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# Book Review

**Arthur L. Costa and Lawrence E. Lowery, TECHNIQUES FOR TEACHING THINKING**

Pacific Grove, CA: Midwest Publications, 1989.
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*Review by CONNIE MISSIMER*

This book is the second in *The Practioners' Guide to Teaching Thinking Series,* edited by Robert J. Swartz and D.N. Perkins. The authors state that the purpose of their book is to provide teachers and administrators with ideas about teaching thinking skills. They are most successful in this task in the fourth and sixth chapters, respectively titled "Using Thought-full Language in the Classroom," and "Teaching a Thinking Skill or Strategy Directly." What makes these chapters so good is that they deal in nuts and bolts, showing a teacher what she can walk into the classroom and do to impart an important thinking skill. For example, in a section titled "Thinking Words" on page 55, the authors recommend speaking "with thought-full language—using specific thinking-skill labels and instructing students in ways to perform those skills [so that]... students, too, might be more inclined to use them." The authors recommend language such as "What *conclusions* can you draw about this story?" instead of "What did you think of this story?" Or "What *hypotheses* do you have that might explain...?" "What *evidence* do you have to support...?" instead of "How do you know that's true?" Chapter 6 begins with a delightful example for immediate export to any grade school classroom:

> Mrs. Englander, the kindergarten teacher, stood erect before the children. Her arms were folded tightly across her chest; her lips were tightened and curled down at the ends. Below a wrinkled forehead and depressed eyebrows, two squinting dark eyes stared piercingly at the children.
>
> "What's wrong?" one child inquired.
>
> "Are you mad at us?"
>
> "Don't you feel well?"
>
> "Is there something wrong?"
>
> "Are you angry?"
>
> "Did you get up on the wrong side of the bed?" they asked.
>
> "Today we're going to learn what an *inference* is," began Mrs. Englander.

Given excellent ideas such as these, it is well worth taking time for a browse through *Techniques for Teaching Thinking.*

The busy teacher might also wish for a simple, central notion of the thinking that the authors have in mind to teach, with that central notion offered early on and distinguished from other types of thought. Chapter 2 features a diagram, called Model of Thinking, which involves input (intake of data), process (making sense out of the data), retrieval of items from memory to aid in making sense of the data, then output, the application of ideas to other circumstances. Two difficulties with this model are that it is bulky and may capture more in its net than the authors intend. For instance, memorization of the names of the children in a story can involve input (reading the story), processing (wondering if an eleven-year-old counts as a child), retrieving (thinking about events in the story to cull up names) and output (trying to remember as many child characters in as many stories as one can). Judging from the example which opens chapter 2, however, the authors appear to believe that a teacher's request of students to name the children in a story is not sufficient to produce the higher-order thinking that they have in mind.

The authors do their best to explain what

they mean by input, processing, and output by offering examples and verbs meant to elicit these aspects of the thinking process. Perhaps because the model they use is problematical, there is some confusing overlap. Naming and listing go under the rubric of retrieving. Classifying, grouping, and categorizing are thought to be types of processing. The request to name the states which bound California is offered as an example of eliciting the mental task of naming. Isn't that task also one of listing, classifying, grouping, and categorizing? Is there a difference among these five terms and if so, does that difference matter? Oddly, despite the seeming redundancy of classificatory terms, there is no mention of distinction, a very important mental process.

Along with questions of overlap, there are quite a few terms in each category to keep straight; for processing, 16, for output, 15. Output encompasses applying a principle, evaluating, extrapolating, inferring, generalizing, imagining. The mind yearns for some simple, unifying principle. The authors offer one in passing during their discussion of output on page 28: "Application invites the student to think... hypothetically..." The "output" behaviors of speculating, generalizing, evaluating, judging, and inferring are all species of hypothesizing or theorizing. As the authors rightly imply, discrete facts, classifications, and contrasts are the components of hypothesis, not vice versa. "Hypothesis" has a gratifying, old-fashioned ring that connects it to the history of thought, and to many sensibilities the term would be less off-putting than input and output. The concept of hypothesis invites consideration of the structure of thought rather than the relatively inconsequential temporal sequence in which thought has evolved, which the input-output model stresses. And the concept of hypothesis is clearly distinguishable from mental processes such as trying to think of all the fictive children one can. Finally, the authors' thought-full language of Chapter 4 is the language of hypothesis.

An interesting feature of *Techniques for Teaching Thinking* is that it is really two books woven into one: *Techniques for Teaching* (thinking); and *Techniques for* (teaching) *Thinking*. More emphasis is given to the first, pedagogical "book," than to the second. From the outset, the authors make their position clear that pedagogical techniques such as group discussion enhance thinking skills, while other techniques such as recitation are harmful, and they cite research which supports their theories. In cordial prefaces the series editors and the authors invite the reader to question these theories. The series editors stress that the classroom teachers are truly "the experts... aware of what specific techniques will work in their classrooms with the students they teach... Teaching for thinking will only succeed if it reflects wise choices based on a commitment to well-understood goals freely chosen..." But in this book the goals, the techniques for thinking, are not specified at the outset because pedagogical arguments, the techniques for teaching, take pride of place. The latter occupy the whole of the introduction and the first chapter. The reader has no chance until the second chapter to get an idea of what the thinking is, exactly, that these pedagogical techniques are meant to enhance, and as indicated, the input-output model of chapter 2 is somewhat unwieldy. The authors modestly insist in their preface that "the effectiveness of the ideas presented here should not... be accepted because of someone else's theories and research." If only they had added "in fact, the thinking we hope to enhance is precisely the ability to theorize and to critique theories, including our own," the reader would have had the benefit of a goal (and a thinking technique) by which to judge the authors' pedagogical claims.

Once it is clear what the educational task is—for the sake of hypothesis, say that the authors would agree that it is enabling students to recognize and generate hypotheses—one can begin to ask what pedagogical forms might be best for instilling this task.

The authors cite recent research holding that thinking is best enhanced by teacher-

initiated questions which request reasons and invite alternatives (hypotheses), as well as by class discussions. In a section of the Introduction titled "Discussion, not Recitation," they characterize recitation as "recurring sequences of teacher questions intended to cause student to 'recite' what they already know or are coming to know through the teacher's input." Recitation is criticized as "teacher centered," because the teacher controls the interaction by asking the questions and reinforcing the student's responses. On the other hand, discussion "allows group interaction in which students discuss what they don't know and put forth and consider more than one point of view on a subject. The teacher, serving as discussion leader, facilitates by creating an atmosphere of freedom, clarity, trust, and equality." Like recitation, the lecture method is dismissed in a short paragraph, which begins "The lecture method has long been found wanting in terms of student learning."

The more one thinks about it, the odder this bifurcation into "good" and "bad" teaching techniques seems. If the goal is the teaching of hypothesizing, what is wrong with an occasional recitation on thought-full language? And, given that throughout the book the authors counsel teachers to model the behavior that they wish students to adopt, why not a carefully crafted lecture to model the process of hypothesizing? The lecturer can even pause along the way for metacognitive advertisements: "Did you notice that I made the assumption that..." or "Now, given this new evidence, Lavoisier had to amend his hypothesis..." A good lecture is full of the very thought-full language which the authors advocate. A great lecture can transport listeners into intellectual rapture, much as a great symphony does. After a great lecture it feels so good to be alive, turning over those amazing new ideas again and again! The sustained hypothesizing necessary to give and fully receive such a lecture (book, article) would seem the ultimate goal of a thinking curriculum. It is sad that many students graduate or drop out without ever having become excited by a piece of sustained thinking, and that graduates from schools of education often come trained only to offer the students' own pop tunes back to them in group discussion, never struggling to produce symphonies of their own to inspire the students' song.

Lectures can be awful, too, offering no better guarantee of learning than any other technique. Furthermore, there can be vast differences in the amounts individuals learn from a lecture, according to a study which the authors cite. The richer the lecture, the truer this could be. But is a group discussion at which the participants learn only two things inherently preferable because it will not produce vast differences in learning, rather, impoverishing everyone equally?

Worries about egalitarianism seem to underlie much current sentiment favoring individual or group work, which is not "teacher-centered". The assumption seems to be that unless students are doing the speaking or writing, they are involved in "passive learning," a concept confused to the point of oxymoron, since learning anything requires the activity of attention. Nonetheless, passive learning is perceived as somehow oppressive to higher-order thought. If teachers lecture they will domineer; the whole process smacks of the unegalitarian. Group discussions are egalitarian and "active" and therefore generate a questioning attitude.

This way of looking at pedagogical techniques seems off the mark. The relevant question should be "What activity will get the students in this class to be *hypothesis*-centered?" From this point of view, any pedagogical technique could be an arrow in the quiver. A teacher might switch from lecture to discussion to drill to individual work, or use just one of these, the criterion being what best helps those students to think hypothetically.

The view that any pedgagocial technique has promise to teach thinking, if used properly, may be of some importance. The authors cite John Goodlad's study of over one thousand classrooms in 1983, which found that four to eight percent of time was spent in

discussion, and that less than one percent of teacher talk invited a student response. Furthermore, this reviewer learned from curriculum specialists for the State of California for levels kindergarten through twelfth grade, that about 95% of class time is spent looking at the textbook. While *Techniques for Teaching Thinking* is an asset in its encouragement to try group discussion and Socratic questioning, the editors of this series might consider a book in the same light, clear style, devoted to showing teachers how to prepare lectures and to use their textbooks in ways that generate hypotheses.

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