a hurdle that I have stuck in the course to make work for you. When you research and write a history paper you are doing two things. First, you are practicing the essential skills of researching, thinking, organizing, problem solving, and writing. Secondly, you are learning something about Chinese and Japanese history and culture.

He had not, however, tried allowing his students to revise although it appealed to him as

> pedagogically a wonderful thing because what we need in order to have students do to learn is to practice. And writing, to have them just write it once and then grade it as if that were the ultimate product in, in fact, not what we do as professionals (interview #5).

Before assigning revisions, he asked me thoughtful, informed questions ranging from how to help students retain

creativity in writing research papers and effective ways to respond, to the most effective sorts of comments to make and whether retyping was necessary. After being reassured that he already responded to papers well, and deciding that retyping was unnecessary, McGrath found that revisions, too, were a success. McGrath said he saw improved organization, grammar, spelling, and proofreading. He was also pleased that students talked to him more about their papers between draft and revision.

> A couple students have come back to me to talk about what to do after they've read my comments. That itself is more positive than previous. I've always had some, but I've had more [this time] come back to me asking about their papers (interview #5).

Teacher's response to writing to learn

Although McGrath did not find any shortcomings with the writings he had assigned, he did identify one need that came along with using writing to learn--the need for support, for someone to suggest new ideas, motivate him to actually try them, not just consider them, and then act as a sounding board as he implemented new techniques.

> I never would have thought of some of these things until you suggested this collaboration, so some of [what teachers wanting to implement writing to learn need] is just putting it into our consciousnesses....A lot if it is, "well, how can I incorporate this, how do I set it up? I think most of us would agree in principle it's a good idea, but unless we know how to do it, it'll never get done in our courses. So that's probably the most important thing, to get to the rest of us in the faculty, is tell us how to use it (interview

#5).

In short, Michael McGrath thought writing to learn was a good idea, and was very eager to use it, within viable constraints--he wanted it to work but did not want to overburden himself or his students.

Teaching style

Dr. McGrath introduced the writing to learn project to his class via both remarks and information in his syllabus. Both of these were quite positive, emphasizing the cooperation between himself and me, and anticipated benefits for both student and teacher. In his syllabus he mentioned that the reading notes were being tried to "encourage productive discussion" and that he hoped to occasionally use free-writing summaries "to help [students] focus [their] attention and memory on the topic" (he ultimately decided not to use this technique this semester, but planned to use it in subsequent classes). To his class, he said "I think [this project] is going to be very interesting [and] useful for you and for me."

McGrath also emphasized cooperation between himself and students in speaking about his participation requirements. Students were graded based on the number of remarks they made and were "allowed" two "stupid" remarks for every "good" one. "I'm interested in what you learn," he told them, and added that it was their responsibility "to be

awake, do the work, ask me questions. I'm always willing to talk to you." Aware that he had a tendency to get carried away with his lecture ("because I'm so interested in it") he urged students to interrupt him with remarks and questions. Although students were very hesitant to interrupt him at first, by the end of the semester, about one fourth of each class period was spent in question-and-answer and discussion sessions were entirely given to it.

His class met, at first, in a very large lecture hall, where students had to be coaxed down from the upper tiers. Later, he moved to a medium sized classroom where students sat in closer rows of chairs, but still arranged themselves in a horseshoe, leaving one or two empty seats between them and the front-center of the room. The professor usually stood--or more often paced--in the front of the room, in front of a table, making a good deal of eye contact with his students who, in turn, were attentive--far more attentive than Rothenbush's class. Although class was not unusually large, like Rothenbush's students, these students did not talk to each other much either before or during class--there was not the strong sense of community found in Craft's or Husband's classes, probably because this was an introductory-level course.

As part of his introduction to the class, McGrath talked about why he was interested in Chinese and Japanese history and throughout the semester, he was very

enthusiastic about his subject; clearly (as was the case for all professors in this project) he enjoyed his discipline and enjoyed sharing it with others. This delight in his subject continued throughout the semester and he made obvious efforts to convey the reasons behind this interest to his students, delivering the information in an informal, conversational style, sharing many of his own experiences in the orient and as a historian, and especially relating information about Japan and China in terms and analogies familiar to American students. Despite his spoken and syllabus emphasis on students' participation, most of each class period was spent with the professor lecturing from a general outline on the board and students listening, taking occasional notes. There was very little break in his lecturing, and he only rarely invited questions (usually at the beginning of the session) but when questions were asked he answered at length, giving the sense that answering a question to the student's satisfaction was as important as covering all points of the planned lecture.

Once a week, the class was broken into smaller groups (of about ten students) for "discussion sessions." Here was a little more give and take between professor and student, but course time still remained largely devoted to professor lecturing or answering questions at considerable length. Here, too the professor checked for reading notes which students referred to frequently during the session.

McGrath did not greatly change his teaching style in using writing to learn, nor did he use techniques that would change it drastically. Reading notes were used primarily in discussion groups, and that is where he saw the most improved participation. Revisions increased his workload slightly, but not greatly, and did not much change the way class was run. Whereas Rothenbush, for example (as will be discussed in the next chapter), seemed to try to re-shape her class as it went to fit the writing to learn techniques she wanted to try, McGrath selected and used only a couple writing to learn techniques that essentially fit his class the way it already was, intending to try other techniques sometime in the future.

Student response to writing to learn

Student response to McGrath's class, both in general and concerning writing to learn was quite good--among the best of any surveyed group. Specific survey results follow:

Table 5: Whole-class response--McGrath's class

		Total: Survey 1: 29 Survey 2: 21 Survey 3: 23			Disagree strongly			Disagree moderately			Neither agree nor disagree			Agree moderately			Agree strongly		
			Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3
Were the results of writing to learn worth the time invested?	Writing to learn keeps the course from covering as much material as possible		3	4	5	8	10	10	7	4	4	10	1	2	1	0	0		
	Writing to learn takes time away from learning		3	4	2	19	14	14	5	3	4	2	0	1	0	0	0		
	Because of writing to learn, I need to spend more time studying		1	3	4	7	10	8	10	5	5	11	3	4	0	0	0		
	Writing to learn takes time away from better ways of studying		1	3	2	6	8	16	19	8	3	3	2	0	0	0	0		
	This course requires too much writing		1	3	2	7	7	9	11	7	7	9	3	3	1	1	0		
	This course requires too little writing		3	3	3	14	10	12	12	7	5	0	1	1	0	0	0		
Did writing to learn improve learning?	Writing to learn helps me learn		0	0	0	0	0	0	1	0	1	23	16	18	5	5	2		
	Because of writing to learn I need to "cram" less		0	0	0	2	2	4	11	6	6	16	13	18	0	0	1		
	Writing to learn makes course information easier to remember		0	0	0	1	0	1	1	2	2	22	14	18	5	5	2		
	Writing to learn makes course information harder to understand		4	4	6	18	10	14	5	5	1	0	0	0	0	0	0		
Did writing to learn increase student involvement?	Writing to learn does not make the course information more personally relevant		2	4	2	13	8	9	10	7	8	4	2	2	0	0	0		
	Writing to learn makes the course information more interesting		0	0	0	3	0	0	8	4	7	16	15	16	2	2	0		
	Writing to learn helps me create and develop my own ideas		0	0	0	1	0	2	2	7	6	21	9	10	5	5	3		
	Writing to learn does not show me that my ideas have merit		3	2	1	10	13	11	12	5	8	3	1	1	1	0	0		
The effect of writing to learn on the student/teacher relationship:	I feel the professor knows more about me as a person because of writing to learn		0	1	0	1	4	2	9	9	13	15	7	5	4	0	1		
	I feel I do not know the professor as a person better because of his/her reading my writing		2	1	1	9	9	4	14	6	13	4	5	3	0	0	0		
The effect of writing to learn on the student's attitude toward writing in general.	I will not do writing to learn on my own		3	4	1	13	5	12	5	3	3	7	8	5	0	1	0		
	When I have to figure things out, writing will:		Help a lot 7	6	4	help somewhat 15	12	12	neither help nor hinder 6	3	5	hinder somewhat 1	0	0	hinder a lot 0	0	0		
	When assigning to do a writing assignment do you feel:		Very apprehensive 1	0	1	somewhat apprehensive 15	9	4	neither apprehensive nor confident 3	4	3	somewhat confident 7	6	11	very confident 1	2	0		
	Approximately how much non-assigned writing do you do per week?		none 12	2	4	1-3 pages 10	13	93	4-6 pages 6	1	6	7-9 pages 0	2	1	10+ pages 1	3	1		
Students' self-image as learner and writer	Compared to other students you know, as a learner, would you say you are:		a better learner than most 4	4	2	a better learner than some 11	9	10	about average 14	8	8	a worse learner than some 1	0	1	a worse learner than most 0	0	0		
	Compared to other students you know, as a writer, would you say you are:		more effective than most 3	1	1	more effective than some 7	11	8	about average 11	7	9	less effective than some 8	2	2	less effective than most 0	0	1		

Were the results of writing to learn worth the time invested?

McGrath's class was initially one of the most skeptical of writing to learn and, at the end of the semester, arguably the most favorable.

The fewest students of any class initially disagreed that writing to learn would keep the course from covering as much material as possible; at the end of the semester only Craft's class had higher disagreement. These students disagreed in large numbers all semester that writing to learn took time away from learning and McGrath's was one of three classes whose third survey disagreement level was as high or higher than their initial predictions (the other two were Craft's and Husband's). Disagreement with "because of writing to learn I will need to spend more time studying" increased greatly over the initial prediction and dropped only very slightly when facing finals and disagreement increased dramatically over the semester to "writing to learn takes time from better ways of studying." McGrath's students did not feel the course required too much writing (here, again, disagreement increased over the semester); nor, however, did they feel it required too little. For McGrath's students, writing to learn--papers and reading notes--did not take an inordinate amount of time.

Did students perceive writing to learn as improving learning?

As far as learning, simply put, writing to learn worked better for McGrath's class than any other. Over 95% of his students agreed with "writing helps me learn" on all three surveys; 100% agreed on survey 2. This class's agreement rate with "because of writing to learn I need to cram less" was also higher--and like the response to "writing to learn helps me learn," less changing--than that of any other class. The same holds true for the large percentage agreeing that writing to learn made course information easier to remember, and the percentage disagreeing that writing to learn made information harder to understand increased over all with more than 95% disagreeing on survey 3. Clearly, McGrath's class perceived writing to learn as, quite simply and emphatically, helping them learn.

Did writing to learn increase student involvement with the topic or the class?

Only slightly more than 10% more of McGrath's students marked "disagree" over "neither agree nor disagree" to "writing to learn does not make course information more personally relevant." Nevertheless, of the six classes, they were third highest in disagreement at the end of the semester and one of the least changing respondents. After Koch's and Husband's classes, McGrath's students most initially expected writing to learn to make course information more interesting; their initial expectations

were exceeded significantly on survey 2 and slightly on survey 3. They also had high initial expectations that writing to learn would help them create and develop their own ideas. Like all classes except Craft's, their level of agreement dropped possibly because their writing was summative or research-oriented, particularly on the second survey. On the other hand, writing to learn exceeded their initial expectations as far as showing their ideas had merit, particularly on survey 2.

Concerning involvement with course materials, McGrath's class generally fell near the upper middle of classes surveyed. In most cases, writing to learn exceeded their initial, favorable expectations; however, response in this category was not as overwhelmingly favorable as in the latter, for example.

What effect did writing to learn have on the student-teacher relationship?

Like several other groups, McGrath's class had high initial expectations that writing to learn would allow the professor to know them better; these were not met, leaving this class in second lowest agreement with question 21. After comparatively high first and second survey disagreement that they did not know the professor better, the percentages disagreeing dropped on the third survey with most students marking "neither agree nor disagree." And,

like Husband's class, something apparently caused several students to feel less that they knew the professor between surveys 2 and 3. No doubt, this results from McGrath having read comparatively little of their writing. While he did make comments on their papers, they were primarily suggestions for revision, not the sort of relationship-building remarks one might make to a journal, and he did not collect or read reading notes at all.

What effect does writing to learn have on students' attitude toward and practice of writing in general?

McGrath's class's attitude and practice generally improved or, at least, remained the same. His students were second only to Koch's in initially indicating they would do writing to learn on their own and, after a large drop in agreement on the second survey, ended at their initial level. They also began largely indicating that writing helped them figure things out. These numbers increased on the second survey and returned to about 75% on the third. Finally, the amount of non-assigned writing students did increased overall, particularly on survey 2, and confidence increased while apprehension decreased. Increasing confidence and decreasing apprehension was a fairly rare phenomenon among the classes surveyed. It may have occurred in this class as a result of students being allowed to revise their papers.

Interviewed students' responses

Interviewed students were also very positive both about writing to learn and about the course and its professor. Two of the interviewees indicated that they had specifically taken this course because they were interested in the content and another took it because he liked the professor. "I think it's pretty interesting because of the person who teaches it. I'm just taking it basically because I was interested in taking him" (Urban, interview #1). They thought the professor taught well, that he was accessible and helpful to their understanding material or writing papers, and his emphasis of learning over memorizing was welcome.

> The way he teaches it, he doesn't teach it that you've got to memorize a ton of stuff and then write it down. He wants you to learn a few things out of it. It's good in that aspect, that you learn a little bit instead of trying to learn everything and you end up trying to memorize it and then forgetting it (Urban, interview #3).

They also appreciated the freedom of choice he offered, from whether or not to do reading notes or revisions at all, to being allowed to select their own paper topics.

> He lets you pick anything, basically, so you're going to learn. You're going to pick something that you might be interested in instead of him saying, "here's a list of topics, now you pick one," and you're really not interested in any of them, and when you go after them, you're just sitting there just doing it to do it instead of getting something out of the paper. And that's what a paper should be for, is to get something out of the paper, learn in more specific detail

about that topic (Urban, interview #3).

McGrath's students perceived him as being generally interested in writing to learn, but not at the cost of other priorities.

> I think he thinks it's important to know how to write. By assigning two papers in a class, most people only assign one paper, so by assigning two, he wants you to learn more in depth about something in that field. He's pretty lenient about what you wanted to write about, but to learn [with] more emphasis. And those [topics] I did learn more. And [he] also probably just wanted your writing up. Some concern. I don't think it was his top priority (Urban, interview #4).

In turn, the students saw writing to learn as primarily a tool to improve their learning of the content, with a few drawbacks. They said that the professor may have known them better had he read their notes and because of time constraints, some students did not take reading notes, or did not take them as often or as thoroughly as would have been best. When reading notes were taken, though, the students found them helpful. Two students indicated that they had taken similar notes on their own and probably would have done so in this class even if they weren't required, so being "forced" to take reading notes simply legitimized a learning technique they already used.

> When I first started here as a non-traditional student, I was pretty nervous, so every class I had, when I read I took notes. The second semester it was kind of "oh, that was so easy. I don't have to do that anymore." I haven't really done the reading notes as often as I should have. I know they helped me a lot. If I write something down, I can usually remember it....It was time consuming and I didn't think that I needed it and

I did. It helped a lot (Vierling, interview #1).

Other students, too, indicated that, while reading notes could be time consuming or tedious, they helped in three inter-connected ways. First, they forced students to keep up on their reading. Second, the notes made remembering information easier.

> For the discussion classes we have to write down notes on what we read. That helps me out because it forces me to remember the stuff I read. You've got to, when you read it, you don't just read it through. Instead of just reading, you got to stop and take notes. It reinforces what I read. I don't take a lot, it's something just to remember it better. By writing it down, it reinforces it (Urban, interview #1).

Remembering better made studying for tests easier, because the information was already familiar and this, in turn, resulted in better grades.

Interviewed students said that the research papers, like the reading notes, helped them remember their topics better. Whereas one might just memorize and forget for a test, even one with essay questions, doing a paper improved their retention. Shannon Tiller, who made it clear in her first interview that she did not like to write, said, "whenever I write a paper, when I write something down, I will always remember it if I've written it down. I'll say, 'Yeah, I remember that' because I wrote on that (interview #1). Papers also allowed students to learn and understand more about a topic--they could immerse themselves in an aspect of Chinese or Japanese culture that interested them.

> Now I've come to understand more some of the different aspects of China. You could take just one topic that you wanted to write on, and now that one topic I understand a lot more clearly than I would have if I hadn't written on it (Tiller, interview #2).

The chance to revise was an especially welcome addition to the paper requirement, especially when the decision whether to revise or not was the student's. For Gloria Vierling, a self-proclaimed perfectionist, revision gave her a chance to do a good job, the kind of job she'd like to always do, but didn't always have (or take) the time. Gary Urban appreciated the opportunity to learn from (and not be penalized for) mistakes.

> By revising the paper, you get back the first paper and see the mistakes, and the next time you write the paper you know. Whatever mistake I would make would be on my mind the next time. It made me more conscious about writing papers because I was able to correct the one I did. If you just get a paper back, you say "Oh, I just did this and this wrong," and you set it aside. You're not correcting the mistakes. By correcting mistakes you are re-emphasizing the right thing instead of the wrong thing (Urban, interview #4).

Tiller, being a little more pragmatic, was simply glad to improve her grade.

The writing to learn requirements in McGrath's class were limited and clear, and students responded well to them. They knew what was expected of them, why they were doing it, and saw definite worth in all the required writings.

Chapter Seven

"I Think I'll Remember a Little Bit More than not Having Done the Papers at all": Esther Rothenbush's Music Appreciation Class

Rothenbush's Music Appreciation was a 100 level music class, initial survey size 33, final survey size 29. Students were freshmen through seniors, most not music majors. Writing assignments encompassed a wide range of writings, some to demonstrate knowledge, some more expressive. Rothenbush did not assign pre-writing for papers, but did always allow and sometimes require revision of rough drafts. Specific assignments included:

1 Concert Journal: a journal containing students' reactions to concerts attended, other music they listened to, the class in general.

2 Essay questions on exams.

3 Pre-analysis paper: an informal paper on the student's reaction and response to a piece of music.

4 Analysis paper: a more formal paper analyzing a piece of music.

5 Comparison of readings on aesthetics paper: in which students were to include their own opinion.

6 Opinion/synthesis paper: students could use the same piece as for the pre-analysis paper, analyze it in depth, and synthesize the information they had learned

throughout the semester. They could also revise this paper if they chose.

7 In-class writings: included a self-evaluation of their second paper, a plan for their second paper, listing the visual images and emotions a particular piece evoked for later discussion, listing three terms they felt they knew, listing two or three terms they did not feel they knew.

Teacher attitude toward writing to learn

Esther Rothenbush initially approached me the semester before this study, because she was concerned about her students' writing and her handling of it, had heard about writing across the curriculum, and wanted to learn more. She, then, agreed readily to participating in this project the next semester, and the first concern she raised at our first meeting was, again, the quality of her students' writing. "Incorrectness" was especially vexing to her. As she explained,

> I'm not used to the idea of separating composing from correctness, partly as a result of my own training and partly because, as a musician, I don't allow myself or my students to play wrong notes the first time around. So I think I apply the same kind of thing with their writing. I don't ever allow them any other kind of writing style. I mean, I only have one writing style and so perhaps I'm making it harder for them because, see, I've always looked at writing as spelling and all that as one kind of habit (interview #1).

It was very important to her that her students were aware

"that there is such a thing as a scholarly writing style that is accepted and in fact required of college writing in all fields"(interview #6). To this end, she tried both lecturing to her students about exactly what she meant by formal writing, and having them write more informal, reaction-based papers, hoping that would help them separate their writing styles and give them a opportunity to "get out all the adjectives and emotional reaction" (interview #6). Writing to learn was, in this aspect, a limited success for her. Although students' papers were generally better than in the past, Rothenbush was still somewhat concerned that it

> maybe encouraged the practice of informal writing. It's not deadly at the 100 level course, and I would like to use the same approach in my upper level classes and be more strict about writing styles (interview #9).

Although she began with a very definite agenda and purpose for using writing in her class, Rothenbush was very open to using techniques geared specifically toward much more informal writing to learn; she assigned more different kinds of writing than any teacher (except Dr. Koch, who already had extensive experience with writing across the curriculum). She was always very open to new ideas and suggestions, asking for and experimenting with new techniques including various short writings, asking for class evaluations at mid-semester, conferencing with students on papers and having students work collaboratively:

> One thing I could do is play a piece for them in class and have them write a journal entry in class

> that is purely emotional response, and then have them break into small groups and discuss what they're written here. That would take some time, but I think it'll be worth it. And then they'd be able to see the distinction better. I think it might also justify to them having to write another paper of this nature because this time they also have to write it in formal style....That's not a bad idea, to use the resources that I've got in the class (interview #5).

Much of her interview time was spent asking about new techniques and ideas she could try and planning how she might incorporate them into this class.

Teacher reaction to writing to learn

Having tried many of these new ideas, Rothenbush saw found writing to learn to be largely beneficial in areas other than improving formal writing skills.

> I don't think that their writing improved vastly, but I got so much more enthusiasm and commitment on their part....So I guess if I did have another goal for my doing this with you, it would be to increase student involvement and their commitment, and that definitely happened in the final paper for the most part (interview #9).

She also thought writing increased student involvement with the course material and drew the class together more.

It also allowed her to "enter" the class. Like many teachers in this study, Rothenbush was very pleased with the extent to which writing to learn "let me into their heads more (interview #7). It showed her what students were confused about, let her know them a little better and focus her assignments accordingly as well as helping them get their questions about the class and material out. A self-

evaluation on one of their papers was, she indicated, surprisingly honest and showed her what each student had invested into writing the paper. In general, she said, "I love this undercurrent dialogue I'm having with them" (interview #5).

Personally, too, reading the students' writing, particularly their "admit slips" and journals, was good for Rothenbush's morale, allowing her to enjoy the class more than she had expected.

> What I got pleasantly surprising me [in the journals] was their own emotional warming up to the subject matter, their increasing confidence. In other words, a line graph of their attitude toward the course. I did get self evaluations. It's a boost to me, a boost in morale to know that they feel they're catching on (interview #6).

Nevertheless, Ms Rothenbush did encounter some difficulties using writing to learn, many of them centering around her wanting formal, "professional" papers and her students wanting to react in writing. This attitude discrepancy probably reflected each party's attitude toward the course and music in general.

> I have finally become conscious of this. I feel like I'm constantly feeling like [the students want me to] entertain them in this class. I don't think other teachers in other subject matters feel like they have to entertain. It's the entertainment business as far as [the student] are concerned and I have to keep fighting this because I don't treat my music students like this; we are professionals. This is what I'm hoping to flush out through [the final paper]. That we are raised listening to music while doing something else. Their attitude is not very attentive (interview #7).

Difficulties also arose because she was so willing and eager to try new techniques, to test out new ideas. Already feeling like she had more material than she could cover well in one semester, experimenting with new methods of teaching made her feel like she was cramming a lot into one course and having trouble coordinating, "juggling" everything. One of the biggest problems which also probably resulted from trying new things was being clear enough about what she was doing, what she expected from her students, and why. Throughout the semester, Rothenbush expressed concern that she was not articulating to her students what she wanted from them well enough. She was aware that her instructions were occasionally vague, especially those concerning their journals.

> I'm going to read their journals on Friday for the first time. The more vague I am, the more anxious they are. [Journal entries] could be about anything, but they're convinced there's a secret, a plot (interview #5).

Class characteristics

The students, too, found difficulties with the class. Most immediately because they had expected an easy, "blow off" class which Rothenbush was not going to provide. As a result, it was, in many ways, a difficult class to teach; students were often unresponsive. Class met in a very large practice room where students sat in rows of folding chairs--a physically difficult writing environment. Although enough

chairs would be set up before they got there to hold all the students, several would set up extra chairs so that they could sit in the back; the professor stood in the front, behind a lectern. Rothenbush usually played a piece of music on a record player as students came in, then outlined what she would cover that session on the black board. She used a textbook occasionally, but students did not always have it with them when needed. At the beginning of the semester and for a large part throughout it, the professor and students were separated both physically and in their idea of what the class should be.

Teaching style

Rothenbush herself was very positive and encouraging to her students. Given the wrong answer to a question, for example (the term she was looking for was "genre;" the student said, "style") she, nevertheless, returned a positive response: "You said style was a way of composing and that's exactly right." She, like the rest of the studied professors, gave the sense that she was a professional, competent and intensely interested in her field; she spoke of music with great enthusiasm. Her speaking style and soft voice, however, made her seem more hesitant and unsure than she really was, and in making assignments and handling students she often seemed torn between wanting to encourage student participation and

interaction and trying to cover all the material she felt necessary. She worked hard at raising the energy level of a quiet, sluggish 9:00 class, asking frequent questions, even asking for votes on correct answers or opinions when answers were not forthcoming. But she asked largely "fill-in-the-blank" questions, and didn't wait long for a response before providing an answer or elaborating at length on the one she got.

Although most students took notes while she lectured, they were not very attentive--talking, reading hidden magazines--and were very reluctant to respond (perhaps because of the large room and not knowing each other well). A student might whisper the answer to a question to another student, but not volunteer it out loud. Even when Rothenbush asked for a response based on a writing, students were unwilling to speak, and she did not pursue it.

There was a similar sense of separation--between professor and students, between intention and results--in her use of writing to learn techniques with the class. She made no mention of writing to learn in a very "formally" written syllabus (i.e.: "the student will..."); their entire introduction to it occurred orally on the first day of class. She used writing to learn sporadically, often when she felt the particular need for it or when she got a new idea that she wanted to try out, but did not always explain to her class what she was doing or why. For

example, students were unclear, even after they asked, what they were supposed to write in their journals, and after giving one in-class assignment to listen to a piece and write down their reactions and descriptions of what they heard, students were unclear whether they were to do the writing at that time or later, when they listened to the entire piece on their own time. As a result, most did not write when they should have. She assigned "admit slips" several times, and indicated in her interviews that they were helpful to her, but the students did not <u>see</u> her making use of them. She did not discuss trends with the class, and wrote short responses on only about half of them when handing them back. She also wrote very brief--but personable--responses to their journals. Although her students' writing was apparently helpful to her, she did not extensively share that it was helpful or use it as a means to establish a two-way dialogue.

Possibly because she had assigned papers regularly to previous classes, Rothenbush seemed more sure of what she wanted from them and of the best way to handle them. For example, she devoted class time specifically to lecturing about the difference between writing about an emotional response to music and doing an analytical paper and gave the students a lengthy written assignment sheet explaining what she wanted. And, although she wrote very short comments on papers and devoted most of her time to editing and

evaluation (in keeping, after all, with her purposes), she was very encouraging to her students about their papers, telling them, "I was impressed with how well you used the terms....I was interested by a lot of your observations."

Student response to writing to learn

Just as Rothenbush's success with writing to learn seemed mixed from her standpoint and from classroom observation, her students' responses to writing to learn were among the most mixed of any class.

Table 6: Whole-class response--Rothenbush's class

	Total: Survey 1=33, Survey 2=29, Survey 3=27	Disagree strongly			Disagree moderately			Neither agree nor disagree			Agree moderately			Agree strongly		
		Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3
Were the results of writing to learn worth the time invested?	Writing to learn keeps the course from covering as much material as possible	1	5	6	15	10	12	13	14	8	4	0	1	0	0	0
	Writing to learn takes time away from learning	3	0	2	16	13	17	12	13	7	1	3	0	1	0	1
	Because of writing to learn, I need to spend more time studying	2	1	0	14	17	13	7	5	9	8	6	5	2	0	0
	Writing to learn takes time away from better ways of studying	1	0	2	20	17	12	8	8	9	3	4	4	1	0	0
	This course requires too much writing	2	2	7	9	3	7	9	12	3	10	10	9	3	2	4
	This course requires too little writing	6	7	10	14	15	14	13	7	3	0	0	0	1	0	0
Did writing to learn improve learning?	Writing to learn helps me learn	1	2	1	1	4	1	5	7	6	24	16	17	2	0	2
	Because of writing to learn I need to "cram" less	2	2	2	7	12	6	5	6	11	18	9	8	1	0	0
	Writing to learn makes course information easier to remember	1	2	1	1	5	2	4	6	4	26	16	18	1	0	2
	Writing to learn makes course information harder to understand	7	1	3	22	19	17	4	9	6	0	0	1	0	0	0
Did writing to learn increase student involvement?	Writing to learn does not make the course information more personally relevant	3	1	2	13	7	10	8	9	4	9	9	8	1	3	3
	Writing to learn makes the course information more interesting	3	4	4	8	9	8	15	13	12	7	3	3	0	0	0
	Writing to learn helps me create and develop my own ideas	1	0	0	6	10	6	6	7	8	19	11	12	0	1	1
	Writing to learn does not show me that my ideas have merit	1	1	1	14	7	11	11	16	13	7	5	2	0	0	0
The effect of writing to learn on the student/teacher relationship:	I feel the professor knows more about me as a person because of writing to learn	1	1	1	7	5	7	8	8	5	16	14	14	1	1	0
	I feel I do not know the professor as a person better because of his/her reading my writing	1	0	0	11	6	6	12	9	6	9	12	13	0	2	2
The effect of writing to learn on the student's attitude toward writing in general:	I will not do writing to learn on my own	2	2	2	12	11	14	10	8	0	7	7	8	2	1	3
	When I have to figure things out, writing will:	Help a lot			help somewhat			neither help nor hinder			hinder somewhat			hinder a lot		
		7	2	1	24	15	21	2	12	5	0	0	0	0	0	0
	When you have to do a writing assignment do you feel:	very apprehensive			somewhat apprehensive			neither apprehensive nor confident			somewhat confident			very confident		
		2	0	2	13	8	8	6	7	3	10	10	11	2	4	3
	Approximately how much non-assigned writing do you do per week?	none			1-3 pages			4-6 pages			7-9 pages			10+ pages		
		11	8	8	18	16	16	2	5	3	0	0	0	2	0	0
Students' self-image as learner and writer:	Compared to other students you know, as a learner, would you say you are:	a better learner than most			a better learner than some			about average			a worse learner than some			a worse learner than most		
		6	9	10	17	12	8	9	8	8	1	0	1	0	0	0
	Compared to other students you know, as a writer, would you say you are:	more effective than most			more effective than some			about average			less effective than some			less effective than most		
		7	5	4	9	15	12	15	7	10	2	3	1	0	0	0

The responses of the class as a whole to survey questions were as follows:

Were the results of writing to learn worth the time invested?

Compared to other classes, this group of students showed little change in attitude about whether writing to learn kept the course from covering as much material as possible: they remained split between marking "disagree" and "neither agree nor disagree" with the greatest proportion of disagreement on survey 2. They ended with one of the lower levels of disagreement with "writing to learn takes time from better ways of learning," after initially having one of the highest (second only to Koch's students) and showed increasing overall disagreement with "because of writing to learn I need to spend more time studying." This class showed little change in attitude too, as far as whether writing to learn took time from better ways of studying; the majority disagreed. And, compared to other classes, had little change in response concerning whether too much or too little writing was required; few students disagreed, the rest split between marking "neither" and "agree." However, the percentage disagreeing that too little was required increased greatly between surveys 1 and 2, then dropped. Rothenbush's students were either pretty good predictors of just how much effort writing to learn would be (and that it would generally but not overwhelmingly be worth the effort)

or, perhaps, simply did not see the writing as requiring much effort, a response that seems especially likely if, in taking the survey, they did not perceive their papers as "writing to learn."

Did students perceive writing to learn as improving learning?

Like Koch's class, but not as dramatically, Rothenbush's class's percentage of agreement with "writing to learn helps me learn" decreased steadily over the semester as the writing became more and more analytical. The percentage of students agreeing that writing made information easier to remember and disagreeing that it made information harder to understand both decreased steadily as well. This was the group that most expected writing to learn to reduce their need to cram; this did not, however, prove the case and Rothenbush's class had more students disagreeing with "because of writing to learn I need to cram less" on the final survey than any other class. This does not seem unusual; the class did little writing that might improve memory, and, furthermore, some students indicated that they didn't think writing would be necessary to remembering such simple terms, anyhow.

Compared to the other classes, these students did not have very high expectations of writing to learn; nevertheless, it did not meet even those expectations. (It should probably be noted that "high expectations" is a

relative term: nearly 80% of Rothenbush's students indicated on the first survey that they anticipated that writing to learn would help them learn).

Did writing to learn increase student involvement with the topic or the class?

Rothenbush's class was least favorable to writing to learn in this aspect. Nearly as many students agreed as disagreed that writing did not make course information more personally relevant; more students disagreed than agreed that it made information more interesting. While response was more similar to the survey groups as a whole and other classes to "writing to learn does not show me my ideas have merit," favorable response was lower than most other groups and declined over the semester. This may well be a reaction both to the lack of interactive writing, their confusion over what the journal was supposed to entail, and the shifting focus of paper assignments from reaction to analysis.

Despite Rothenbush's hopes and efforts to use writing to make the course information personally important to her students, apparently it did not work. Of all classes, overall her students expected--and received--the least from writing to learn in this area.

What effect did writing to learn have on the student-teacher

relationship?

Although this class had one of the higher levels of agreement that they did not know the professor better, it also had very consistent agreement by half the class that the professor did know them better, probably because, while she wrote little in response to their writings, she did read them. Her class was not as favorable as Koch's and Skillman's; however, as far as letting the professor know the student, writing seemed to work better in this area than in several others for this class.

What effect does writing to learn have on students' attitude toward and practice of writing in general?

Despite the comparatively unfavorable response to other categories, Rothenbush's class's attitude and practice are similar to other classes and sometimes more favorable.

Very much like all classes except Husband's, about one third of these students indicated that they would not do writing to learn on their own on surveys 1 and 3. These percentages increased on survey 2, but so did the percentage indicating they would do writing to learn on their own--from 40% to nearly 60%. Her students indicated early that, for over 90% of them, writing helped them figure things out. This percentage dropped sharply on survey three, possibly because of the very formal paper assigned as well as because the focus of their assignments was not on figuring things

out, but no students at any time indicated that writing hindered them and confidence increased overall while apprehension decreased. The number of non-assigned pages written increased too, although Rothenbush's class still wrote less than any other.

Interviewed students' responses

The interviewed students, like the class as a whole, had a mixed response to writing to learn as used in this class. They saw it as generally helpful, not difficult, and mentioned that, for them it could help them learn rather than just memorize, that, although time-consuming, it could be an effective learning tool. One student, who predicted that writing would be helpful for the professor as well as the students, was glad to be doing writing; he saw it as a source of enjoyment at least as much as a way to learn. However, most of this very favorable response to writing to learn came in early interviews. Students predicted that it would be helpful more than they said that it was.

In speaking about the writing they actually did, highest praise went to the papers, even though some definitions of writing to learn would not include them. Papers, students said, "weren't too hard to write"(Collins, interview #2) and forced them to listen to music in a different way, increasing their appreciation of it. Although two students said they greatly preferred writing

opinion/reaction papers to writing analytical/research papers, all indicated that writing papers helped them learn the subject matter better. "Each paper I did, I think I'll remember a little bit more than having not done the papers at all"(White, interview #3). In fact, like interviewed students in other classes, these interviewees said that, because papers allowed them to apply information, they were both more enjoyable than tests and helped them understand the information better.

> A test is more memorization. When you write a paper...you have some idea you have to expound upon, [you get] a little more elaborate understanding of the topic (White, interview #3).

Journals met with more mixed reviews. Some students said they enjoyed keeping the journal, especially because they could freely react to the music. As such, it helped them make more of the listening experience.

> Music is something that inspired you in so many ways and really gets your mind going. And [the journal] is just a good way to, I guess, make a little bit more out of the listening experience than sitting there and forgetting about it twenty minutes after you've listened to it (Collins, interview #2).

Other students, however, saw no purpose to keeping a journal and doubted that they were really necessary in such a class. Part of this reaction may have come from the professor's not collecting journals until well into the semester, responding to them very little, and particularly from the students' confusion over what the journals were supposed to be for and about. An English major who had kept several class journals

in the past said,

> She hasn't been too extensive in her explanation. She said to keep a journal and she said if we ever had any experiences that we felt about writing about from listening to music. And that's what I've done a little bit, but she hasn't really explained it in depth. I guess what she wants is just free writing reactions, that kind of thing (Collins, interview #2).

In-class writings met with even poorer reception. Although, again, some students predicted that they would be helpful, helping memory in particular, others said that, having never done such a thing, they saw no point to in-class writings and doubted they would learn much from them. As the semester went on, fewer and fewer in-class writings were assigned; eventually they were not mentioned by interviewees. Although the professor did assign and collect some, students did not perceive themselves as having done much writing other than the papers and journals.

Problems with writing to learn

As mentioned previously, this was a difficult class to teach; the interviewed students perceived this as well, mentioning particularly that the class was much harder than they had expected.

> We just had a test and, I don't know, the class is not as enjoyable as I thought it was going to be. We're doing too many technical things with music. For all of the beginners or non-music people in the class, just basically taking the class for credit, really, it's just too technical (Collins, interview #3).

Besides "technical things" writing was unexpected in a 100

level class such as this, particularly writing of this amount and formality, and interviewees perceived many of their classmates as being worried about writing papers[14]. The English major characterized the poor attitude toward writing in this class as part of a larger attitude problem.

> So many people don't like to [write] and because of that, so many people are turned off by it and they don't get enough out of it or don't get out of it like they should....It would be nice if there were some way that teachers could instill an attitude in students that writing was a helpful tool, because too many students just view writing as a task or a chore. Instead of something good, it's got to be six pages and it's got to meet this requirement, it has to have a thousand words. I guess it would be nice if teachers could change students' attitudes a little more [so] they could see the good of it and not just the headache (Collins, interview #4).

In this class, although helpful, writing was generally perceived as a headache.

Part of the reason for the lack of success with writing in this class may be that the students saw Rothenbush as "positive in nature towards [writing to learn], but I think having it be something that was new, [she was] uncomfortable would be the word" (White, interview #3). She was trying something new, in a less than friendly atmosphere from the beginning and in a physically difficult setting. Although her enthusiasm was high, she seemed to the students somewhat disorganized as far as writing--assignments were not clear,

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[14]Interestingly, none of the interviewed students said they, themselves, were the least bit bothered by writing papers.

expectations were not clear, and she did not provide as much feedback as they would have liked. In one sense, this was a highly successful semester for Ms Rothenbush because she learned more about writing to learn, had the chance to try new techniques and test new ideas which, in turn, made her feel better about the class and teaching. On the other hand, from the students' perspective, while some of the writing [the papers] was helpful--as they knew it would be--other writings were not <u>used</u> enough to be very helpful. This semester was like a test flight--the students saw wobbling wings and heard sputtering engine noises; the professor learned more about how to fly the plane.

Chapter Eight

"It Enhanced the Material We Were Already Learning": Betty Skillman's Children's Literature class

This was a 300 level class specifically for education majors. Initial size was thirty, final size twenty nine. Students, primarily juniors and seniors, with a few sophomores and freshmen, were all elementary education majors; most had already had or were taking field experience at the same time. Skillman's class focused entirely on language arts; its content was dealing with, understanding and talking about literature.

Teacher attitude toward writing to learn

Dr. Skillman had used writing--virtually always papers, but often journals or note cards--in most of her previous courses and was comfortable and eager to try some new techniques with this course. She expected that this group wouldn't have as strong a group identity as some other classes, and she hoped that writing might encourage students to share freely. That students felt comfortable enough to share writings and ideas was important to her. "I especially feel pleased when they feel free enough to say what they think in their journals honestly. We try in class to encourage [sharing]," she said later in the semester (interview #3). In addition to making the classroom a

comfortable place, Skillman hoped in the course of the semester to help her students become able to evaluate children's literature and feel they would enjoy sharing it when they taught. She hoped that the writing assignments she gave would facilitate this goal. Unlike Koch or Rothenbush, Skillman required relatively few kinds of writing:

1 Journal: contained responses to the children's literature read and ways it might later be used in the classroom, in which many students used personal, expressive writing.

2 A short biography of a writer of children's literature.

3 A short biography of an illustrator of children's literature.

4 A position paper on a critical issue related to children's literature.

Biographies, she said, were assigned to help make students more aware of the information "out there" for them to use when teaching. They could then convey to <u>their</u> students something about the people who wrote the books they were reading. Skillman was pleased with the biographies her students wrote, as well as with their most formal writing assignment--their critical issues paper, for which students were to select a topic of their choice and research how it was dealt with in children's literature. The purpose of the paper, she explained, was

> really several purposes. One of them is encourage them to begin thinking critically about the issues that are related, because if they go out into the schools as teachers, they're going to encounter the real world where pressure groups and parents and others who are concerned about what their children are reading are going to perhaps challenge something that a school selects for their library or a reading assignment that a teacher gives that is required for everybody. And so just to be aware of the issues that are out there and the different points of view that are represented. Another part of it is to encourage them to become acquainted with more of the resources, because whereas the writing assignments on the biographies take them into reference materials that have biographical information, this one should take them into other kinds of publications that have different articles, and hopefully get them to see that there's some of that out there, too (interview #6).

Although Skillman assigned only one paper she considered "formal," she, like Dr. Craft, was concerned with the quality of students' formal writing. Unlike Craft, however, she viewed improvement as the responsibility of all faculty.

> [Students] tend to be worse, actually, in their more formal written assignments than in their journal because they're trying to be so structured, and so that's the part that you're always aware. And it just doesn't read smoothly. If they'd read it out loud to somebody else that would help. That's the area that I hope we can do something about, not just in one class but all as a faculty working together (interview #7).

Of most interest to Dr. Skillman were her students' journals. Although Skillman had used journals in other courses--and always required them of her field experience students and student teachers--she had never had Children's Literature students keep one. This semester, journals would replace the card file she ordinarily had her students keep

on the children's books they read for class. Journals were to be

> reaction journals, reactions to the assigned reading in the class plus anything else that they want to add as far as filmstrips, television programs based on children's books. It's up to them if they choose to include something like that over and above the requirements. I've tried to encourage that, and I've tried to present it in such a way that it's a communication between us; they're talking to me through their journal because I can't talk to all of them individually about what they're reading. And it's a chance for me to talk to them, too, and some questions I might ask and some comments (interview #3).

Skillman planned to collect the journals four times over the semester and grade them based solely on the number of books read and responded to. They might also be used to stimulate class discussion, but students would never be forced to share entries.

Teacher response to writing to learn

From the first interview on, Skillman clearly looked forward to receiving the journals and responded enthusiastically when she had read them. She only hoped, she said, that the students enjoyed them as much as she did. The only problem she could see was that it took more time to read journal entries than to skim note cards, but she wanted to make clear that

> "it's time out of class, the reading and getting things ready to turn back, but I don't think that there's any loss at all as far as in-class time is concerned because if anything, it helps [students] be more prepared for discussions (interview #7).

For the most part, she found journals a successful undertaking, containing thoughtful, considered reactions. All but one of the first entries were "excellent" and the only student whose entry was not was a transfer student who had never kept a journal before. She said that journals helped students come to class more prepared and ready to talk, as well as helping them connect what they studied in her classroom with what they would later do in their own classrooms. What seemed to impress Skillman most was the communication link journals provided between herself and her students. She could

> communicate with them more on a one-on-one basis than I can ever possibly ever do in class, and even more so than you could if you scheduled a fifteen minute appointment for every student twice a semester. You still wouldn't be spending the time with them in the sense that you can as you're reading and writing back and forth (interview #7).

Based on this semester's success repeating old writings and implementing one new writing to learn technique, Skillman planned to try new approaches with other classes in the future and specifically anticipated using short, in-class writings to encourage discussion.

Teaching style

Considering Skillman's concern with students' sharing, her class was set up and run more formally than might have been expected. Students nearly filled tables arranged in two concentric "horse-shoes"; Skillman usually stood behind

a podium at the opening of the horse-shoes. Her students seemed fairly comfortable with each other, talking in pairs before class. (Unlike Koch's and Craft's classes, for example, they did not talk about the subject of the course). The syllabus was clear and formal; five of the seven requirements for the course were writing-related and written assignments would account for half a student's grade. Skillman introduced writing to learn by referring to it as an activity that teachers sometimes used with their classes, but, like Koch, made no explicit reference to it in the syllabus. Writing to learn would not be something remarkable in this class.

As Skillman had said in her interviews, sharing was of importance in her class. Class time was devoted to students sharing information about books they had read, what their papers would be about, what topics they had selected for their critical issues paper. There was a definite emphasis on applying the information students learned to their own teaching--how they would adapt fairy tales to a second grade class, for example--and Skillman frequently shared her own experience as a teacher as well as inviting students to relate their experiences with children. However, much class time was teacher-centered and involved the professor going over the students' reading in their text, summarizing its important points as students took notes. Student input was largely teacher elicited; students always raised their

hands and waited to be recognized before speaking and, although they were willing to answer the professor's "fill-in-the-blank" questions as she summarized the text, they were hesitant to speculate, give their own interpretations or opinions. They usually gave brief answers to any kind of question, on which the professor would then elaborate. On the whole, class was friendly but restrained, clear but formal.

Most of Skillman's assignments were clear and formal as well. She provided lengthy, explicit written explanations of all assignments, telling the students what they should do, what the requirements would be and possible topics for them to consider. On the journals, she was somewhat more informal, emphasizing the importance of the students' response to the reading. "I hope," she said as she handed out the journal sheets, "the journal writing is very individualistic. It's <u>you</u> responding to the books we read, ideas that come up in class, something you hadn't thought about, something you want to respond to." She said (and wrote) that she hoped journals would help the students think more about what they read. Dr. Skillman's responses to her students' writing was similar. She gave brief, usually positive, evaluative comments to the papers and encouraging, warm, personable comments to journal entries, sharing information about books she had read or her response to a particular work.

Skillman's attitude about writing to learn was that it would be a helpful technique. Papers, she already knew, would help students learn more about the resources available to them and she wanted to use journals as a means to open up a new channel of communication with her students; she hoped that journals would help her--and them--enjoy reading children's literature more. She presented and responded to her writing to learn assignments in just this way: most of class time was spent fairly formally, she was the more knowledgeable guide and interpreter who could help them explore the topic. Journals became more of a meeting ground where both parties relaxed and enjoyed a bit of dialogue.

Student response to writing to learn

Skillman's students entered and ended her class with a positive attitude about both the class and writing to learn.

Table 7: Whole-class response--Skillman's Class

		Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3	Survey 1	Survey 2	Survey 3
	Total: Survey 1-20 Survey 2-21 Survey 3-20	Disagree strongly			Disagree moderately			Neither agree nor disagree			Agree moderately			Agree strongly		
Were the results of writing to learn worth the time invested?	Writing to learn keeps the course from covering as much material as possible	4	10	7	10	11	11	8	7	8	6	3	3	0	0	0
	Writing to learn takes time away from learning	9	7	7	18	15	12	2	8	7	1	1	3	0	0	0
	Because of writing to learn, I need to spend more time studying	4	5	2	9	7	8	13	13	12	4	6	5	0	0	2
	Writing to learn takes time away from better ways of studying	3	4	3	16	11	12	9	7	10	1	6	4	1	0	0
	This course requires too much writing	0	4	0	11	13	13	12	9	7	6	5	8	1	0	1
	This course requires too little writing	5	6	5	12	16	15	13	8	8	0	0	1	0	0	0
Did writing to learn improve learning?	Writing to learn helps me learn	0	0	0	0	1	2	2	4	3	20	17	17	8	9	7
	Because of writing to learn I need to "cram" less	1	0	1	5	11	9	13	10	14	6	8	4	5	2	1
	Writing to learn makes course information easier to remember	0	0	0	0	3	3	3	4	10	17	20	14	10	4	2
	Writing to learn makes course information harder to understand	11	6	3	15	17	20	3	8	5	1	0	1	0	0	0
Did writing to learn increase student involvement?	Writing to learn does not make the course information more personally relevant	5	7	4	14	15	15	7	7	5	3	2	5	1	0	0
	Writing to learn makes the course information more interesting	0	0	0	1	3	1	11	5	6	13	18	14	5	5	3
	Writing to learn helps me create and develop my own ideas	0	0	0	1	0	1	0	3	3	21	20	23	3	7	2
	Writing to learn does not show me that my ideas have merit	3	5	3	11	13	16	7	8	8	8	4	2	1	0	0
The effect of writing to learn on the student/teacher relationship:	I feel the professor knows more about me as a person because of writing to learn	0	0	0	1	0	0	7	5	3	17	20	22	5	5	4
	I feel I do not know the professor as a person better because of his/her reading my writing	1	1	3	4	9	7	21	11	14	3	9	5	1	0	0
The effect of writing to learn on the student's attitude toward writing in general:	I will not do writing to learn on my own	4	7	1	11	4	11	7	8	7	8	10	9	0	2	1
	When I have to figure things out, writing will:	Help a lot			help somewhat			neither help nor hinder			hinder somewhat			hinder a lot		
		9	9	5	18	18	18	2	3	6	1	0	0	0	0	0
	When you have to do a writing assignment do you feel:	Very apprehensive			somewhat apprehensive			neither apprehensive nor confident			somewhat confident			very confident		
		2	2	2	12	14	17	5	5	2	9	6	6	2	4	2
	Approximately how much non-assigned writing do you do per week?	none			1-3 pages			4-6 pages			7-9 pages			10+ pages		
		6	3	3	8	17	13	13	9	11	2	1	1	0	0	1
Students' self-image as learner and writer:	Compared to other students you know, as a learner, would you say you are:	a better learner than most			a better learner than some			about average			a worse learner than some			a worse learner than most		
		4	2	4	11	17	14	14	10	11	0	1	0	0	0	0
	Compared to other students you know, as a writer, would you say you are:	more effective than most			more effective than some			about average			less effective than some			less effective than most		
		2	3	2	12	10	15	12	13	10	3	4	2	0	0	0

Were the results of writing to learn worth the time invested?

Skillman's students, like Rothenbush's, proved to be some of the best predictors of what their attitude toward writing to learn would ultimately be, possibly because most had done all the sorts of writing required in this class. On the whole, however, they were much more favorable to writing to learn than Rothenbush's students. Their disagreement that writing to learn kept the course from covering as much as possible started higher than most classes and increased. On the other hand, while their disagreement that writing to learn would take time from learning started very high, it decreased, particularly on survey 2. Disagreement also decreased--but slightly--to the statements that writing to learn forced students to spend more time studying and took time from better ways of studying. Her students were divided, but most disagreed, that too much writing was required and generally also disagreed that they were required to write too little.

Skillman's students are perhaps notable in this area for the relative lack of change of attitude toward writing to learn. They neither move from initial skepticism toward favor as do Craft's, Husband's and McGrath's, nor does writing fail to meet initial high expectations as with Koch's class. Like Rothenbush's students, Skillman's students expectations of writing to learn are generally met

or nearly met with Skillman's students' expectations being higher than Rothenbush's.

Did students perceive writing to learn as improving learning?

Skillman's students one had one of the highest prediction rates that writing would help them learn: over 90% initially agreed with "writing to learn will help me learn;" this decreases only to over 80% by the third survey. Perhaps because of the nature of the class, they indicated less that they anticipated cramming less because of writing to learn--and by the end of the semester they have the lowest agreement rate (less than 20%) of any class. They did, however, expect that writing would make information easier to remember and <u>not</u> harder to understand. While favorable response did not decrease greatly concerning the difficulty of understanding material, it did drop by about one third concerning ease of remembering material. Writing seemed generally helpful to learning for this class (although not meeting original expectations); however, it apparently did not help students remember material better, possibly, again, because of the nature of the class. Memorization was not required in the sense that Husband's class required it, nor was the writing in Skillman's class intended to help students memorize. The papers and journal were designed to help make them aware of resources.

Did writing to learn increase student involvement with the topic or the class?

Skillman's students had high expectations of writing to learn in this area; expectations which were frequently met or exceeded. Only Koch's class initially disagreed more that writing to learn would not make course information more personally relevant; unlike Koch's, Skillman's students' level of disagreement increased on subsequent surveys. This pattern held true, too, for "writing to learn will make course information more interesting" and "writing to learn does not show me my ideas have merit." In both cases, relatively high initial favorable response was exceeded on subsequent surveys. And, while the percentage agreeing that writing to learn helped them create and develop ideas declined slightly, this class, nevertheless, had overall the highest agreement of any group.

What effect did writing to learn have on the student-teacher relationship?

Most of Skillman's students indicated that they neither agreed nor disagreed with "I do not know the professor better because of her reading my writing." However, a large and increasing percentage indicated that writing definitely did help her know them better. She read their writing regularly, and their journals were especially opinionated.

However, her responses were relatively limited.

What effect does writing to learn have on students' attitude toward and practice of writing in general?

Finally, in many ways, this class probably averages the most constant positive attitude and practice of writing. Although they had comparatively low disagreement and increasing agreement with "I would not do writing to learn on my own" and, like many other classes, their apprehension about writing increased, 90% of this class indicated on survey 1 that writing helped them figure things out and, unlike all other classes but Craft's, this percentage decreased only slightly and this class consistently did more non-assigned writing than most other classes.

Interviewed students' responses

The interviewed students in Skillman's class were quite positive about both the class and the writing done in it. In her first interview, Cora McKay said, "I like the idea of writing in every class. I think everybody needs to be exposed to writing." In general, they thought that writing helped tie the lecture/discussion information into their papers, and "enhanced the material [we] were already learning" (Williams, interview #4). As Skillman had hoped, writing the biography and critical issues paper made her students more aware of the resources available to them.

As might be expected, most of the interviewed students' comments concerned the journal. Although one student was initially somewhat confused about exactly what to do in her journal, both interviewees quickly became decisive about how they were using them; both wrote reactions and responses beyond the basic requirement.

> I took it to be kind of a personal assignment that you would use the journal as you would like to use it. So for each book that I read, I've written a paragraph on it....written what the story was about and then written either what I liked or didn't like about it or something that stood out in the book or a suggestion to myself how I could use it in a classroom (McKay, interview #1).

> I'm going beyond what she asked us to do. I'm writing the author and the grade that it's intended for, but I'm also incorporating why I think it would be beneficial to use it in the classroom, and the type of developmental, emotional skills, intellectual skills that the children can get out of these books. Also different occasions when I could use the book (Williams, interview #1).

The interviewed students said that keeping the journal was time consuming--more so than note cards would have been--but that it would help them remember what they had read and be very helpful when they had their own classes. "For me as a teacher," Jennifer Williams said, "I think it'll be really important because...I'll be organized and I'll be able to see exactly how and why I can use that material" (interview #1).

Problems with writing to learn

As future teachers, the interviewed students were very

aware of <u>being</u> taught and of problems that teachers might have, including problems with writing to learn. They mentioned that most of the writing in Skillman's class had come due near the same time, that spread-out due dates would have made it easier to write better, more considered papers. They also cautioned that teachers using writing to learn would need to be aware that not all students would expect writing in all classes and might react unfavorably for that reason. Finally, like the students in Koch's class, they stressed the importance of good feedback from the teacher on the writing. "That means a great deal to me, that they acknowledge that they read it and that my time just wasn't spent doing an assignment" (Williams, interview #2).

Chapter Nine

Conclusion

This study began with the hope of answering two basic questions: did students perceive writing to learn to be worthwhile? what effect would faculty attitude toward writing to learn have on the attitude of their students? On surveys and particularly in interviews students provided interesting answers to these questions; in addition, they and their teachers raised other intriguing and inter-related matters worth consideration.

It should be noted that interview responses were also generally more positive than survey response. This may stem in part from the interviewee's impulse to tell the interviewer what s/he wants to know and in part from the fact that students who might be considered "better," more confident, more responsible and/or more favorably disposed toward writing in the first place were more likely to volunteer for interviews. Most volunteers characterized themselves as highly motivated, good and/or hard-working students. Several of them also indicated that they volunteered because they considered themselves writers or had a particular interest in writing. These students hoped participation in this research would help them learn more about writing.

Writing to learn and student-centered learning

Much of the literature on writing to learn emphasizes that it engenders student-centered learning, that it can help make information more important and hence more interesting to the learner, and that writing to learn may be particularly effective because it allows students to participate, to take active roles in the learning process, in a sense, to teach themselves.

My interviewees confirmed that these activities are important to their own learning.

> [Dr. McGrath] lets you pick anything [as a paper topic] basically, so you're going to learn. You're going to pick something that you might be interested in instead of him saying, "here's a list of topics, now you pick one," and you're not really interested in any of them and when you go after them you're just sitting there just doing it to do it instead of getting something out of the paper. And that's what a paper should be for, is to get something out of the paper, learn in more specific detail about that topic (Urban, interview #3).

Prior--or developing--interest increased both their enjoyment of and commitment to a subject and several students selected a course or teacher for that reason. During the class, they appreciated the freedom to make some of their own choices based on that interest.

At least as important to them as interest in the subject and/or a certain freedom of choice was the opportunity to learn actively, to be involved learners as well as the chance to pass on acquired knowledge, either teaching themselves

> I have to self-teach myself...when I was riding a bike no one could help me do it. It's the same thing with work, I have to figure it out myself (Tiller, interview #1).

or teaching others

> Actually I like to tutor people because once I've explained it to somebody else, I know it and that's it, I don't have to worry about forgetting it (McKay, interview #1).

Student receptivity toward writing to learn

Did 2 + 2, then, equal 4? If students say they learn best when they can learn actively about a subject that interests them, and if the literature says writing to learn fosters active, student-centered learning, did students also see writing to learn as a worthwhile activity, one which helped them learn in a way which was profitable for them? It seems so. As far as specific classes, Koch's, Skillman's and McGrath's most indicated that writing to learn helped place them at the center of their own learning. These three classes all said that writing helped make course information more interesting, helped them create and develop their own ideas, and showed them their ideas had merit. Koch's students indicated more than any others that writing helped show them their ideas had merit--perhaps because of the large amount of exploratory writing they did which was then shared with (and virtually always well-received by) the rest of the class. For McGrath's class, writing particulary made the course information more interesting, possibly as they

related the reading material to their own experiences. These were the three classes (except Rothenbush's in which, as noted in chapter seven, students were confused about writing to learn and their assignments) in which students had the most chance to express their opinions and reactions to course material through writing.

Anne Miller Wotring sat in on and observed a high school chemistry class using writing to learn. Of her experience with the class, she said

> About one-third of the twenty-six students in the class were so unsure about what writing to think meant they didn't write anything. Others wrote to me and for me, pretending I was not a member of the class and informing me about what was happening....Students who were concerned about their grades wrote to memorize and/or wrote to check their recall of the material. In a sense, they were actually "writing to learn," i.e., memorize....Only four of the twenty-six high-school age students were able to write to think. I was very curious to know why the majority could not....My second thought as to why the majority didn't write to think was that none of them <u>knew</u> that <u>writing is thinking</u> (36-37).

Wotring's definition of "writing to think" was a good deal narrower than this study's definition of "writing to learn," nevertheless, the results of this study shed some doubt on her claim that students don't know how to write to think. Many of the students in this study indicated that they already did writing to think, writing to learn, on their own and that they did strongly associate writing with learning -- and specifically with learning as opposed to memorizing. In fact, in most classes the students began the semester

highly favorable to using writing as a means of learning and the problem became one of professors being unable to live up to their students' expectations. It seems that, in implementing writing to learn into a classroom or curriculum the trick is not so much to convince students that it will work as to make or allow it to work and work well. In fact, one of the most interesting pieces of information from the surveys was that a majority of students were initially very receptive toward and favorable about writing to learn, not, as I had suspected, hesitant to try something new. The interviews helped clarify this: several students indicated that they already used writing as a means--often their primary or best--of learning. Brad Elder, a Junior in Robert Husband's Invertebrate Zoology class said in his first interview:

> It struck me as kind of weird that someone would run an experiment on [writing to learn]. I always took it that if you wrote something, if you could write something out and put it in your own words you had to understand it to write it. And so [the study] seemed like so serious and formal...to me it seemed like that would be a given.

Because writing had proved a helpful learning device for her in the past, one interviewee, a student teacher, used writing to learn with her own students to help them learn.

Even students who indicated early that they found writing intimidating, difficult, or simply didn't like it, found writing to learn to have redeeming features and, over the semester, responded favorably to it. In fact, every

interviewee, when asked during the final interview to rank writing to learn's effectiveness as a means of learning, indicated that it was highly effective. In fact, students said they regretted not having done more writing to learn either in the course under study ("when we did it, it was good,"[Harsh, interview #5]) or earlier in their education (I wish it was done in Basic [lower-level computer programming course] where you're just starting more [Costanzo, interview #5]).

Despite increasingly heavy workloads, and even though final interviews were conducted during the high-tension period preceding finals, no interviewees said that they became more negative toward writing to learn as the semester proceeded.

> My attitude didn't change, my behavior changed because things started piling up. My attitude didn't change. I still think it's a good way to do things (Vierling, interview #4).

Like Ms Vierling, most said their attitude remained the same:

> I think I already had my attitude set. I don't think it changed, if anything [writing to learn] enhanced it (Shaw, interview #4).

> I always liked writing. It's always been, if you write it, then you learn it. I'm dyslexic, so that's the reason I don't write. But it does help (Elder, interview #4).

The rest indicated that their attitude toward writing to learn improved, sometimes dramatically:

> In the beginning it was like "why am I doing these." Later it was like "now I understand why

I'm doing it" (Costanzo, interview #5).

> Before [this semester] I would have said, "no, I hate writing. I don't want to write," and I wouldn't think that it would have helped. But it helps you piece together what you know (Blevins, interview #5).

Sometimes more subtly:

> It changed my way of working with things in the course of the semester. I imagine I could have sat down and done it from my Freshman year on. I never forced myself to. After being forced to do it, I find myself doing it more often (Burger, interview #4).

Perhaps the most interesting sort of favorable response, though, was that from students who teach now or intend to teach in the future and, having done writing to learn themselves, intend to use it in their classrooms.

> I tutor Basic [computing] people and...instead of going through the program with them to help do it, I one time just said, "Stop. This is your twelfth week of the semester or whatever. Tell me what it is you want to do first and write it out." And they did that and then I said, "Ok, look at your step-by-step." I used that theory on them to get them to do it and it worked well because it took a lot less time than it usually did to get through the program. It worked well....They're scared of the machine, but the most important thing is to think like the computer. [Writing] forces you to think step-by-step and realize the computer is stupid and you have to teach it. And going through and writing out the steps helps (Costanzo, interview #5).

Another student added:

> I'm student teaching. What I make my students write, they learn, and they find that their grades are improving because of writing. I teach biology and general science [grades] nine to eleven. I have them write out questions and answers. I have them write papers about articles. I have them outline chapters, write essays, fill in the blanks. There's a lot of writing...that helps

them (Anderson, interview #1).

A variety of students indicated that writing worked for them in several ways, most of which support the claims made by the literature.

Writing and learning

Most classes indicated that writing helped them learn, however, students in Craft's and Husband's classes agreed less than others that writing helped them memorize--in Craft's case probably because little memorization was required and in Husband's because little writing was done. On the survey immediately after they had written their "volvox paragraphs" Husband's students did indicated that writing definitely helped them remember information. In his class, too, fewer students indicated that writing did not make information harder to understand, again, possibly because little writing was done, particularly the type of writing (like journals, admit slips, summaries) that aids comprehension. Craft's class, more than any other, said that writing helped them figure things out--and here, their writing assignments were designed specifically to help them figure out programs. On the other hand, Koch's and Rothenbush's classes agreed less that writing helped them figure things out as the semester went on (and papers became more complex?); in fact, an increasing number of Koch's students indicated that sometimes writing hindered them,

possibly a result of anxiety about their 20-page paper and of feeling overworked.

Interviewed students agreed with the literature that writing both helped and forced them to think, to look at ideas or processes more thoroughly, carefully, or in a different way than they would otherwise have done.

> When you have to get something down on paper, it forces you to think, to be consciously aware of it. If you just think about it, it isn't the same. Ninety percent of the time when I put down one of the novels I had no idea of how to start or how to think about it or what to do with it. And writing on paper I could think things out. I didn't always come up with the right answers or answers that were helpful, but a lot of the time, once I made myself forcibly think about it, it helped (Kruse, interview #4).

Within that larger conceptual framework, they also indicated that writing helped them organize their ideas, see how parts fit together more clearly. It made writers more aware and evaluative of their ideas, captured them, and made them easier to arrange.

> Once you think about it, you kind of go over it subconsciously even though you're not aware of it, and you come up with ideas that may help. And if you don't have the time, then you won't be able to use those ideas. So it's much easier to sit down and try to write it out in advance. The first advantage is getting your thoughts together sooner. The second advantage is putting them down on paper so they can't disappear in your mind, they're still on paper. They're still there, then you can sit back and look at them or say, "well, this was a good idea; this wasn't."...Another advantage is I know a few things I'd change since the first time I wrote it down the first time...I'd look at it, just the whole thing, throw it out and start over. In the way it was a disadvantage, yet it was an advantage because I saw a better way of doing it (Burger, interview

#4).

In addition to helping them organize their own ideas, students indicated that writing helped them learn new information. Gloria Vierling pondered a little on why writing helped her learn new concepts,

> You get to put things down in your own words and they make more sense sometimes that way. When you're reading a book that someone has written, he's using a lot of technical terms, jargon, and unless you're familiar with the jargon of that subject you can sometimes get really lost. And by writing it down in your own words it tends to make more sense (interview #4).

Jennifer Williams, too, saw a connection between personal expression and empowered learning:

> It expands your own knowledge and often you can express yourself better if you write it than if you just read it, and you can remember it. If you write something it's a lot easier to remember than if you just read it over a couple times (interview #4).

And several other students mentioned how writing helped them remember and memorize information, that writing was particularly helpful for long term memory.

> It helps your long term memory a lot more. I guess that's what we're striving for when you take a class like this, is to remember some of it. It definitely helps a lot that way, where the methods we used before, just cram, and I'd forget it. You might as well forget it (Harsh, interview #5).

Mike Ploegstra speculated on how writing accomplished this, and came up with reasoning similar to Bob Sample's referred to in chapter one.

> If I really want to remember something I'll write it down. If I want to remember exactly what it is, I'll write it down a couple of times. And

> it's not so much that I take the piece of paper that it's on and look at and remember it, it's more that I wrote down so I can think about it harder. Just the mere act of writing it down kind of casts it into my memory. You can read a whole lot of stuff and just have it go away, but when you combine the two, when you read and then you write, it comes in and then it goes back out and it has more of a tendency to stay in there. I think it's the physical aspect of it (interview #4).

Writing and communication

All the teachers in this study, except Husband, who mentioned this advantage less than others, indicated that writing was very helpful for letting them "see inside their students heads." Their students, however, did not perceive writing as opening a two-way flow of communication, probably because their teachers did not use it primarily to that end. Some students, though, especially in classes where the professors did use writing for feedback--such as Craft's, where he read and acted on admit slips and Skillman's and Koch's where the students kept journals which the teacher read and responded to--saw it as helpful in this aspect (again, Rothenbush's class did not respond as positively to writing in this area, although they, too kept journals. And, again, it may be because they were unsure about the purpose of the assignment and because she did not respond to their writing).

They saw their teachers as using writing to help build a feeling of community in the classroom as well as to

improve class morale:

> Dr. Craft had us write why our programs didn't work. And he read them all to the class, which wasn't really embarrassing because you heard that other people had the same problems as you, some of them. It was good to hear what other people were doing and having trouble with (Burger, interview #3).

Like their teachers, interviewees also perceived writing as a helpful tool for professors to use in evaluating where their students stood, what they understood or were confused about, how much they were learning of what the teachers thought they were teaching.

> ["Admit slips" about what the students did and didn't understand] were very worthwhile because I know Dr. Craft read them, and a couple of times he approached me and said, "so you don't know about this." Then it would help him explain a lot better. I knew if he would have read them he would have done that, but if he never read them he couldn't tell, so I think it was a very good idea. I'd like to see it done more in other classes. I certainly wish it would have been started sooner than my Senior year (Burger, interview #4).

Finally, students mentioned as an advantage of writing to learn an aspect that might initially seem a disadvantage: it made them spend more time studying.

Students indicated that writing to learn did allow their learning to become more student centered, which, in turn, increased their interest and involvement in the class. It helped create a sense of community and sometimes opened lines of communication between teacher and student. Most emphatically, they said that writing helped their learning--it improved memory, understanding and organization and was

usually worth the time it took.

Student response to teacher's attitude and practice

The second guiding concern of this study was the effect that a particular teacher's attitude toward writing to learn and practice in implementing writing to learn in his or her classroom would have on the response of his or her students. As has been mentioned in the individual class chapters and above, students generally began the semester perceiving writing to learn as worthwhile. The extent to which they maintained this perception depended less on their professor's attitudes than their practice. The way the teacher handled the writing in class, from initial assignment to feedback on the writing seemed to outweigh personal enthusiasm or neutrality (no professor conveyed outright skepticism to his or her students). For example, Dr. Craft was avowedly skeptical when speaking to me about writing to learn and remained so throughout the semester, yet because he used writing to learn in his class in very practical, controlled and "professional" ways, because his students saw their writing used, they perceived it as useful even when they admitted they were unsure what their professor's attitude was. On the other hand, Dr. Koch and Ms Rothenbush were very enthusiastic about writing to learn but their classes, feeling overworked in Koch's case and frankly puzzled about the writings they were doing in

Rothenbush's, were less favorable to writing to learn than they had initially expected to be.

In early interviews, Craft, Husband and Rothenbush each expressed concern about the quality of student writing, yet Craft concentrated on using writing to learn techniques in his class, rather than teaching his students to write, and they saw writing as helpful to learning. Rothenbush and Husband each tried to convey a certain form of writing; here, Husband was more successful, possibly because his students, as science majors, could expect to write papers similar to their final research papers later in their careers. And some of his students did mention the assignment as helpful preparation. In Rothenbush's case, her students, none of whom were music majors, did not as completely understand (and were not told) the rationale behind writing formal analyses of music, and most said they preferred more "personal" writing and that they actually learned more from it. In short, the response of students in this study casts some doubt on Cadwallader's caution to teachers contemplating using writing to learn:

> Students will be skeptical, will state that they are already overworked, will declare that they just cannot write. Your attitude will be absolutely critical. If you do not believe in the importance of writing or if you are convinced that you can do nothing, then your efforts will fail (379).

According to the students surveyed and interviewed here, a teacher's belief in writing to learn will not "rub off" on

them (as in the case of Rothenbush's class where she was very enthusiastic and her students among the least receptive), nor will an indefinite attitude result in students who dislike writing to learn (as in the case of Craft's class, where students said they were unsure of his attitude, but were very positive to writing to learn).

What proved to be far more important to students than their teacher's attitude was the ways in which writing was done. Students in classes where writing was done regularly (McGrath's, Skillman's, Craft's, and Koch's, although, again, they were ultimately overwhelmed) reacted more positively than those in which it was done sporadically (Rothenbush's and Husband's). Furthermore, as interviewed students mentioned above and especially in Craft's and Skillman's chapters, writing that had some clear purpose or utility, either for that class or, better yet, for the future, met with the greatest approval. For example, although students in Craft's and Husband's classes were probably more similar than any other two classes--they considered themselves scientists, did not expect to do much writing in a class in their major--their responses to writing were probably the most disparate of any two classes. The reason seems to be the way writing was handled. In Craft's class, writing was utilitarian and taken for granted. Program plans were presented as being necessary to writing every program and students generally accepted them

as such. Admit slips were not time consuming or intrusive, but were used immediately. In short, the writing in Craft's class was all used for something very obvious and his students saw it as an obviously useful activity. On the other hand, for Husband writing was something done experimentally, very occasionally, and primarily in order to demonstrate proficiency. His students responded by being unsure about writing to learn themselves, and remaining most concerned with correctness--not learning--in their writing. Even among those classes that assigned "formal" writing, and even though students who wrote formal papers said that they helped them learn more about the subject than a test, for example, would, the writing assignments that students saw as most useful tended to be those that were in some way most practical: Skillman's students felt their journals would help them teach; Koch's students said their journals helped them learn about themselves.

Interrelated with the kind of writing done, was the amount of writing required. If a teacher, like Rothenbush, assigned too many different sorts of writings, her students might not see the worth in any of them. Or if the teacher, like Koch, assigned writings that his students found helpful, but assigned too much, then they were not as favorable. On the other hand, if a teacher assigned too little, like Husband, his students were unsure about writing to learn because, as one of his students said, they hadn't

done much. The happiest medium seemed to come in classes like McGrath's, Craft's and Skillman's where a few types of writing were assigned regularly--program plans were due every week, students kept journals all the time, they wrote reading notes for every book--and the writings were used and useful.

Generally speaking, then, students in classes like McGrath's, Craft's and Skillman's were--or, more often, became--more positive toward writing to learn than students in classes like Husband's, Rothenbush's or, to an extent, Koch's. The difference seems to be in the teacher's assigning a reasonable amount and range of writings which the students could see as being obviously useful.

In addition to and expansion of these recommendations, students also pointed out some problems that may accompany writing to learn and of which, they said, any teacher or system planning to use writing to learn should be aware.

Student recommendations

Clear expectations

To begin with, students said that teachers should make it clear both that writing will be expected in their class and what sort of writing will be expected. The "writing to learn" assignments they give may be quite different both in form and focus from more formal and polished writing students might be more used to, particularly in non-English

classes. Although a brief explanation of writing to learn was included on the surveys and most professors explained it to their classes, some students remained quite concerned about surface appearance even on informal assignments.

> Disadvantages to writing? Just typing. I don't like to type (Crosthwaite, interview #2).

Along with knowing that they will be using an unfamiliar or uncommon sort of writing, students also indicated that they needed, quite simply, to know that writing would be expected of them. Rothenbush's students, especially, were often confused about what she wanted and were the most negative about writing to learn on the surveys.

> I've heard a lot of people that haven't liked the papers too much because the class, in the past, hasn't had to do anything except sit in the class and take notes and tests. So there's been a little bit of negative reaction to it (Collins, interview #3).

In addition, interviewees indicated that teachers who require writing to learn should emphasize that it <u>is</u> required. Although many students said they believed writing helped them learn, and that they would like to use it as a means of learning, when not required to do so, they did not write.

> When I first started here, as a non-traditional student I was pretty nervous, so each class I had, when I read I took notes. The second semester it was kind of, "oh, that was so easy, I don't have to do that anymore." I haven't really done the reading notes as often as I should have. I know they helped me a lot before (Vierling, interview #1).

Timing and workload

Student interviewees also recommended that teachers consider making writing part of their class, that is, dedicating class time specifically to writing to learn, and in classes in which this was the case--such as Koch's and Rothenbush's--students said that they greatly appreciated the time. Interviewees emphasized that, although it was worth their effort, writing to learn was time consuming

> He makes a lot of time for it in class so you don't have to spend a lot of time on it. In the class is where a lot of our learning comes from (Jones, interview #2).

On a deeper level, though, students indicated that designating time specifically for writing sent a message that writing as a means of learning was important enough to devote class time to it.

Students who wrote papers or, particularly, kept journals for classes other than their "cooperating" class pointed out another potential problem with writing to learn: overwork (as previously noted, this was particularly a problem in Koch's class; Skillman's students also mentioned feeling bogged down at the end of the semester).

> Another disadvantage would be if they overwhelm you with writing to the point that you're just so saturated you don't have the time or energy to do it....If you have to sacrifice quality for quantity you're not doing a good job, either (Shaw, interview #4).

Students were concerned that their teachers be very

conscious about the shape of their students' writing workloads, interviewees said, and, if they hope for quality, not just quantity, try to spread lengthy assignments across the semester, not concentrate them all at the end.

> Toward the end we had a big lump of things that was due at the same time. I think if the assignments could have been spaced out a little bit better I wouldn't have changed my attitude at all. It wasn't a lot of work, it was just lumped too closely together (McKay, interview #5).

Other difficulties

Students pointed out that teachers and administrators who are committed to writing to learn should also be ready for other difficulties that may have nothing to do with time constraints or content to be covered. For example, Rothenbush's music class met in a large hall where students sat on folding chairs.

> I think at this college, the format for classrooms is really poor. You can't write because you don't have desks....The English classrooms you sit behind tables and that's a lot better. I think if it's going to change, if you want people to write more, give them a place to do it (White, interview #1).

Final student recommendations

Finally, the students in this study, both interviewees and surveyed classes as wholes, were most explicit about three primary messages teachers using writing to learn need to send and receive:

1) They need to make clear what the purpose behind the writing assignment is and, if at all possible, make it

practical, applicable, not "busy work."

2) They should be aware that different kinds of writing benefit different students and produce differing results.

3) They need to provide feedback of some sort to the writing.

Purposeful assignments

As might be expected, students who did not perceive a clear purpose behind a writing assignment or technique were reluctant to spend time doing it. It seemed like wasted time or "busy work" to them.

> It would be nice if there were some way that teachers could instill an attitude in students that writing was a helpful tool, because too many students just view writing as a task or a chore. Instead of something being good, it's gotta be six pages and it's gotta meet this requirement. It has to have a thousand words. I guess it's be nice if teachers could change students' attitudes a little more; they could see the good of it and not just the headache (Collins, interview #4).

Students said that one way to begin instilling this "proper attitude" is for teachers to be more open and intentional about the purpose behind an assignment. Teachers, it seemed to them, had a tendency to know exactly why they were doing something, but for some reason kept it too much a secret from their students.

> I don't really like the idea of keeping a journal. I know it's been tried in other classes, that other people have done it. It's the first journal I've had to keep for a class. I don't understand what the teacher thinks we're supposed to get out

of keeping a journal (Crosthwaite, interview #2). Rothenbush's students, in particular, seconded Brostoff's caution that "teachers need to make sure that assignments are presented so that students know what to do and how to do it" (184), but would probably add that they would also want to know <u>why</u> they were doing a particular piece of writing.

Beyond simply understanding why the teacher wants an assignment done, students were most enthusiastic and saw the most worth in assignments that had some practical or long-term relevance. Students particularly mentioned assignments that helped them within <u>that</u> class, whether to improve their grade

> [Revision] is good because that way pretty much you're not going to get a bad grade. He's given you the chance to get a good grade; all you have to do is the work (Urban, interview #3).

or to make understanding reading material or writing later papers easier. They saw value, too, in writing that allowed them to apply information they were learning.

> It was good for me to be able to take things that she taught us and apply it practically to some music and the thing that I enjoyed about it most was that we got to choose what pieces we got to write on....For me that [applying information] more so than a test is the best way to learn stuff (Collins, interview #4).

And they saw value, as well, in writings or techniques they could use in the future. Students in this study agreed with the cautions of several teachers who had used writing to learn who said that it was important that teachers see writing as more than "mainly as a means of recording and

testing" (Martin in Marland, 45). The class in which this was most strongly the case was Husband's; his students did not cease believing that writing could be helpful to learning, but they did not perceive what they did in their class as "writing to learn."

One definite advantage several students noted about writing to learn was that it was a different mode of learning than they were used to, a welcome change, for example, from memorizing and test-taking.

> You use a lot more different modes of learning than just one that you get tired of, and that helps keep your mind clearer, and plus it helps your long term memory a lot more. I guess that's what we're striving for when you take a class like that, is to remember some of it. It definitely helps a lot that way, where the methods we use before, just cram and I'd forget it (Harsh, interview #5).

Feedback

Finally, students in this study indicated very strongly that some sort of feedback from the teacher is important. Those classes which received feedback--Koch's, Skillman's, and McGrath's (where students received feedback for revising)--were generally more positive about writing to learn, particularly its ability to help them know the professor or the professor to know than them, than classes with little feedback. Craft's students' rare complaint was that he did not give written response to any of their writing, although they appreciated his oral comments;

Skillman's students remarked on her comments on their journals; and McGrath's class spoke highly of his response to their papers. They agreed with Pradl and Mayher (1985) that feedback helped them understand what the teacher's expectations were.[15] Most importantly, although they said writing to learn helped them learn whether the teacher responded or not, they appreciated teachers who used writing to foster two-way communication and felt that feedback from a teacher provided recognition of their efforts.

> I despise when you turn in a paper and you get it back and you go through the paper and there's noting in the paper whatsoever. And you feel cheated in a way, because you did all this work and all you know is he thinks it's "well written." Did the person read it over or not? I think if you're putting the time into writing it, I like it when the instructor puts time into reading it (White, interview #3).

The best feedback, it seems, particularly on longer papers is both immediate

> I think one of the most important things is immediate feedback (Miller, interview #3).

and supportive, positive

> One disadvantage would be having a teacher that doesn't know how to react to writing. Reacts negatively or too picky, marks down for every

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[15]Pradl and Mayher (1985) recount the case of two chemistry students, one of whom, they say, uses her journal to make connections and interpretations, the other merely repeats textbook information. Unfortunately, they say, both merely receive a check as feedback. "Not surprisingly, they both thought they had done an adequate job and continued to do the same kind of learning logs throughout the term. Once students have learned how to do this kind of assignment...a check may be an adequate teacher response; but while they are learning to do it, more informative feedback must be given."

> grammar mistake, spelling mistake. I had one professor that did that, so that I wouldn't write for him anymore (Shaw, interview #4).

Students, particularly interviewed students were, on the whole, very positive about writing to learn right from the start. It helped them learn, they said, helped them approach content material in a slightly different way and organize their thinking better. Many of them already used writing as a mode of learning and appreciated its being incorporated into their classes--particularly if it seemed relevant and applicable, if their teachers were clear on what they wanted from the writing and provided feedback. Then, writing, they said, was decidedly worth the greater time it took.

Other Concerns

Beyond answering the two guiding question in some detail, both in this chapter and throughout the discussion of studied classes, this study brought out some other concerns about writing to learn.

The first is most specifically about writing across the curriculum. As mentioned in the first chapter, this term covers a range of programs and techniques. In the case of this study, despite an early attempt to narrow the definition, a later "hands off" approach showed that some teachers (Husband, here, and to an extent Rothenbush whose concern with students writing "correctly" resulted in

assignments that were not always most conducive to learning) will remain unclear as to what "writing to learn" involves. Given relatively free rein to define "writing to learn" (or, "writing across the curriculum," the term most of the study professors routinely used) the teachers in this study included everything from very formal research papers to highly informal "admit slips" or journals. One professor even suspected that fill-in-the-blank charts he prepared for his students probably were writing across the curriculum. The broad definition is, however, only half the problem. The greatest potential for difficulty lay in the differing expectations at the beginning of the semester of "writing across the curriculum" would or ought to be. Although the study was originally designed to focus on the relationship of writing to learning content material, professors were also highly concerned with their students' writing abilities and with the importance of integrating writing and content in all departments. The probability of teachers and consultants talking about two (or more) very different programs while using the same term is great. Further study, using a more restrictive definition of writing to learn, or comparing two classes, one in which the definition was limited and one in which it was broad might be illuminating, particularly if that study examined the teachers' reactions to wide or limited autonomy.

The second concern, raised most often by Dr. Craft, but

echoed by Dr. Koch and several students, is that even when it is extremely helpful, writing is just one means of learning and should be recognized as such. Writing to learn is helpful in part because it activates different learning pathways than the usual notetaking, memorizing and testing circuit; however, it should not be forgotten that there are other pathways, other means of learning as well. Language arts teachers already emphasize that writing, reading, listening and speaking are all important; others might include movement and visualization. Furthermore, whereas some students may find a particular pathway--like writing--helpful, others will gain more success using other techniques. The greatest potential for writing as a means of promoting learning is probably not when it is used as the only means of learning, but when it is presented as one of many alternatives. It might be enlightening to compare writing with other modes of learning within a discipline (such as chemistry, which Craft characterized as using several modes of learning). It also might be interesting to see whether one sex profited more from writing to learn than another (Mary Belenkey suggests in Women's Ways of Knowing that women may learn better using participatory techniques like writing to learn than more "traditional" techniques like notetaking, memorizing and testing).

Finally, one of the most striking results of this study was the very positive initial response to writing to learn.

Before they ever did any writing, most students predicted that writing to learn would be a helpful, worthwhile experience. This may, of course, be a result of the terminology (would they have reacted differently if their surveys had spoken of "additional writing," "simple writing," or even "writing-to-do-more work?") Nevertheless, surveyed students, too, said that they thought writing would be helpful, even when they--and I--used the term "writing." Further study specifically concerning where this initial positive reaction comes from and what teachers can do to maintain the favorable response would also be valuable. Finally, althought this study did not specically examine whether students found more value in what the Schools Council Research Project groups (Britton et al, 1975; Martin et al, 1976) call "expressive" writing--writing that is writer-centered and informal--the students I interviewed did indicate that this sort of writing, in the form of admit slips and journal entries, did better meet their preference for "practical" writing than what Britton, Martin, et al term "transactional" writing. A study focusing specifically on whether students actually do see more learning value in expressive writing than in transactional, would provide support for one of the basic tenets of the writing to learn movement.

Appendix A

Writing to learn handout for participating professors

Writing to learn handout for participating professors

The term writing-across-the-curriculum can apply to several kinds of combinations of writing and content-area information. It can mean that English departments offer courses such as "Science Writing," "Business English," and "Writing in the Humanities" in which students write about their chosen fields and become familiar with the conventions of writing in that field. Writing-across-the-curriculum can simply mean that students in content courses prove their knowledge through writing -- essay tests and term papers rather than multiple choice tests or short-answer quizzes. It can also mean -- and this is the application that seems most beneficial to English teachers, content-area teachers, and students -- that students use informal writing strategies to help learn content area information more effectively.

According to cognitive research, people learn best when they: 1) Make subject matter personal -- that is, place it in the context of their lives. 2) Connect new information with old -- place it in the context of what they already know. 3) Verbalize it -- restate new information in their own words.

(One cognitive theorist tells of an experiment in which three groups of people were given cards with common words on them. One group was just told to organize the cards any way they liked. The second group was told to organize the cards and that they would later be tested on their ability to recall the words. The third group was only told to <u>memorize</u> the words, not organize them. The two groups that organized but did not memorize tested equally well [knowing that they would be tested had no effect]; the group that memorized had the worst recollection.)

Writing allows a student to do all these things in a more "manageable" way than speaking: * more students can write at the same time than can speak at the same time; * writing can give shy students a chance to participate; * writing can be saved and returned to later -- it provides a permanent but revisable record of thought; * writing is also communication -- a student's writing can let both student and teacher see what learning is going on.

The sort of writing that most facilitates learning is informal, relatively unstructured, and has the emphasis more on what is said -- the new ideas and concepts being struggled with -- that how it is said -- "correct" spelling, grammar and usage. These things are important, but to what extent depends on the purpose of the writing. When a student is writing to learn, writing for himself, to himself, his attention should be on ideas more than on "correctness." If he later seeks to convey this information to others, then correctness is more important.

Some specific assignments that may work well for you include:

Journals/Learning Logs/Thinkbooks: students keep a record of what they're learning and connect new information to what they already know.

Admit Slips: students hand in a sentence or two "admitting something" -- Felicia doesn't understand vectors; Catherine finally finished her titration correctly. These give a teacher a sense of what is -- and what isn't -- being learned

"Timed" or "Free" Writings: before class starts, students write freely for 5 - 10 minutes on what they think will or should be covered. Before discussion, students write their ideas and opinions so they have something to say. At the end of class, students review what has been covered and ask questions.

Letters/Role Playing: students write letters to important people in a subject area about what they're learning (Benjamin Franklin, B.F. Skinner, James Watson) or write as if they were another person (a young woman in 1776, a stock broker in 1929.)

Re-teaching: students explain what they're learning to someone else -- a freshman in their field, another class

Multiple Drafts of formal papers, essay tests: professional writers and thinkers use writing to solidify ideas and form. They don't expect to "get it right the first time." Give students the same opportunity to wrestle with ideas and receive feedback before evaluation.

Thinking on paper: students "think out loud" on paper, explaining a problem to themselves as they solve it. This can help students remember the process of solving that sort of problem and let the teacher see where confusion may arise.

Some hints for making writing-to-learn work include:
* Students may be hesitant to show a lack of knowledge in writing, yet this ability to be tentative is essential to building new knowledge. Remember to encourage, rather than discourage whenever possible. Pose questions and offer suggestions that will help them form correct concepts.
* Encourage students to write to themselves for themselves or to you as a facilitator of learning rather than a judge. Don't be dismayed by the surface appearance of what they write -- the ideas and thought are most important.
* Make assignments clear and realistic. Know exactly what you expect students to get out of an assignment, how you expect it done, and let the students know, too. Write the assignment yourself, whenever possible, to make sure it works. If you grade assignments, share your grading criteria with the students.
* You don't have to be an English teacher to have your students write. Use writing to serve your ends, to teach and reinforce your subject.

This is just a brief sketch of information about writing-across-the-curriculum. If you want anything explained in depth, please ask. If you prefer written explanations and examples, I have the usual Ph.D. student-size pile of articles I'd be happy to share.
For the purposes of my research, I will need:
* to meet with you regularly (weekly?), interview you about how class is going, and troubleshoot any problems that may arise.
* to interview 3 or 4 of your students periodically (weekly or bi-weekly) about their attitudes toward what is going on.
* to formally survey all your students at the beginning, middle, and end of the semester, using a short-answer questionnaire.
* to sit-in on and observe your class periodically.

Appendix B

Sample survey

"Writing-to-learn" indicates writing assignments which are short, informal and often ungraded. Some examples of writing-to-learn include:

Journals: you keep a record of what you think about what you're learning

"Timed" or "Free" Writings: before class starts, you may write freely for 5 - 10 minutes on what you think will or should be covered. At the end of class, you might review in writing what your teacher covered and ask questions.

Thinking on paper: you "think out loud" on paper, explaining a problem to yourself as you solve it.

(*note: your instructor may use some of these writings, or may use other, similar assignments)

For each statement, please circle the answer that corresponds to your response.

1) Writing-to-learn will keep this course from covering as much material as possible.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

2) I will not do writing-to-learn on my own.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

3) Writing-to-learn will help me learn.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

4) Writing-to-learn will take time away from learning.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

5) Because of writing-to-learn, I will need to "cram" less.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

6) Because of writing-to-learn, I will need to spend more time studying.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

7) Writing-to-learn will make the course information easier to remember.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

8) Writing-to-learn will make course information harder to understand.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

9) Writing-to-learn will take time away from better ways of studying.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

10) Writing-to-learn will not make the course information more personally relevant.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

11) Writing-to-learn will make the course information more interesting.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

12) This course will require too much writing.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

13) This course will require too little writing.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

14) Writing-to-learn will help me create and develop my own ideas.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

15) Writing-to-learn will not show me that my ideas have merit.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

16) When I have to figure things out:

Writing will help a lot	Writing will help somewhat	Writing will neither help nor hinder	Writing will hinder somewhat	Writing will hinder a lot

17) Compared to other students you know, would you say you are:

A better learner than most	A better learner than some	About average	A worse learner than some	A worse learner than most

18) Compared to other students you know, would you say you are:

A more effective writer than most	A more effective writer than some	About average	A less effective writer than some	A less effective writer than most

19) When you have to do a writing assignment (especially longer assignments like papers and essays) do you feel:

Very apprehensive	Somewhat apprehensive	Neither apprehensive nor confident	Somewhat confident	Very confident

20) Approximately how much non-assigned writing do you do?

none	1 - 3 pages per week	4 - 6 pages per week	7 - 9 pages per week	10 or more pages per week

21) I feel the professor will know more about me as a person because of writing-to-learn.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

22) I feel I will not know the professor as a person better because of his/her reading my writing.

Disagree strongly	Disagree moderately	Neither Agree nor disagree	Agree moderately	Agree strongly

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