related not only to success, but in some less well defined way to "creativity" itself.

Other studies in the psychology of creativity make this link between creative thinking and problem-solving processes more explicit.[11] Many "creative" breakthroughs in science and the arts are not the result of finding a better technical solution to an old problem (e.g., the disease-producing influence of evil spirits), but of seeing a new problem (e.g., the existence of germs). In many cases, the solution procedure is relatively straightforward once one has defined the problem. For example, Virginia Woolf's *The Waves* or Van Gogh's impressionistic landscapes are less a technical feat than an act of imagining a new problem or set of goals for the artist.

We feel there are implications for exciting research in this area. This study has attempted to develop a model of the rhetorical problem as a guide to further research, and to describe three major differences between good and poor writers. But there is much we could learn about how people define their rhetorical problems as they write and why they make some of the choices they do.

The second implication we see in our own study is that the ability to explore a rhetorical problem is eminently teachable. Unlike a metaphoric "discovery," problem-finding is not a totally mysterious or magical act. Writers discover what they want to do by insistently, energetically exploring the entire problem before them and building for themselves a unique image of the problem they want to solve. A part of creative thinking is just plain thinking.

Exploring a topic alone isn't enough. As Donald Murray put it, "writers wait for signals" which tell them it is time to write, which "give a sense of closure, a way of handling a diffuse and overwhelming subject."[12] Many of the "signals" Murray described, such as having found a point of view, a voice, or a genre, parallel our description of the goals and plans we saw good writers making. If we can teach students to explore and define their own problems, even within the constraints of an assignment, we can help them to create inspiration instead of wait for it.

[11] John R. Hayes, *Cognitive Psychology: Thinking and Creating* (Homewood, IL: Dorsey Press, 1978); M. Wertheimer, *Productive Thinking* (New York: Harper and Row, 1945).

[12] Donald M. Murray, "Write Before Writing," *College Composition and Communication*, 29 (Dec. 1978), 375-381.

Revision Strategies of Student Writers and Experienced Adult Writers

by Nancy Sommers

Although various aspects of the writing process have been studied extensively of late, research on revision has been notably absent. The reason for this, I suspect, is that current models of the writing process have directed attention away from revision. With few exceptions, these models are linear; they separate the writing process into discrete stages. Two representative models are Gordon Rohman's suggestion that the composing process moves from prewriting to writing to rewriting and James Britton's model of the writing process as a series of stages described in metaphors of linear growth, conception—incubation—production.[1] What is striking about these theories of writing is that they model themselves on speech: Rohman defines the writer in a way that cannot distinguish him from a speaker ("A writer is a man who . . . puts [his] experience into words in his own mind"—p. 15); and Britton bases his theory of writing on what he calls (following Jakobson) the "expressiveness" of speech.[2] Moreover, Britton's study itself follows the "linear model" of the relation of thought and language in speech proposed by Vygotsky, a relationship embodied in the linear movement "from the motive which engenders a thought to the shaping of the thought, *first* in inner speech, *then* in meanings of words, *and finally* in words" (quoted in Britton, p. 40). What this movement fails to take into account in its linear structure—"first . . . then . . . finally"—is the recursive shaping of thought by language; what it fails to take into account is *revision.* In these linear conceptions of the writing process revision is understood as a separate stage at the end of the process—a stage that comes after the completion of a first or second draft and one that is temporally distinct from the prewriting and writing stages of the process.[3]

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[1] D. Gordon Rohman and Albert O. Wlecke, "Pre-writing: The Construction and Application of Models for Concept Formation in Writing," Cooperative Research Project No. 2174, U.S. Office of Education, Department of Health, Education, and Welfare; James Britton, Anthony Burgess, Nancy Martin, Alex McLeod, Harold Rosen, *The Development of Writing Abilities (11-18)* (London: Macmillan Education, 1975).

[2] Britton is following Roman Jakobson, "Linguistics and Poetics," in T. A. Sebeok, *Style in Language* (Cambridge, Mass: MIT Press, 1960).

[3] For an extended discussion of this issue see Nancy Sommers, "The Need for Theory in Composition Research," *College Composition and Communication*, 30 (February, 1979), 46-49.