2 Making Every Subject Language Rich

Language across the curriculum is still an unwieldy term for many people in education. It is common, for example, for workshops in language across the curriculum to be misunderstood as concerning its subtheme *writing across the curriculum,* itself an exciting, burgeoning concept, but far less encompassing. Writing across the curriculum will be a major concern in this survey of theory and practice and in the classroom vignettes to follow, but we need to distinguish it from the larger idea for an important reason. Writing is usually thought of as being done by elementary-age children more frequently *in* school than out, or *for* school rather than for other purposes. Though this generalization may not be entirely true, most would agree that writing in the school is usually initiated by the teacher. Hence, like most other elements of the curriculum, writing is thought of as something "we" would like "them" to do and know, because they'll need to know how to write for their future schooling and beyond. As a result, books and articles on writing across the curriculum tend to focus on describing assignments and management techniques that will make writing exciting to the students. Of course, many have argued that writing is just as natural a mode of language as is talking or listening, and that it is the schools' limited, mechanical view of writing that has made students resist it (a topic to be discussed later in the chapter). Nevertheless, we tend to view writing as one more subject that we teach to students.

By contrast, *language* across the curriculum, since it includes talking and listening, describes both naturally occurring phenomena (natural in the sense that most children talk and listen from infancy) and formal goals and activities in the school. The irony of talk in schools is that probably more ink has been spilled and more arguments in the teachers' lounge have been generated over how to quell talk than how to encourage it. Talk within the group, because of its tendency to move associatively—to take off on tangents—has often been seen as the enemy of curriculum, particularly in areas where teachers feel pressured to accomplish "coverage" objectives or to move from topic to topic, skill to skill, according to a fixed plan. As long as

teachers and administrators do not acknowledge the vital role of all the language modes in their students' learning, they will not be likely to make room in their curricula for the volatility and unpredictability of talk.

Learning through Language

Consequently, reports of research findings on the mesh between language and learning have been aimed at convincing school leaders of the vital need for active expression by all children in all school subjects. Central to this movement have been the books by James Britton, Douglas Barnes, and their associates in the British Schools Council Project, a research project ongoing since the 1960s. In *Language and Learning* (1970), Britton reported his original research with children from infancy through adolescence and drew on findings of Jean Piaget, Edward Sapir, Jerome Bruner, Suzanne Langer, and many others. He concluded that from infancy onward the most important function of talk, as of writing, is "commentary" (making sense for oneself out of the randomness of perceptions) and that we must speak or write about an experience in order to understand it and thus to be able to use it to create expectations. While noting, with the Russian linguist Lev Vygotsky (1962), that much of the private talking aloud that goes on in early childhood becomes "inner speech" later on, Britton nevertheless demonstrates that older children and adults turn to verbalizing in times of stress and confusion (as we say, "just to get our thinking straight" or to "talk it out"). Putting our thoughts into words, wrote Vygotsky, is our only means of selecting among the myriad images that assault our minds, and our only way of giving them a form that we can deal with. Extending this idea, Julian Jaynes (1977) argued that consciousness is not possible without verbalization, either internal or aloud, because words are our only means of bringing the new, the unknown, into the world with which we are familiar. Moreover, as Janet Emig (1977), William Irmscher (1979), and many others have said, we can only assimilate new information through "our own" words; i.e., words with which we are comfortable, whose meanings we feel we can control. Thus, we can't understand another person's ideas merely by reading and trying to remember his or her words.

We can illustrate this by considering any conversation in which one person is trying to explain something to another. Inevitably, the explainer must repeat parts of the explanation in response to questions from the listener. Usually this repetition involves revising the

message to add details or to change the vocabulary. Ironically, but not surprisingly, this give-and-take frequently leads the explainer to realize that he or she may not really have understood what he or she is trying to explain to the other person.

We might say that this typical process reveals a flaw in communication, but language researchers would say that this mutual groping for clarity is part of the very nature and function of language. Written or spoken, they would say, language is first and foremost our best tool for trying to understand; only secondarily is it a tool for communication. Moreover, they say, neither function is efficient; when we try to speak or write to others, we are betting (hoping) that our audience will give the same "sense" to our words that we do. But this is unlikely, since each person attaches idiosyncratic, unshared meanings to many words. Because these personal meanings are themselves changed over time, our words tend to lose their ability to communicate, even with ourselves. Thus, we rarely reuse the same words and sentences to explain what we think is the same idea or to recall an event for a second time. The difficulty is compounded when we try to relate these ideas and events to someone else. As Linda Flower (1979) has shown, most of our apparent effort to communicate with others is actually our further effort to make meaning for ourselves. Invariably, we fall short.

This theory of language and learning, insofar as it is true, has immense consequences for the classroom, no matter what subject is being studied. I will discuss three consequences in detail.

1. *Children will understand, and thus remember, only what they have the opportunity to talk about (and, perhaps, to write about, sing about, draw, make plays about, etc.).*

Jerome Bruner (1966), Janet Emig (1971, 1983), and Nancy Martin et al. (1976) are among those whose research emphasizes this first consequence. Martin and her colleagues present transcriptions of student dialogues in science labs, which show how such talk causes each person to raise new questions about an experiment and to allow the students to help one another understand the observations. Anne Wotring and Robert Tierney (1981) show similar results in relation to journals kept by high school biology and chemistry students, while Barry Beyer (1980) and especially Donald Holsinger (1983) show how a variety of language activities is essential to any understanding of history. Barbara King (1982) and Minja Paik and Eugene Norris (1983) are among those who write of this phenomenon in mathematics. Specific classroom practices that derive from this consequence are described in the chapters that follow. Other sources of language-to-learn activities across the curriculum at the elementary and preschool levels

are Stephen Tchudi and Susan Tchudi (1983) and Ann Jeffries-Thaiss and the author (1984).

Crucial to understanding all these writers' work is James Britton's concept of the *spectator* versus the *participant.* Most of our language use is in the spectator role, in which we give order to an experience and try to express our feelings about it. Less frequent, except in traditional school assignments, is participant language, with which we try to "get things done" between us and others. Developmentally, giving the spectator every occasion to play with ideas and try out interpretations is crucial if the participant is ever to emerge. Those school programs that encourage students to write and speak mainly in the participant mode (through recitations, oral reports, and written tests) are not really language-across-the-curriculum programs; they are depending on someone else—the parents and the children themselves—to do the important, basic work. In such programs, the few who are already well educated in the spectator role will succeed as participants, while most will do mediocre or poor work.

Where learning, i.e., language, is really important in a curriculum, the roles of both spectator and participant will be played, with the spectator receiving top billing. The child will still give oral presentations and write reports and stories, but more time and effort will be devoted to less formal activities—such as discussions, games, journal writing—that both promote the spectator's understanding of perceptions and ideas, and help children become relaxed, confident language users. In what I call the language-rich, learning-intensive classroom, a spirit of experimentation, of play (which, as John Holt reminds us, is serious business for children), will reign. The teacher will be more a listener than a talker, and most of his or her talk will be in response to the children, either as questioner, to help the children take their thinking in new directions, or as *one* source (not *the* source) of information. Writing will contribute to this experimental spirit through emphasis on its great value as a tool of discovery and as a tool of imagination. As the following chapters will show, corroborating the findings of Donald Graves (1983), Lucy McCormick Calkins (1983), and others, young children find writing, like drawing, to be a comfortable way of giving form to their ideas and of claiming ownership of what they know. Nothing is quite like the pride children feel in the stories they write, whether fantasy or nonfiction.

Furthermore, children's writing, like their talk, gives them and others—including the teacher—further food for thought. Emig (1977) and Donald Murray (1983, 1985) have written with particular power of writing's ability to take us to insights, to new ways of understanding. When writing for ourselves in journal format or in freewriting

exercises (see Ken Macrorie 1977), this function of writing is particularly apparent. The authors, noted above, who have written about writing in relation to particular subjects (math, history, etc.), are specifically concerned with this virtue of writing, as well as with the precision of thought it tends to foster.

2. *Children can learn to read and listen beyond mere word recognition only if they regularly practice expressing their own meanings in speech and writing to themselves and others.*

Since reading and listening hold a central place in the traditional curriculum, at all levels, language-across-the-curriculum research has stressed the *reinforcing* nature of the four language modes. Martin et al. (1976) and Mary Barr et al. (1982), among others, illustrate this principle through student writing samples and by citing teachers who have improved their students' higher-level reading abilities through such methods as the reading-response journal. The scenarios to follow, such as the description of Al Lengel's "Opinion/Commentary" assignment in chapter seven, will show how children's motivation, planning, and comprehension improve when their reading becomes an occasion for expressing their opinions and for comparing their views with those of the teacher and other students. In such classrooms, reading, like the other language modes, is translated from a mere "skill"—isolated for special attention in a fragment of the school day—into a way for children to discover, and own, information on any topic. Reading also becomes a source of inspiration for the children's own writing: for example, a poem may provide a model or pattern for the children's own verse; more important, reading will provide ideas and points of view that children can argue with and embellish. The teacher can challenge the student to imagine changes in a story, or to rewrite a character because of new information added to a plot.

Perhaps the integration of the language modes most affects reading development by changing the child's view of what it means to be an author. In language-rich classrooms the children often become authors themselves, with their stories, autobiographies, essays, and reports being read to other children and published, with laminated covers perhaps, for the school library. The complex process of writing—brainstorming ideas, gathering information, testing ideas out on the page, revising, gathering more information, and so on—can give children real insight into the process followed by the authors of the books they read. When children's reading and writing, and speaking and listening, are seen as a continuum carried on between people and from person to person to person, then children can begin to identify

with the writers whose works they read and can see those writers as companions. If this sounds like a grandiose way of describing the text-child relationship, that is only because for so long school communication has followed a radical model: top-down and one-way—the supposedly authoritative text (and authoritative teacher) to the supposedly ignorant child. But with the findings of the linguists and cognitive scientists concerning the essential interrelatedness of understanding and expression, clearly the conventional model is insufficient, and is being supplanted by one that recognizes and builds upon the child's knowledge. Nowhere is this new model more evident than in our view of the composing process, which we have learned to see as similar in many ways for both children and adults, neophytes and professionals. By seeing writing as an ineluctably *recursive* process (Nancy Sommers 1980), which always "turns back" on itself in messy, unpredictable ways because of the uncertain mesh between words and meanings, we have discarded the old metaphor of the gulf that lies between the genius who is "born" to write well and the child who "does it wrong" because writing is not easy for him or her. In its place we now affirm the idea of writing as craft, which can be learned by almost everyone but which never becomes easy or automatic for anyone, including professional authors. If children know this, and if children themselves are frequent writers, then those children come to appreciate the books they read for the skill and perseverance of the people who write them; moreover, these children do not feel cut off from the achievement of similar or greater mastery.

Linguistic and cognitive research has had as profound an effect on attitudes toward listening as it has had on attitudes toward reading. The old model of listening presents a quiet person who "pays attention," "takes it all in," and then "gives it back" when called on to recite or to write a test answer. This model conforms well to the radical authoritarian model of smart text/teacher and ignorant child. The best-known skill associated with this model of listening is that of "orderly and complete" notetaking, which means taking down as quickly as possible as many of the speaker's exact words as one can. The aim of such listening and recording is not thinking or knowing, but the ability to "give it back." Most students learn this model so well in their early education that they find it nearly impossible in their later years to *interpret*—that is, to relate what they see and hear to other parts of their experience—or to use spoken or written information in any other personally meaningful way. By trying to sever expression from the learning process (the classroom "so quiet you can hear a pin drop" is still an ideal in many places), teachers can make

knowing impossible, according to the definition of knowledge developed by the cognitivists and linguists.

To nurture thought, and thus knowledge, speech and listening theorists have suggested key functions that oral communication should serve in school, at work, and at home (R. R. Allen and Robert Kellner 1984; Barbara Wood 1984), including the following:

1. Controlling: the effort to influence others or respond to others' attempts to control (e.g., bargaining, refusing)
2. Sharing feelings: expression of emotion or our response to feelings of others (e.g., anger, support)
3. Informing/responding (e.g., explaining, questioning)
4. Ritualizing: initiation or maintenance of social contact (e.g., greetings, small talk)
5. Imagining: creative interpretation of reality (e.g., storytelling, fantasy)

These writers have shown how the key functions of oral communication can be integrated across the curriculum, as well as made integral to other language modes. The following chapters will present numerous examples of talking and listening, between teacher and student and between and among students, that illustrate these key functions in action.

Of all the strategies by which teachers reinforce the other language modes through talk, no doubt the use of small groups, from pairs to nine- or ten-member teams, has received the most attention. One reason for this has been the proven importance of peer comment on the writing of both children and adults (e.g., Britton et al. 1975; Thom Hawkins 1976; Donald Graves 1983). Moreover, such groups have also allowed teachers to give children practice in performing all the key functions listed above. When students in the early grades work in groups, as in chapters three and four, the language interaction in the school can take advantage of, and really be an extension of, the group dynamics that the children learn at home and at play. That such peer interaction creates a natural and effective learning environment has been demonstrated by Britton (1970) and such others as Mike Torbe and Peter Medway (1981), Donald Rubin and Kenneth Kantor (1984), and Joan Isenberg and Evelyn Jacob (1985), whose analyses of conversations have shown how even very young children teach one another and inspire one another's creativity. Britton has also shown how such conversations gradually teach children how to take turns and share leadership. If such work is reinforced in the schools, with the teacher

modeling, guiding, and supervising the interaction (e.g., Wood 1984), then all children, including the more reticent and the more outspoken, can profit from peer learning.

The teacher who uses talk to stimulate learning must tolerate—indeed, exploit—the tendency of conversation to grow associatively from topic to topic rather than to follow logically the subthemes of an idea. Since curricula tend to be organized in restrictive, carefully focused units, many teachers have shied away from encouraging discussion and conversation. But, say the cognitivists (e.g., Robert Ornstein 1975), by thwarting this associative flow, educators prohibit students from creating patterns of related ideas and images (Charles Suhor 1982) and thus make it difficult for children to give order and meaning to their experiences. One important role for the teacher in the language-rich classroom is to help children see how their flood of ideas does form coherent patterns. The teacher, in supervising conversation, can perform the analytic function of pointing out new ideas that the conversation has led to, and can ask salient questions that push children to consider apparent contradictions or new information. The teacher can also help children learn how to bring a conversation back from free brainstorming to focus on an original question, and thus how to use the insights the brainstorming has given them. In this way, teachers help their students achieve versatility as learners, speakers, and listeners, while keeping discussion within the context of the curricular program. Again, the following chapters show how specific teachers achieve these results.

3. *Children learn only if knowledge is defined in action as a dialogue, or conversation, between teacher and student, student and student, student and the text, and student and the world.*

This third consequence of language-and-learning theory means that knowledge must be redefined in the school. Where I concluded the last section by suggesting how teachers could strike a balance between formal program demands and their students' needs as learners and communicators, this section takes on what we mean by curriculum itself.

One reality of American education is that curriculum is constantly in flux. In such areas as science, math, and history, what we teach rides the winds of change in technology, politics, school finances, and standardized testing, to name a few major influences. As the "knowledge explosion" continues, the main direction in curriculum seems outward, with ever more added to what must be "covered." Witness the current concern of school districts to bring computers into the classroom and to train teachers, as well as students, to use them. What

does not seem to change, however, is our sense of knowledge as a thing, like food, that exists inanimately outside the person and must be deliberately ingested in discrete bits. We expand the school day, or increase the number of separate periods or units, in order to cram into the curriculum every*thing* we want our children to be "exposed to." No wonder teachers feel overwhelmed; no wonder their frustration that they must continually move on to something else "just when things have really gotten going."

In this light, many might greet language across the curriculum as just more stuff to be crammed into the schedule. This is a natural reaction, given that most elementary curricula, like those at other levels, isolate the "language arts" as a period unto themselves and concoct a *separate content* (basal readers, spelling, and grammar worksheets, etc.) for them. Thus language is one of the dishes that make up the educational meal. Operating on this metaphor, language across the curriculum—in science, math, history, etc.—would be like adding an extra bit of salad to the meat, to the potatoes, and to the dessert. But if we accept the researchers' findings that language and learning *cannot* be separated, then the food metaphor no longer works. Or if it does, it's only because we have changed the relationships. Knowledge is not the food on the plate, or the plant growing in the field, or the food being transformed into blood and tissue; knowledge is the entire process of growth and digestion and further growth. The knowledgeable person does not merely accumulate words and sensations, but makes those elements into knowledge through analysis and imagination—through constant, intense, active building of what Vygotsky called the "web of meaning." Our idiom captures this definition of knowledge in the phrase "in the know." The person in the know is at home in his or her world. This person understands the roles, the relationships, the personalities of people; this person knows what to listen for and what to say, how to say it, and to whom. This person's knowledge is inseparable from doing. In fields of study, the person in the know is he or she of insight, the one able to put appearances together in imaginative patterns so that we can use them in new ways. This person applies language-and-learning theory in what we might call an active appreciation of the relativity of fact. That is, if knowledge—"fact"—cannot be separated from the language we use to express it, and if language, as shown earlier, changes its meaning from person to person, then the knowledgeable person does not swallow other people's explanations as fact, but takes on an open-minded, experimental attitude. He or she is always prepared to see new relationships, draw different conclusions. The more we use language, the more we learn that knowledge is a dynamic and ever-changing thing.

This language theory of knowledge, while it calls into question our conventional thinking about curriculum, conforms easily to dominant recent theories in the subjects we teach. The clearest example is science, which trusts experimentation—the systematic *search* for truth—more than it does assumptions or conclusions. Particularly in the last eighty years, science, led by Einstein, Bohr, and others, has brought about a change in what we can take for granted about the universe. With the fall of the Newtonian absolutes of time and space came a reevaluation of basic assumptions not only in science but in all fields, language study included. The result has been an increasingly open attitude toward truth; specifically, an increasing appreciation of how culture and personality shape our interpretations of reality. Unfortunately, since schools, in method and model, have tended to maintain the bits-and-pieces view of knowledge, they have been ill suited to adapt to these changes. However, when a language-across-the-curriculum attitude is brought to bear on the teaching of science, for example, emphasis shifts from isolated bits of trivia ("What is the boiling temperature of water?") to such basics of scientific method as precise observation and hypothesizing. When students write their descriptions of a swimming goldfish and then compare their descriptions with those of one another, they learn that others see differently from themselves and they learn to expand their notions of the seeable. When they are asked to speculate in writing or in a brainstorming session on how life in outer space might look—and why it would look that way—they learn to speculate, to hypothesize, in a scientific way.

Changes in other disciplines also call out for a learning-through-language approach. For example, it may have been possible at one time to teach a "standard" American history course on the formation of the federal government and the westward movement of European settlers, but with the recognition of the pluralism of our society and thus its many histor*ies*, children must now learn history as ways of interpreting events, not only as items on a time line. Children can write the histories of themselves, or they can build histories of their towns or neighborhoods from interviews and newspapers, and thus learn how historians work, and how elusive the past can be. They can understand how historians must select details and must use their imaginations to make sense of fragmentary memories and conflicting reports. Comparing their work with that of other students can teach them how to defend their conclusions and how to tell a story that is both interesting and true.

Perhaps no discipline so merits attention from a language-across-the-curriculum perspective as mathematics, since on the one hand the "facts" in the field seem so definite, yet on the other hand so few

children do well. Math educators have long recognized that the abstractness of the rules and symbols and their seeming arbitrariness thwart the attempt of many to comprehend them, much less understand them. Consequently, recent theory, spurred in part by the computer revolution, has tried to subordinate the symbolic questions and give primacy to what the cognitivists would call the need to quantify and to find a language that can represent the process. In other words, mathematics has been moving toward a more inductive, "problem-solving" emphasis (e.g., Gyorgy Polya 1971), which presents to the student "real-life" situations that call for problems to be identified and quantitative solutions suggested. Often these situations don't present themselves in a conventionally mathematical way (e.g., "If you have ten cookies and divide them equally among five children, how many will each child receive?"). Rather, these situations appear nonquantitative in nature; for example, students may be asked to solve a crime, and will be given a list of suspects, a few characteristics of each, and a list of details from the scene of the crime. The goal of presenting such situations is to give students practice organizing and classifying information so that it yields a practical result. With the teacher's help, students learn to see that they cannot solve such problems without creating a symbolic language, or shorthand, as a way of keeping all the data in order and then manipulating these data in a convenient way. Such practice builds in the learner a math "sense," the basis for all further analytic reasoning; such practice also gives the child greater motivation to learn mathematical symbols and operations, which are needed to solve these practical puzzles.

Computerization demands this approach to mathematics. Because computers "speak" and "read" in mathematically precise ways, we can't use (i.e., program) them without being able to phrase and solve actual problems in a precise symbolic way that the computer can read.

In language terms, learning quantitative analysis and mathematical symbolism is language learning of a most creative kind. Thus, expressive writing in the spectator mode is vital here. As scientists, mathematicians keep notebooks of their brainstorming or test out their notions on the computer. Only through discovery, revision, and further discovery do math operations and computer programs, like poems or grant proposals, become straightforward and effective. Mathematics and computer science teachers apply these lessons by having their students keep journals, or "thinkbooks," in which they practice both putting mathematical language into their own words and speculating on mathematical solutions to nonmathematical (at least in appearance) problems.

Learning the Language: The Other Side of the Same Coin

To this point, I have talked about language across the curriculum as a way of understanding how learning can best and most fully occur in school. I have not talked about many of the things that teachers and parents frequently mean when they talk about language in the elementary grades: such things as spelling, vocabulary, and "correct" grammar. I do not mean to slight these aspects of language acquisition; indeed, my presentation has thus far dealt implicitly with them in that I have emphasized the need for a language-rich curriculum, one that involves children in a tremendous variety of language-using activities at all ages. The theory here is developmental. In a language-rich environment, where children read, listen, speak, and write as an essential way of learning, they will grow—sometimes gradually, sometimes amazingly quickly—into competent language users in every aspect of the endeavor. In particular regard to such elements as spelling, vocabulary, and syntax, the most important influence, besides direct use, appears to be modeling by others. By modeling I do not mean a teacher's standing before a class and asserting the value of correct spelling, etc. Similarly, I do not mean a teacher's testing students on arbitrary lists of words or assigning daily vocabulary and "grammar" exercises. These practices perhaps have a place in the language-rich environment, but not in place of other, more productive work.

Rather, the modeling I mean is characterized by enthusiasm directed toward personal, observable goals. For example, Jana Staton (1984) has reported the startling growth in standard English writing skills by Hispanic children whose teachers correspond *with* them in "dialogue journals." The key feature of these journals is that the teacher responds to the *content* of the journals—the children's feelings and beliefs—not their spelling, syntax, etc. Consciously or unconsciously, the student models his or her own writing on the teacher's, because the teacher is using the language in a way that shows sincere interest in the child. The very fact that the teacher is *writing* is significant modeling. Can we learn any art without the example of the person who teaches us? Consider music or painting, for example. This does not mean that teachers must be expert writers. It does mean, however, that children should have the opportunity to observe how the teacher goes about solving the challenges of composing. An easy way to do this is for the teacher to write along with the children as they keep their journals. Another is for the teacher to join with the class in composing, revising, and editing a common piece of writing—say a

letter inviting parents to back-to-school night, or a thank-you letter to the staff of a museum that the class visited. From the teacher's example, children can learn that composing takes lots of thought and lots of experimenting with combinations of words. This process can show them that writing is not and is not supposed to be an easy or "clean" art.

This emphasis on modeling suggests that we become better language users once we discover the rewarding things we can do with words, and that our conscious attention to *how* we use words—our spelling, syntax, usage, etc.—follows from the exciting discovery that people we respect or love gain happiness in various ways from writing and speaking. Conversely, for a teacher or parent to be too attentive to mechanics of speech or writing *before* a child has made this discovery is to inhibit the child's development as a language user. The experience of teachers at all levels who have their students keep journals, or learning logs, corroborates this finding. Indeed, students tend to write more coherent, fluent pieces as less attention is paid by the teacher to their mechanical use of the language.

How well this idea of the development of writing and speaking abilities complements the already described objectives of the language-across-the-curriculum classroom! It means that teachers who make writing and speaking a really integral part of each subject in the curriculum can feel confident that they are helping their students become better language users. Teachers at the secondary and university levels have worried that in order to make their classes language rich, they must "take over the job of the English teacher," meaning that they, too, must adopt the stereotyped role of the writing teacher as tireless seeker of spelling demons and dangling participles. These teachers have assumed that without the grammarian's specialized training and vocabulary, they do not know how to give their students profitable comment on their written or spoken work. But the example of Staton and others (e.g., Elaine Lees 1979) implies that the most productive comments are those questions and clarifications we make about the substance—the ideas—of the student's work, comments that are precisely *within* the teacher's realm of knowledge. Math teachers can comment on students' math journals because they know math; the same is true of every other field. It is certainly true of the multiple-subjects teacher in the elementary grades.

While teacher or parent comment is important in the development of language-using ability, writing-process research suggests that most of the practical benefit of writing and speaking accrues to the student irrespective of reader/listener comment. In citing his own and others' research of language learning by young children, Britton (1970) pointed

out that only a small fraction of babies' "practice" with words and utterances received parental or sibling "correction," or response of any kind. And as Vygotsky (1962) noted, this percentage of uncommented-on speech rises with the years, as we transform our language practice into "inner speech." By the time we are adults we seem to be formulating sentences in our minds incessantly and feel only the occasional need to express ourselves to others. We obviously operate on the principle that we are our own best teachers.

This is not to say that teacher or parent comment on children's writing or speaking necessarily stunts their learning to use these tools as well as possible. Certainly all children and adults (at least I've never heard a report to the contrary) feel encouraged and motivated by comments that show genuine appreciation and interest. Some of these comments don't even require words. Publicly displaying children's writing, requesting children to read their essays and stories aloud in class, and publishing children's writings in typed, covered books tangibly show the child that his or her words mean something to us; in specific regard to speech, nothing more encourages a child than our sincerely listening to him or her and engaging the child in true conversation. As chapter six on Cynthia Dietz's speech class will show, children can demonstrate dramatic improvement in *how well* they speak if given the opportunity to converse with a teacher about a subject of their own choosing.

Conversely, nothing may so inhibit young (or old) writers and talkers than our sensitivity to the flaws in their language. The person who picks apart our words in writing or conversation doesn't nurture our improvement—unless and until we've developed strong self-confidence in our powers of expression. Lacking this strength, we merely clam up in that person's presence and never show that person our writing. Yet teachers routinely, with conventional "good intentions," mark the errors in children's writing or correct their pronunciation and grammar, while ignoring what the children are saying. One of the great findings of Mina Shaughnessy's research with open admissions college students (1977) was that their mechanical proficiency could not improve until they had become *fluent* writers, their work nurtured in an atmosphere that patiently tolerated the mistakes they made, *so that* they would be encouraged to take ever-greater risks with a language they had yet to master. Marie Nelson's work with English as a Second Language students (1985) has provided further impressive support for this approach at the college level, while the work of Graves (1983) and others (e.g., Marcia Farr 1984) has provided continuing strong evidence among elementary students. Though teachers often feel pressured by PTAs and school boards to "attack" mechanical

deficiencies immediately and relentlessly, results seem to be more thorough and lasting (e.g., Linda Reed 1984) if fluency is first in the teacher's priorities. Again, the language-across-the-curriculum classroom is the ideal place for this fluency to grow.

I am not thereby implying, however, that children should never be corrected for their misspellings or missing commas. Most children want to learn the correct spellings for the words they use and learn how to punctuate their sentences, and teachers should always take advantage of a child's "How do you spell this?" One popular way in which teachers exploit this curiosity in spelling is to have children keep daily dictionaries—growing word chests—of the words they learn. Children can also learn early on that "editing"—review of their writing for spelling, punctuation, and word choice—will be a regular *final* phase of some of the projects they work on. Much student writing should remain unedited—journals, logs, notes, games, impromptu exercises, etc.—while other writings can be taken through one or more revisions following comments by the teacher or by other students on their ideas and facts. The teacher will want to ready still other writings for classroom publication or for "official" presentation to parents or for mailing to other readers; the class can edit these writings for correctness. In this way, students will assimilate the steps in the writing process (see, e.g., Suhor 1984), and the editing will not short-circuit the child's fluency or desire to revise. Moreover, the child will come to see that misspellings and other imperfections are a *necessary* part of learning to use new words and learning new ways to speak our ideas and feelings, rather than something to be ashamed of or penalized for. Like any other learning, whether across the curriculum or throughout life, language learning will succeed if we always keep alive our thirst for adventure into the unknown, and if we have the help of others—our teachers—who, regardless of the mistakes we will assuredly make, will always applaud our courage.

References

Allen, R. R., and Robert W. Kellner. "Integrating the Language Arts." In *Speaking and Writing, K-12: Classroom Strategies and the New Research,* edited by Christopher J. Thaiss and Charles Suhor, 208-27. Urbana, Ill.: National Council of Teachers of English, 1984.

Barnes, Douglas, James Britton, and Harold Rosen. *Language, the Learner, and the School.* Harmondsworth, England: Penguin Books, 1969. Available in the U.S. through Boynton/Cook.

Barr, Mary, Pat D'Arcy, and Mary K. Healy, eds. *What's Going On? Language/Learning Episodes in British and American Classrooms, Grades 4-13.* Montclair, N.J.: Boynton/Cook, 1982.

Beyer, Barry. "Using Writing to Learn History." *History Teacher* 13 (2): 167-78, February 1980. EJ 218 614.

Britton, James. *Language and Learning.* Harmondsworth, England: Penguin Books, 1970. Available in the U.S. through Boynton/Cook.

———, et al. *The Development of Writing Abilities (11-18).* London: Macmillan Education, 1975. Available in the U.S. through the National Council of Teachers of English.

Bruner, Jerome. *Toward a Theory of Instruction.* Cambridge, Mass.: Harvard University Press, 1966.

Calkins, Lucy McCormick. *Lessons from a Child: On the Teaching and Learning of Writing.* Exeter, N.H.: Heinemann Educational Books, 1983.

Emig, Janet. *The Composing Processes of Twelfth Graders.* Urbana, Ill.: National Council of Teachers of English, 1971.

———. "Writing as a Mode of Learning." *College Composition and Communication* 28 (2): 122-28, May 1977. EJ 162 045.

———. "Non-Magical Thinking: Presenting Writing Developmentally in School." In *The Web of Meaning: Essays on Writing, Teaching, Learning, and Thinking* by Janet Emig, edited by Dixie Goswami and Maureen Butler. Montclair, N.J.: Boynton/Cook, 1983.

Farr, Marcia. "Writing Growth in Young Children: What We Are Learning from Research." In *Speaking and Writing, K-12: Classroom Strategies and the New Research,* edited by Christopher J. Thaiss and Charles Suhor, 126-43. Urbana, Ill.: National Council of Teachers of English, 1984.

Flower, Linda. "Writer-Based Prose: A Cognitive Basis for Problems in Writing." *College English* 41 (1): 19-37, September 1979. EJ 209 266.

Graves, Donald. *Writing: Teachers and Children at Work.* Exeter, N.H.: Heinemann Educational Books, 1983.

Hawkins, Thom. *Group Inquiry Techniques for Teaching Writing.* Urbana, Ill.: ERIC Clearinghouse on Reading and Communication Skills and the National Council of Teachers of English, 1976. ED 128 813.

Holsinger, Donald. "Writing to Learn History." In *Writing to Learn: Essays and Reflections on Writing across the Curriculum,* edited by Christopher Thaiss, 49-55. Dubuque, Iowa: Kendall-Hunt, 1983.

Irmscher, William F. "Writing as a Way of Learning and Developing." *College Composition and Communication* 30 (3): 240-44, October 1979. EJ 212 104.

Isenberg, Joan P., and Evelyn Jacob. "Playful Literacy Activities and Learning: Preliminary Observations." In *When Children Play: Proceedings of International Conference on Play and Play Environments,* edited by Joe L. Frost and Sylvia Sunderlin. Wheaton, Md.: Association for Childhood Education International, 1985.

Jaynes, Julian. *The Origin of Consciousness in the Breakdown of the Bicameral Mind.* Boston: Houghton Mifflin, 1977.

Jeffries-Thaiss, Ann, and Christopher J. Thaiss. "Learning Better, Learning More: In the Home and across the Curriculum." In *Speaking and Writing, K-12: Classroom Strategies and the New Research,* edited by Christopher J. Thaiss and Charles Suhor, 1-28. Urbana, Ill.: National Council of Teachers of English, 1984.

King, Barbara. "Using Writing in the Mathematics Class." In *Teaching Writing in All Disciplines,* edited by C. W. Griffin, 39-44. San Francisco: Jossey-Bass, 1982.

Lees, Elaine O. "Evaluating Student Writing." *College Composition and Communication* 30 (4): 370–74, December 1979. EJ 214 082.

Macrorie, Ken. *Telling Writing*. 2d ed. Rochelle Park, N.J.: Hayden, 1977. 4th ed., Boynton/Cook, 1985.

Martin, Nancy, et al. *Writing and Learning across the Curriculum, 11–16*. London: Ward Lock Educational, 1976. Available in the U.S. through Boynton/Cook.

Murray, Donald. *Write to Learn*. New York: Holt, Rinehart and Winston, 1983.

———. *A Writer Teaches Writing*. 2d ed. Boston: Houghton Mifflin, 1985.

Nelson, Marie. "Teaching Writing to ESL Students—A Process-Based Approach." In *WATESOL Working Papers*, vol. 2, edited by C. Meloni and G. Spanos. Washington, D.C.: Center for Applied Linguistics, 1985.

Ornstein, Robert E. *The Psychology of Consciousness*. Harmondsworth, England: Penguin Books, 1975. 2d ed., Harcourt Brace Jovanovich, 1977.

Paik, Minja, and Eugene Norris. "Writing to Learn in Statistics, Mathematics, and Computer Science." In *Writing to Learn: Essays and Reflections on Writing across the Curriculum*, edited by Christopher Thaiss, 107–18. Dubuque, Iowa: Kendall-Hunt, 1983.

Polya, Gyorgy. *How to Solve It: A New Aspect of Mathematical Method*. 2d ed. Princeton, N.J.: Princeton University Press, 1971.

Reed, Linda. "Assessing Children's Speaking, Listening, and Writing Skills." In *Speaking and Writing, K–12: Classroom Strategies and the New Research*, edited by Christopher J. Thaiss and Charles Suhor, 228–60. Urbana, Ill.: National Council of Teachers of English, 1984.

Rubin, Donald L., and Kenneth J. Kantor. "Talking and Writing: Building Communication Competence." In *Speaking and Writing, K–12: Classroom Strategies and the New Research*, edited by Christopher J. Thaiss and Charles Suhor, 29–73. Urbana, Ill.: National Council of Teachers of English, 1984.

Shaughnessy, Mina P. *Errors and Expectations: A Guide for the Teacher of Basic Writing*. New York: Oxford University Press, 1977.

Sommers, Nancy. "Revision Strategies of Student Writers and Experienced Adult Writers." *College Composition and Communication* 31 (4): 378–88, December 1980. EJ 240 356.

Staton, Jana. "Thinking Together: Interaction in Children's Reasoning." In *Speaking and Writing, K–12: Classroom Strategies and the New Research*, edited by Christopher J. Thaiss and Charles Suhor, 144–87. Urbana, Ill.: National Council of Teachers of English, 1984.

Suhor, Charles. "Semiotics." ERIC/RCS Digest series. Urbana, Ill.: ERIC Clearinghouse on Reading and Communication Skills, 1982.

———. "Thinking Visually about Writing: Three Models for Teaching Composition, K–12." In *Speaking and Writing, K–12: Classroom Strategies and the New Research*, edited by Christopher J. Thaiss and Charles Suhor, 74–103. Urbana, Ill.: National Council of Teachers of English, 1984.

Tchudi, Stephen, and Susan Tchudi. *Teaching Writing in the Content Areas: Elementary School*. Washington, D.C.: National Education Association, 1983. ED 232 211.

Torbe, Mike, and Peter Medway. *The Climate for Learning*. London: Ward Lock Educational, 1981. Available in the U.S. from Boynton/Cook.

Vygotsky, Lev S. *Thought and Language,* edited by Gertrude Vakar, translated by Eugenia Hanfmann. Cambridge: Massachusetts Institute of Technology, 1962.

Wood, Barbara S. "Oral Communication in the Elementary Classroom." In *Speaking and Writing, K-12: Classroom Strategies and the New Research,* edited by Christopher J. Thaiss and Charles Suhor, 104–25. Urbana, Ill.: National Council of Teachers of English, 1984.

Wotring, Anne, and Robert Tierney. *Two Studies of Writing in High School Science.* Bay Area Writing Project Classroom Research Study No. 5. Berkeley: University of California, 1981. ED 238 725.

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