

# Better Student Thinking Through Changing Teacher Behaviors

Teachers in Irvine, California, are using questioning and responding strategies with students in classrooms and with each other in peer coaching.

When we asked teachers in the Irvine (California) Thinking Project to describe the single greatest change in their students, they reported:

- more flexibility in thinking and higher quality of products;
- increased independent application of higher-level thinking in classrooms, on the playground, and in social situations;
- higher levels of thought in oral and written communications, reflecting improved processing of information and understanding of relationships.

These results have been achieved by a project that places primary emphasis on a specific set of teacher verbal behaviors rather than on direct instruction in thinking skills.

In 1983 administrators and teachers in our K-12 district formed a task force to determine a common direction for the teaching of thinking. After we explored the issues, we decided that our approach to teaching thinking should be locally developed and should infuse thinking in all grade levels and all content areas.

When our District Curriculum Council (which sets priorities in curriculum and instruction) selected thinking as an instructional target, the task force decided against teaching thinking as a separate subject, and chose instead to concentrate on teaching behaviors and strategies identified by research as effective in promoting critical and creative thinking.

In 1984 three mentor teachers organized an inservice program in questioning and responding strategies (Costa 1984), subsequently offered as after-school and full-day workshops

for interested teachers. Teachers learned to match questions to three sequential levels of thinking: input (building or recalling a data base), processing (using and internalizing data), and output (applying or transferring data) (Costa 1985). As they also learned to use several responding strategies such as wait time and non-judgmental responses, success stories began to emerge throughout the district.

Teachers began to ask for more extensive training and for follow-up support to ensure successful use of the new strategies in their classrooms. In response, the assistant superintendent of instruction and the mentor teachers created the District Thinking Project in 1986-87.

In each of the schools electing to participate, the principal selected a lead teacher to work with a team of three or four project teachers. Project teachers participated in two half-days of training in questioning and responding strategies, while lead teachers received five days of training throughout the year to enable them to provide assistance to their teams.

Later we added observation and peer coaching (Joyce and Showers 1983) to the project. Further, we selected cognitive coaching (Costa and Garmston 1986) as the peer coaching model to elicit teachers' thinking about their own instructional practices. Its use of questioning and responding strategies was congruent with the thinking model for students.

Throughout the year, teachers applied questioning and responding strategies and incorporated thinking skills appropriate to their grade levels and to their content areas. As a result

of our emphasis on application, teachers were pleased that students participated much more actively than before. They reported that students took time to expand and justify their answers, willingly listened to the ideas of others, asked more questions, and raised more issues of their own.

In a year marred by severe state budget cuts to education, we are proud that our local board voted to expand the Thinking Project by creating a Level II stage of learning for teachers and adding four schools to the project. The enthusiasm of the teachers is reflected in this comment: "Too often we are trained in isolation with little follow-up or support. This project gives us the opportunity to grow together." □

## References

- Costa, Arthur L. *Teaching for Intelligent Behaviors: A Course Syllabus*. Orangevale, Calif.: Search Models Unlimited, 1984.
- Costa, Arthur L. "Toward a Model of Human Intellectual Functioning." In *Developing Minds: A Resource Book for Teaching Thinking*, edited by A. L. Costa. Alexandria, Va.: Association for Supervision and Curriculum Development, 1985.
- Costa, Arthur L., and Robert Garmston. *The Art of Cognitive Coaching: Supervision for Intelligent Teaching*. Carmichael, Calif.: The Institute for Intelligent Behavior, 1986.
- Joyce, Bruce, and Beverly Showers. "The Coaching of Teaching." *Educational Leadership* 40 (October 1983): 4-10.

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