

Composing and Comprehending: Two Sides of the Same Basic Process

By James R. Squire

The National Assessment of Educational Progress reveals that eighty-five percent of all thirteen-year-olds can correctly complete a multiple choice check on comprehension, but only fifteen percent can write an acceptable sentence summarizing the paragraph read (NAEP 1981).

Today's teachers talk much about the importance of teaching reading comprehension and Durkin's work has revealed how little we actually teach children how to comprehend (1979, 1981). Yet even that instruction which occupies attention seems to focus on the word or word part (Mason and Osborn, 1982). Teaching children how to find meaning in a paragraph or a longer piece of discourse appears to be a sometime thing (Pearson and Johnson 1979).

Today's teachers talk much about the process of composing (Graves 1978). Yet only four percent of the social studies and science teachers in grades seven through twelve and not more than ten percent of the English teachers in these grades provide young people with opportunities to process ideas in their own language, i.e., to compose their own thoughts in writing (Applebee 1981). And not more than four to seven percent of all seventeen-year-olds, nearing the end of their schooling, can recall any teacher ever discussing the composing process with them, or for that matter, ever having had a personal conference about their compositions (NAEP 1981).

Such conditions, too frequent in most of today's schools, stem inevitably from a failure to recognize that composing and comprehending are process-oriented thinking skills which are basically interrelated. Our failure to teach composing and comprehending as process impedes our efforts not only to teach children to read and write, but our efforts to teach them how to think.

This can be demonstrated in at least six different ways.

1. Basic to all reading and writing is skill in processing language.

As children learn their language, they learn to think. Thinking and language may not be identical. Some thinking does occur through numbers, and some through visual symbols. But for most children language is the major vehicle through which thinking occurs (Britton 1970), and it is through language that children learn to label ideas, to classify, to relate the new to the known, to construct ideas or compose, to reconstruct or comprehend.

"It takes two to read a book," says Purves (1972), or to reflect on a film or to understand a message or to learn from life. An activity becomes experience only when one engages in thinking about it (Dewey 1963). And for children, particularly, thinking about any experience, real or vicarious, must involve language.

Composing is critical to thought processes because it is a process which actively engages the learner in constructing meaning, in developing ideas, in relating ideas, in expressing ideas. Comprehending is critical because it requires the learner to reconstruct

the structure and meaning of ideas expressed by another writer. To possess an idea that one is reading about requires competence in regenerating the idea, competence in learning how to write the ideas of another. Thus both comprehending and composing seem basic reflections of the same cognitive process. This is what the teaching of the higher thought processes is all about.

2. Classroom strategies for regenerating ideas are essential to teaching comprehending.

Summarizing, retelling, rephrasing, reprocessing, elaborating, acting out, translating from one medium of communication to another—these are vital approaches which require the reader to review, reprocess, and recreate the structure of prose. The books we remember, the experiences we best recall, are those we have talked or written about. Somehow in reprocessing ideas and events again and again, we add them to our short term and long term memories. Stotsky recently summarized some methods for using writing to reinforce reading (1982), but Wittrock and his colleagues have long explored the basic processes underlying such approaches under the rubric “generative reading comprehension” (1975).

This aspect of the relationship between comprehending and composing explains why Graves and Hansen report early success in their exploratory project encouraging first grade children to write about their reading (and to verbalize about the process) (1982). The relationship and the absence of adequate interaction about ideas also explains why preschool children learn little from the 5,000 or more hours they spend watching television (Schramm 1977). Activity without language does not become experience. The work of Ann Brown and others with their studies of metacognition (1977, 1978, 1982), Duffy and Roehler’s explorations in reading (1981), and Perry Lanier’s work in mathematics at the Institute for Research on Teaching, Michigan State University (1982), are demonstrating how thinking about the process of comprehending, that is, consciously considering the reconstructions that one composes, can enhance the basic process itself.

Instructional experience in analyzing composing and comprehending has long been treated as basic to successful reading and writing in the schools of England. From the beginning of most junior schools through the early forms of secondary (roughly the equivalent of American grades three to nine) British children study “Prose Paragraphs” one or two periods a week. Identified neither as reading nor writing, the instruction focuses on analyses in depth of selected prose paragraphs—the relationship between words, of word to sentence, of sentence to sentence, of part to whole, of basic rhetorical structure. Almost always the hour of instruction ends with writing a paraphrase. Both expository and imaginative prose forms are selected for analysis. And no matter how great creativity and freedom in writing and role playing elsewhere in the curriculum, disciplined and structured analyses of prose paragraphs is maintained in many schools (Squire and Applebee 1969). Two hours a week; seventy-two hours a year; five hundred and seventy-six hours of instructional experience in comprehending and composing over six years. What a marvelous basis for teaching children to write and to read.

The significance of experiences in processing ideas in language also explains why the interactive uses of computers, especially word processors, hold such promise for enhancing classroom instruction in reading and writing.

3. Because language learning and language processing involve cognitive processes basic to every discipline, application to the discipline is critical if children are to learn to think in the discipline.

The skills required to read science must be acquired through reading science. The skills required in writing science can be learned only by writing science. Basic reading and writing instruction can provide children with a rudimentary vocabulary and certain basic skills of literacy, but application to higher levels of processing requires specialized uses. We have long since learned that unless children are taught to apply basic comprehension skills to a

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variety of subject matters—and experience guided practice in applying the skills—they will not easily transfer their skills. Instances of inability, say, to apply academic reading skills to life situations have been widely reported. See, for example, the Adult Functional Literacy Project (Murphy 1973).

One reason, of course, is that the skills have unique and particular relevance to every discipline. Reading for sequence in a short story, for example, is very different from reading for historical sequence, or reading for sequence in a process article. Direct attention to skill applications in reading (and writing, too) appears to be mandatory and is one reason why content area selections must be introduced in basic reading programs. Restricted only to reading poems, plays, and stories, children can too easily find their competence restricted to literary activity as well.

Equally important is experience in writing in every content area. A child who writes science or social studies or industrial arts, acquires the basic vocabulary of the subject. That child learns to use the technical terms in context; learns how language is used in each discipline; in short, learns to think as a scientist or think as an historian. Over several years, practice in writing in subject areas will contribute strongly to the performance in reading and thinking in the discipline.

Until recently few schools reported much writing across the curriculum, although partisans have long stressed its value (Martin 1976).

Probably more writing occurs in science than in any other discipline. One unpublished study of schools in New England suggests that forty-five percent of all science classes from grade five on write, compared with twenty-one percent of social science classes and less than four percent of mathematics classes. Students write in science, apparently, because writing is one of the ways of science, not because teachers seek to teach writing. A daily log in a fifth grade records observations as a child watches a polywog growing to a frog. Such activities are almost routine science. So is writing up a science experiment—a laboratory report—in eighth grade physical science. But as the children write

science, they process the ideas of science. They use the language of science. They learn to think in science. They prepare themselves to understand their reading of science. By the time they are enrolled in tenth grade biology they are ready to comprehend with reasonable understanding textbooks far more difficult in science than in any other subject field. Indeed the most widely used biology textbook in this country has a tested readability level of several years above grade level, yet few teachers report basic problems in using the textbook with young people.

Contrast this condition with what presently obtains in social studies. The same student who can respond to a biology test written three years above grade level may a year later require an American history textbook written well below. As Applebee has shown, much of the writing in social studies is note taking—a not unimportant but severely limited kind of processing (1981). With insufficient experience in composing social studies, children do not learn the technical vocabulary of social studies, do not learn how language is used in the discipline, do not learn how to construct and compose and to reconstruct or comprehend.

Even more critical is the situation in mathematics where teachers regularly report their major concern is not computation but problem solving. And to most teachers, solving problems means reading and understanding the word problems. Why can't students read the word problems? Because they have never written any. They have not had the opportunity to learn how language is used in mathematics.

4. Children and young people require instructional experience in all important modes of rhetoric if they are to comprehend and compose using these varied forms and functions.

We have long learned from Durkin's work that children who know how to read before they enter schools have had extensive experiences in listening to oral reading (1966). Stein's recent work with story

grammars suggests that such children have internalized the basic story structure and have prepared themselves to understand the basic patterns (1981, 1982). Work with story grammars and story plans has been reported as an aid to teaching comprehension (Beck 1979, 1982; Pearson 1980) and clearly sensitivity to such structures helps in understanding basic narratives.

But recently Calfee (1983), Meyer (1975), and others suggest that grammars of exposition exist and that young people need to internalize these basic patterns as a way of preparing to comprehend prose written in each discipline in much the same way that Stein finds story patterns to be helpful.

Writing, like reading, requires attention to the various modes and functions of language. One exploratory project in England attempted to define the varieties of linguistic experience into 110 different kinds of experiences and to provide reading and writing experience in each area (see Doughty et al. 1971).

Certainly writing samples collected during two recent statewide assessments of composition indicate our requirement to provide instruction and practice with any form of reading and writing which children are to master. In 1978 both New York and Texas tested the proficiency of thirteen-year-olds and seventeen-year-olds in writing business letters, reports, and persuasive pieces of prose. Results were uniform throughout both states. Most young people could write acceptable business letters because they had had instruction and directed practice in writing business letters. Some young people wrote acceptable reports; some did not. The results approached a normal distribution as, subsequent to the assessment, educational leaders found past instructional experience varied from school to school. But in the third area assessed, persuasive writing, many of the most talented students failed—including those whose scores on the standardized reading tests greatly exceeded grade level norms. Neither these students nor their less able colleagues could write persuasively because they had had next to no instruction or instructional practice in writing or in reading persuasive writing.

Texas and New York teachers have long since remedied this deficiency in their curriculum in reading and writing, but one cannot help wondering whether other important modes of language are also being overlooked. Agreement on the functions and modes of language which require attention in teaching reading and writing is long overdue.

5. Instruction in comprehending and composing must concentrate on coping with the total process of constructing and reconstructing ideas.

One does not learn to read only by completing an endless series of discrete practices on isolated reading skills. Or learn to write by facing only endless sequences of “itty, bitty” sentences and paragraphs.

Nor does one learn to write by mastering only isolated principles of English grammar or separate elements of English. Or learn to read only by mastering isolated sounds and letters.

Important as these subskills may be, they at best support the total task of comprehending a longer selection or communicating a fully developed idea. Our task is to teach students how to relate the various subskills in achieving a totality of meaning and to interrelate the variety of skills required to comprehend, so as to see the relationship of part to whole and of part to part.

To understand a complete short story, after all, or a chapter in a geography book, the reader must not only demonstrate mastery of separate skills—main idea, detail, sequence, the like—but more importantly learn how to relate the skills in achieving an all embracing meaning. This is why story maps have proven so useful in teaching reading comprehension (see Pearson 1980 and Beck 1979). This is why young readers are best encouraged to read a complete selection for total effect before initiating the study of parts in relation to the whole.

Similarly in learning to write, young people must

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understand the whole in order to cope with the parts. Focusing instruction separately on the word, the sentence, the paragraph, and then the longer piece of discourse may seem logically right, but it is psychologically wrong. From the very beginning children seek to communicate within a total context.

Directing attention to specific skills is important since we know those skills that are not taught are not acquired. But teaching the specific skills in a holistic context is critical. This is why the total processes of reading and writing are so important and why the processes are so similar.

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| Before Writing: | <ul style="list-style-type: none"> • Securing ideas • Organizing ideas • Determining point of view • Considering audience |
| Before Reading: | <ul style="list-style-type: none"> • Preparing to comprehend • Relating to prior experience • Establishing purpose • Looking for the author's stance |
| During Reading or Writing: | <ul style="list-style-type: none"> • Composing or comprehending • Actively engaged emotionally and intellectually |
| After Writing: | <ul style="list-style-type: none"> • Evaluating • Editing and revising • Applying outside standards of correctness |
| After Reading: | <ul style="list-style-type: none"> • Evaluating • Studying parts in relation to whole • Analyzing how effects are achieved • Applying independent judgments (preferences, ethics, aesthetics) |

As Squire demonstrated in his study of the responses of adolescents to short stories (1964), the complete process of comprehending, like the complete process of composing, proceeds through predictable stages.

Recent reviews of the comprehension process tend to corroborate this view (Crafton 1982; Langer 1982).

6. A critical factor in shaping the quality of both composing and comprehending is the prior knowledge the pupil brings to reading and writing.

Students of response to literature have long recognized that the knowledge and attitudes that readers bring to a text help to determine the meaning that each derives from the text (Richards 1929; Rosenblatt 1976). More recently cognitive psychologists have demonstrated that, when linguistic aptitude is held constant, the reader's schemata—the sum total of his or her world knowledge and skill in retrieving these attitudes and ideas—may be the most important variable in determining the quality of comprehension (Anderson 1977; Pearson 1978; Langer 1982). As studies of the influence of a reader's prior knowledge or comprehension continue, findings are also accumulating which suggest the significance of prior knowledge (real or vicarious) on subject matter learning (see, for example, the work of C. Anderson (1982) on science misconceptions).

Less widely recognized, however, is the way in which prior knowledge affects the quality of composing. Yet clearly pupils write best about subjects on which they are well informed. Indeed a major division of classical rhetoric has always been invention, the study of sources of ideas and the ways of retrieving ideas.

Three aspects of prior knowledge seem important in planning curriculum in composition and comprehension: a) knowledge about rhetorical structures—the story grammars or patterns of expository prose discussed earlier in this paper; b) the accumulation of knowledge and experience prerequisite to understanding or writing about an important concept or idea; c) the strategies children must acquire to unlock the world knowledge that they have accumulated—to learn how to ask themselves

Professional Article ■ *Two Sides of the Same Basic Process*

those questions before writing or before reading that seem most likely to enhance composing and comprehending.

Recognition of the importance of applying individual knowledge to one's reading and writing inevitably requires curriculum planning that addresses the requisite buildup in ideas. What prior knowledge is required, say, to understand the "Gettysburg Address?" About Lincoln and the War Between the States? About the rhetorical structures involved? About the racial and economic conflicts? And where and how are schools building the needed concepts? Not surely in the four-minute writing and reading assignments found typically in the average secondary school classroom (Applebee 1981).

Recognizing the significance of prior knowledge to the processing of ideas through language seems to require teachers to direct far more careful attention to pre-reading and pre-writing experiences in reading and writing (Graves 1982).

Current research in composing and comprehending is increasingly clarifying the interaction between these two dimensions of the thinking process. In both areas we are moving from

an overt concern with discrete and often isolated subskills to a recognition of the importance of the interrelationship of skills within the total process. In a very real sense this shift in professional thinking reflects a movement from concern with a psychology of learning based largely on principles of behavioral psychology to learning principles emanating more from cognitive psychology. However our concentration on specific skills and observable behaviors has helped us to strengthen the teaching of beginning reading and to establish a minimum literacy level for many of our students. Our new insights indicate that progress in strengthening all higher thought processes will depend on devoting more direct attention to improving the underlying processes. And in focusing on these processes, particularly the processes of composing and comprehending, those who have long sought sensible ways of integrating the teaching of the language arts may find the long sought answers to the questions that they have been seeking.



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Professional Article ■ *Two Sides of the Same Basic Process*

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