

# SPEAKING OUT

## Are Teachers Ready to Teach Pupils to Think?

BY RANDY SCHENKAT  
AND KATHIE TYSER

**T**he need to develop higher-order thinking skills in K-12 students has attracted growing attention. But the current efforts to encourage such thinking will fail unless teachers themselves are conscious of such skills and know how to use them in the classroom.

Unfortunately, our colleges are graduating an alarming number of students—in education and other disciplines—who fail to demonstrate the “operative” knowledge needed in higher-order thinking. Operative knowledge is more than just knowing facts; it is understanding the sources of facts and having the capacity to use, apply, transform, or recognize the relevance of factual knowledge in novel situations.

A growing body of research (more than 300 literature citations) on college students’ cognitive development—based on the work of William Perry Jr.—supports the assertion that higher forms of intellectual development are not as common in undergraduates, even college seniors, as most people would suppose. Among the findings:

- Reporting on research at the University of Minnesota, Elizabeth Welfel described graduating college seniors as showing little evo-

*Randy Schenkata is director of SITE Inc., a nonprofit educational-consulting firm in LaCrosse, Wisconsin, and a special-needs consultant-writer for District 861, Winona, Minnesota. Kathie Tyser is an elementary-school learning-disabilities teacher for the LaCrosse Public Schools and a trainer and consultant on school-improvement projects.*



lution of alternative views on any issue, tending to treat all opinions as equally good, tending to hold opinions based largely on whims or unsubstantiated beliefs and hesitating to take stands based on evidence and reason.

- O. J. Harvey, summing up nearly a decade of research on the 1960's, reported that only 7 percent of liberal arts majors, 5 percent of preservice teachers, and 4 percent of inservice teachers operated in a cognitive style that revealed abstract conceptual structures, information integration and interdependence, and a tentative rather than absolute view of knowledge. He also found 35 percent of liberal-arts majors, 45 percent of preservice teachers, 55 percent of inservice teachers,

75 percent of principals, and 90 percent of superintendents operated in cognitive styles grounded in absolute assumptions—viewing reality in terms of good/bad, right/wrong, and either/or, while attributing goodness and truth to wise and all-knowing authorities.

- Carl Glickman, one of the few theorists in supervision who have continued the use of cognitive-developmental models, has noted a reduction over the past decade in the percentages of teachers whose thinking is based on absolutes. However, the percentages have stayed too high, given the expectations now being placed on schools to develop higher-order thinking.

Experience and common  
*Continued on page 32*

writers become more aware of the sub-processes used by sophisticated writers and more adept in using them is to help students visualize such processes. Planning comprises 65 to 85 percent of the composing time of good writers and relies heavily on right-brain input.

### Clustering and Mapping

Planning, moreover, can be partially visualized by using strategies such as clustering or mapping. These techniques graphically portray planning elements: generating and organizing content, and setting content and process goals. (See page 31.) Clustering, a concept designed and formulated by Gabrielle Rico, is based on the idea that "thoughts and images, when given free rein, seem to come in clusters of associations."<sup>18</sup> In clustering, a word or phrase becomes the nucleus of a graphic design consisting of lines radiating from the circled nucleus to other circled words or phrases that have been conceived by free association with the nucleus. This exercise is non-linear.

Mapping also is a graphic presentation of thought; in contrast with clustering, it can be nonlinear or linear. When mapping, a writer begins "with a geometrical shape—circle, square, and so forth—in a central position for the thesis. Extending from the center are as many lines as there are categories. Branching from the categories are several levels of smaller lines that represent the supporting details."<sup>19</sup>

Both clustering and mapping force the writer to focus on meaning, purpose, and audience, depending on which word or concept is central to the clustering or mapping. Both enable the writer to envision the relationships between ideas and concepts, to grasp the whole, detect patterns, and formulate ideas.

Any account of the writing process that considers the subprocesses (planning, translating, reviewing, revising) and includes strategies such as clustering or nonlinear mapping comes as close as possible to describing what we currently know about composing and the aspects of it that can be taught. However, no diagram can accurately present the way the brain hemispheres work together during the composing process. Research indicates that domination of one particular hemisphere over the other during the composing process changes with experience.

In teaching writing, teachers obvi-

ously need to give attention to form and style and spelling. However, they should make students aware that creativity—the ability to perceive relationships and patterns, to imagine—is a natural function of the human brain that should be nurtured throughout a person's entire lifetime. By becoming skillful writers, students can develop their creativity and thereby become more effective thinkers and learners. □

### FOOTNOTES

<sup>1</sup> Ann Humes, "Research on the Composing Process," *Review of Educational Research*, 53:2 (1983), pp. 201-216.

<sup>2</sup> *Ibid.*

<sup>3</sup> W. D. TenHouten, K. D. Hoppe, J. E. Bogen, and D. O. Walter, "Alexithymia: An Experimental Study of Cerebral Commissurotomy Patients and Normal Control Subjects," *American Journal of Psychiatry*, 143:3 (1986), pp. 312-316; K. D. Hoppe, "Mind and Spirituality: Symbollexia, Empathy, and God Representation," Paper presented at the meeting of The National Guild of Catholic Psychiatrists, 1985; R. Restak, *The Brain* (New York: Bantam Books, 1984); Linda Verlee Williams, *Teaching for the Two-Sided Mind: A Guide to Right Brain/Left Brain Education*, Touchstone ed. (New York: Simon & Schuster, 1983).

<sup>4</sup> TenHouten, et al., p. 312.

<sup>5</sup> K. D. Hoppe, personal communication, October 12, 1986.

<sup>6</sup> ———, "Mind and Spirituality: Symbollexia, Empathy, and God Representation."

<sup>7</sup> G. L. Rica and M. F. Claggett, *Balancing the Hemispheres: Brain Research and the Teaching of Writing* (Berkeley, Calif.: Bay Area Writing Project, University of California, 1980), p. 2.

<sup>8</sup> G. P. Rico, *Writing the Natural Way: Using Right-Brain Techniques to Release Your Expressive Powers* (Los Angeles: J. P. Tarcher, Inc., 1983), p. 18. Book distributed by St. Martin's Press, New York.

<sup>9</sup> Cited in *Ibid.*, p. 17.

<sup>10</sup> A. E. Berthoff, *The Making of Meaning: Metaphors, Models, and Maxims for Writing Teachers* (Montclair, N.J.: Boynton/Cook Publishers, Inc., 1981).

<sup>11</sup> M. Ponsot and R. Dean, *Beat Not the Poor Desk: Writing: What to Teach, How to Teach It, and Why* (Montclair, N.J.: Boynton/Cook Publishers, 1982).

<sup>12</sup> E. R. Hammond, *Teaching Writing* (New York: McGraw-Hill Book Company, 1983), p. iii.

<sup>13</sup> J. Emig, "Writing as a Mode of Learning," *College Composition and Communication*, 28 (1977), pp. 122-128.

<sup>14</sup> Rico and Claggett.

<sup>15</sup> J. A. Reither, "Writing and Knowing: Toward Redefining the Writing Process," *College English*, 47:6 (1985), pp. 620-628.

<sup>16</sup> C. H. Knoblauch and L. Brannon, "Writing as Learning Through the Curriculum," *College English*, 45:5 (1983), pp. 465-474.

<sup>17</sup> R. Restak, "The Brain: The Endless Levels of the Mind," *The Washington Post* (November 2, 1986), p. C3.

<sup>18</sup> Rico and Claggett, p. 29.

<sup>19</sup> Marilyn Hanf Buckley and Owen Boyle, *Mapping the Writing Journey* (Berkeley, Calif.: Bay Area Writing Project, 1981), pp. 3, 4.

# ARE TEACHERS READY TO TEACH PUPILS TO THINK?

*Continued from page 13*

sense suggest that if teachers enter classrooms failing to use operative knowledge themselves, they cannot serve as models of higher-order thinking and decisionmaking for their students—either through the instructional dialogue they engage in or through the ways they choose to use materials and methods and evaluate learning. Teachers who see their job as merely dispensing information fail to see more complex ways of viewing subjects. For example, they fail to ask: How was that information derived? How is it changing and evolving? How might it be related to other curriculum areas? How might it best be used to foster operative knowledge, rather than mere recall of "right" or "wrong" factual information?

Hundreds of classroom decisions involving such questions can be made by teachers daily. Those decisions reflect the individual teacher's own level of personal and cognitive development—and dramatically affect what and how students learn.

As Mary Budd Rowe, one of the continuing leaders in science-process methods, has charged, too many K-12 teachers operate implicitly according to a model of learning that views students as "uncritical, essentially bottomless receptacles for information. . . [T]his tends to limit the teacher's function to one of conveying information and correcting student recitations."

In this model, she notes: "Knowledge is seen as a fixed commodity to be stored up for future use. (Learn it now. You will need it next year.) What students do learn is that someplace there are people who produce the 'right' answers. There is always an official response to be recited whether

or not one understands it or believes it."

The late Hilda Taba, an early researcher in social-studies thinking skills, sagaciously pointed out almost 20 years ago the links between adult development, teacher practice, and children's learning, noting that when teachers themselves operate at lower conceptual levels, children tend to adopt irrational, unproductive, and arbitrary models of thinking that depend on memory and authority rather than judgment and inference.

Given this evidence, we suggest that education reformers must give careful attention to teachers' own cognitive development as plans are made for teachers to develop more sophisticated thinking skills in their students.

There is a critical link between improving teachers' ability to instill such skills in others and teachers' own roles within the schools. Perhaps Albert Shanker had a good sense of teachers' developmental levels when he predicted that they will only eventually become supportive of professionalism, because for too long they have existed in a world of rules and regulations where someone else makes the decisions. Enhancing teachers' effectiveness in encouraging critical thinking and intelligent decisionmaking must be part of the effort to make teaching a more responsible and less passive occupation.

Teachers must be encouraged to engage in a new level of self-management and decisionmaking in their schools and classrooms. Schools must become places where creative and flexible thinking is encouraged, where teachers use processes that allow for group planning, problemsolving, and cooperative learning, and where personal growth is encouraged in a variety of ways. The principles of school-based management offer a sound model for such efforts.

Teachers must also be involved in curriculum development. Too often teachers have only been dispensers of commercial materials with hundreds of objectives to be covered. This has done much

to foster the trivialization of knowledge. Teachers need instead to see the relatedness of the different elements of the curriculum and help students link learning across subjects. Before teachers can be expected to develop new interrelated curricula, however, they may need a deeper level of knowledge in and across content areas to make up for a fragmentary college education.

Moreover, if students are to cooperate in teams, learn how to learn, and learn how to think flexibly, teachers must use materials that reflect multiple viewpoints. Again, teachers who may have been schooled in only one way to view things may need to learn to appreciate varying viewpoints and become comfortable in dealing with and presenting them to students.

Much work at many levels is needed to bring about a *vision of teachers as thinkers and informed decisionmakers*. But until a school building radiates this conception of teaching, it is unlikely that trying to teach children higher-order thinking will succeed. Just as we commonly accept that parents transmit subtle and often unconscious attitudes, world views, and problem-solving approaches to their children, so teachers must become aware of the impact that their own ways of thinking have on students. This requires that teachers be willing to examine their own assumptions to clarify how they think and make decisions.

Our comments are not meant to disparage teachers. Again, the evidence shows deficiencies among college graduates in many disciplines, and there is much work to be done to modify practices in higher education. Our concern here is to point out the adult-development needs of teachers who may have been ill-served in their initial preparation. To have the teaching force make the significant mindshifts needed to support the emphasis on higher order thinking is an incredibly challenging task. Without attending to the challenge, however, there seems little long-range hope that this empha-

sis can succeed. □

Reprinted with permission from *Education Week*, Volume V, Number 29, April 9, 1986, and the authors.

## SUICIDE PREVENTION PROGRAM FOR ADVENTIST SCHOOLS

*Continued from page 27*

nature of the crisis.

Suicidal people may also use circular logic: "I'm going to kill myself."

"Why is that?"

"Because my problems can't be solved."

"How do you know they can't be solved?"

"Are you kidding? If my problems could be solved, do you think I'd be talking about killing myself?"

Some motivations for committing suicide are wanting to escape an intolerable situation, seeking to gain attention, manipulate others, avoid punishment for a crime, punish the "significant other," or obtain revenge.

### Do's and Don't's for Helping a Troubled Teen

DO trust your instincts if you suspect a teenager is suicidal.

DO communicate your concern. Listen to the young person's problems and offer support.

DO talk openly. Ask direct questions about the teenager's intention. Try to determine if he or she has a suicide plan (how, when, where). The more detailed the plan, the more serious the threat.

DO recognize your limitations. Obtain professional help from a psychologist, mental health counselor, minister, psychiatrist, or school nurse.

DO remind the young person of his or her importance in God's eyes. Speak of God's love for us regardless of the situation. The parable of the prodigal son best illustrates that love: the father didn't wait to hear apologies or rea-