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Terry, the student across from me, had failed junior social studies the previous year and was taking the course again in order to get enough credits to graduate from high school. I was interviewing him because his teacher had participated in the National Endowment for the Humanities-sponsored "Writing-to-Learn" workshop the previous summer, and I wanted to find out what he thought about writing to learn. Terry spoke haltingly, searching for words. I asked whether he liked to write, and he shook his head, but when I asked about his journal, Terry's face brightened, and he said that he liked this daily writing. When I asked why, he responded, "Writing makes more thoughts in my head."

Writing as Terry defined it was not the writing that had always been his enemy, the writing asking him to show what he knew (or more often didn't know). It was not the kind of writing to which a teacher could respond with "right" or "wrong." Writing in his journal was something Terry did for himself, to "get more thoughts" about what he was reading. If I had tried to explain the difference between transactional and expressive writing or had tried to distinguish between reflexive and extensive writing or contrasted heuristic and explicative uses of prose, Terry would have stared with glazed eyes (Britton, et al. 1975; Emig 1971; Nystrand 1977; Flower and Hayes 1977). Yet, he demonstrated comprehension of these distinctions by his claim that the writing he did in his journal was different from the other writing he did; Terry had discovered the difference between writing to show learning and writing to learn.

Writing to show learning has been a standard part of the curriculum for many years. We teachers have routinely asked students for written evidence that they have mastered such things as the difference between mitosis and meiosis, the causes of the Civil War, and the symbolism of *The Scarlet Letter*. While this kind of writing has been helpful

1

to those who must evaluate (sort and place) students, there is some question of how writing to show learning has helped students. In fact, in recent years many educators have deplored the dominance of writing to show learning because it has been accompanied by neglect of writing to learn.

According to this line of thinking, writing is a powerful means of learning, and students should be given opportunities to use writing to get course material "right with themselves" (Britton 1975), to create their own "webs of meaning" (Vygotsky 1962). One of the strongest statements of the need for emphasizing writing to learn comes from Randall Freisinger, who makes a direct connection between documented student inability to handle formal operations and schools' general lack of attention to the value of writing to learn. Freisinger states that the "cognitive impairment of a significant number of our students" is due to schools' neglect of the learning function of writing (1979).

The cognitive impairment to which Freisinger refers is best described in terms of Piaget's description of intellectual development. In Piaget's terminology the transition from concrete to formal operations is marked by the ability to think abstractly. Societal claims that schools do not teach students to think are validated by research. Some studies show that by the time students enter college only one-third of them have made the transition from concrete operations to formal operations. The National Assessment of Educational Progress found that students were able to make statements about what they read but less than 50 percent of them could offer any explanation or justification for these statements. Despite considerable effort on the part of many teachers, students are not getting as much from school as they could, and many of us see evidence of this problem in our own classes.

When students cannot function at the level of formal operations, they have difficulty discerning cause-and-effect relationships—for example, explaining or understanding how to solve a word problem in math. These students have difficulty forming and comprehending propositional statements; they may not be able to write a convincing argument about the causes of the Civil War. These students have difficulty discriminating between observations and inferences, which means that they may not be able to distinguish plot from theme in a novel. These students have difficulty drawing inferences from evidence, which means that they may not be able to explain the significance of a scientific experiment even if they conduct the experiment flawlessly. These students have difficulty analyzing a line of reasoning; they would probably not be able to make sense of a statement such as "I think, therefore I am." These students have difficulty visualizing

outcomes; they may not be able to see how a series of events could lead to conflict. These students have difficulty drawing analogies, which means that their capacity for learning is limited because they cannot see what one set of information has in common with another.

Many of the teachers I know shared my concern with the quality of students' learning, but they felt the need for a bridge between accepting writing to learn in theory and implementing it in their classes. Our work in the Puget Sound Writing Program (a site of the National Writing Project) demonstrated the power of collaborative work and simultaneously provided an opportunity for an initial exploration of writingto-learn strategies that could be used in the classroom. A generous grant from the National Endowment for the Humanities enabled us to move from these initial stages to full-scale implementation.

We feel that our account is worth sharing, not only because it is a success story, but because we assume there are many secondary teachers who face the same quandary we did three years ago, teachers who are convinced that writing can aid learning but who are uncertain of how to begin—or, more likely, are jaded by the succession of gimmicks that have flashed and fizzled. Accordingly, this is not simply a collection of "things to do on Monday," although many practical classroom activities are offered. Rather, individual chapters in this book provide an excursion into the mind and classroom of a secondary teacher, a teacher harrassed by such conflicting demands as coaching, participating in professional organizations, grading papers, advising students, handling administrative tasks, and serving on committees: A teacher who speaks with the authority of several years of using writing as a way of learning.

These teachers will take you into their classes to see how writing fosters learning in math, science, English, social studies, foreign language, philosophy, psychology, and art. They are not teachers who have special facilities or unusually able students. Their classes—in urban, suburban, and rural schools—are crowded, and they have the usual mixture of problem, average, and gifted students. Before you enter their classes and see for yourself how these teachers use writing to help their students learn, I would like to provide some background about the assumptions and experiences from which these teachers operate.

# A Way of Thinking, Not a Set of Facts

Secondary education should provide students a way of thinking, not a set of facts. In our complex and ever-changing world, teachers cannot

hope to give students all the information they will need for their lifetimes. Much of what students learn in schools will be obsolete in a few years; therefore, teachers need to give attention to learning that goes beyond assimilation of information. The measure of success in education should be how well students can think rather than how much of the teacher's knowledge they take with them as they leave class. Put another way, the secondary teacher aims to make students independent thinkers.

Recognizing the preeminence of thinking over facts means changing ideas about "covering" material in a course. Many of the teachers involved in the Writing-to-Learn project came to the conclusion that reading a specific number of chapters was less important than working with a small number of chapters in a way that enables students to make connections with the material.

# Writing to Foster Abstract Thought

Writing is uniquely suited to foster abstract thought. As cognitive psychologists and composition theorists have noted, writing is an extremely focused activity which simultaneously involves hand, eye, and brain. The linearity of writing, one word after the other, leads to more coherent and sustained thought than thinking or speaking. The physical limitations imposed on writers make writing a slow process (slow relative to thinking or talking), and this slowness seems to free some parts of the brain for the discoveries so common among writers.

## The Value of Unfinished Writing

Unfinished writing has value, just as finished writing does. Education that emphasizes writing to show learning assumes all writing must reach a final stage, one which can be "graded" or examined for form and content. However, writing to learn means accepting the value of writing that does not lead to a finished product, writing that evinces thought but does not merit the careful scrutiny which a finished piece of writing deserves. Another way of saying the same thing is to say that writing to learn is not the same as prewriting. Many of the strategies described in this book may resemble activities used in the early stages of writing a finished selection; while some writing to learn does indeed lead to finished writing, that is not its essential purpose. Writing to learn is not "pre" anything; it has value in and for itself.

# More Than Merely Writing

The fact of writing does not itself constitute writing to learn. While fluency in writing is an important goal, one essential to writing to learn, the mere act of writing does not guarantee that learning is occurring. It is possible for writing, like any other school activity, to be done mechanically so that students learn nothing. The implication of this is that teachers need to consider which writing-to-learn strategies will accomplish their goals and to monitor their students' writing to be sure that learning is occurring.

## Differs from Writing across the Curriculum

Writing to learn has different goals from writing across the curriculum. 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.

# Not a Formal Approach

As the diverse approaches in this book indicate, there is no "right way" to use writing to learn. Although the general approach is solidly grounded in theory, there are no quick fixes or rigid systems for implementing writing to learn. Rather, as is true of all good teaching, it is the responsibility of the individual instructor to select from a wide range of approaches those which seem best suited to accomplish course goals.

## **Changes in Teacher Behavior**

Writing to learn requires changes in teacher behavior. When writing-tolearn strategies are introduced in a class, the teacher's role changes. Instead of being the source of knowledge, she or he becomes a guide who helps students find their own knowledge. In practical terms this often means adopting a more student-centered teaching style. However, the shift toward student-centered teaching does not relieve the teacher of any responsibility. In fact, it becomes even more important for the teacher to exert leadership and control: without firm guidance students who write to learn will flounder.

# No New Course Content

Adopting writing to learn does not mean changing course content. The writing-to-learn strategies discussed in this book are not intended to change the substance of courses in any discipline. Rather, they are to be incorporated into existing courses as a way of enhancing learning. Some teachers have found that extensive use of writing to learn meant that they did not "cover" the same amount of material as they had in past years, but these teachers were convinced that the increased quality of learning more than compensated for the slight decrease in quantity.

While these assumptions are common to all the authors represented in this collection, each chapter takes a slightly different angle on writing to learn. Chapter One provides a comprehensive overview of a writing-to-learn classroom as Steve Pearse explains how he sets his class up at the beginning of the year, integrates course goals with writing-tolearn strategies, and evaluates his students' progress.

In Chapter Two Priscilla Zimmerman explains how writing helps her students learn to make connections between art appreciation and art production. She also used writing to develop the perceptual skills, aesthetic criteria, and specialized vocabulary that facilitate informed appreciation. This connection between specific course goals and writing to learn is maintained in Chapter Three. Deborah Peterson explains how her students write to develop insight into cultural and historical phenomena and to learn more about the grammar of the German language.

In Chapter Four Bruce Beaman shows how he uses writing to ensure that his students understand historical reasons for today's headlines, develop self-esteem, and broaden their concept of phenomena such as suicide, apartheid, and religious differences.

Chapter Five demonstrates that writing to learn can be used effectively with a wide range of students. Ray Marik explains how his special education students use writing to learn more about U.S. history. Ray's "touchstone" concept allows students to deal thoroughly with a few topics rather than rush through many superficially. Writing fosters engagement with what they study.

Patricia Johnston, in Chapter Six, demonstrates how writing helps students learn scientific vocabulary, develop more insight into orga-

nisms they study, and understand their lab experiments more completely. In Chapter Seven Don Schmidt shows how students can write to overcome their anxieties about math and to enrich their understandings of mathematicians and tools of math. Schmidt assumes, as do most teachers who use writing to learn, that affective learning is as important as cognitive development.

Sophisticated concepts of philosophy can be made accessible to students through writing, and in Chapter Eight Jessie Yoshida explains how writing brings her students closer to works by authors such as Plato, Sartre, and Niebuhr. Tom Watson explains in Chapter Nine how Washington State History (or any history course) comes alive for students when they use writing to project themselves into the material being studied.

The last six chapters consider more encompassing issues of writing to learn. Both Steve Arkle and Syrene Forsman explore the relationship between writing and thinking by looking at the kinds of tasks students accomplish in their literature classes. Janet West explains how writing to learn can liberate rather than imprison instructors because it enables students to take responsibility for more of their own learning. In Chapter Twelve Patricia Juell presents ways of initiating and using course journals to get the most effective learning from writing. The two concluding chapters consider writing to learn from a more objective perspective. Barbara Bronson recounts her visits to writing-to-learn classes in Chapter Fourteen, and in Chapter Fifteen Ralph Stevens reports on the responses of the ultimate judges, the students.

A glossary and an annotated bibliography appear after the final chapter. The bibliography suggests further reading, and the glossary explains the bold-faced terms used throughout the book. Although some of the terms used here are novel, they represent "naming" rather than "inventing." The approaches they describe are based in existing theory and research, and the authors included here have merely identified what already existed.

The process of writing and rewriting this book has been a learning experience for all involved. Our hope is that it will fulfill one of the mandates articulated by Arthur N. Applebee in *Writing in the Secondary School*, the research report that chronicles the limitations and meager quantity of writing in schools across the country. In concluding his report, Applebee writes:

As a first step in improving the writing of secondary school students, then, we need more situations in which writing can serve as a tool for learning rather than as a means to display acquired knowledge. Bringing this about will take further work in [providing] . . . practical descriptions of specific techniques and activities that can be successfully incorporated into the various content areas (including English)—descriptions of "good practice" that will make sense of the subject-area teachers involved (Urbana, Ill.: NCTE, 1982).

We invite you to enter individual classrooms and minds in the hope that our work will help you see ways of using writing to give life to the roots in the sawdust of your classes.