

# Technology

## High Tech/High Think: Reflections on Wingspread

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I went to ASCD's Wingspread Conference on Teaching Thinking Skills anticipating interesting discussions about ways that technology could support the effort. I left with surprising observations.

First, although a handful of teachers and curriculum leaders are purposely using computers to support student learning of higher order thinking, national interest is only beginning to develop. After all, the present state-of-

the-art reflects poor articulation of what critical thinking is, how to develop it, and what obstacles to overcome. In some ways, therefore, the use of computers as an answer is preceding adequate identification of the question. This early developmental state and the glamor of computer assisted instruction hide the potential of the computer as an *information-handling* tool that can help the student organize and manipulate data, apply systematic

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problem-solving strategies, and assemble quantitative evidence for real-world decisions.

If there is to be a nationwide upgrading of skills in higher order thinking, and if technology is to achieve its potential, staff development must be more than traditional inservice training. Staff development has often failed to model higher order thinking and has seldom provided for its use, especially for reflecting on one's own thinking. Also, teachers have had few opportunities to develop and employ their skills in the immediate environment outside their own classrooms—the running of the school. Neverthe-

less, the school is one of the major settings where learning to think occurs; and the human beings in this environment can have more impact on learning as *models* and *mentors* of thinking than as mediators of instructional packages. But what does technology have to do with this?

Technology can play the role of what one conference participant (Irving Sigel) calls a "distancing tool," something that "actively creates *cognitive demands* on the individual to engage in activities such as planning, reconstructing, anticipating, predicting, and the like." Technology can provide the *reason*, the cognitive demand, to bring teachers, principals, and other school staff members together to employ higher order thinking skills in shaping their own environments.

To do this, we have to acknowledge the peculiarity of our present state of knowledge regarding technology such as computers. What we *don't know* about them can be more important in the long run than what we do know about them. That is, since our level of experience with these tools is so shallow, each faculty has an opportunity to develop its own appropriate knowledge base. As they begin to explore applications of the computer across the curriculum, principals, teachers,

and curriculum specialists can start out even. At least in this one dimension, the school can provide the professional opportunities for challenge, discovery, and reflective learning that translate into an intellectually stimulating climate for teachers *and* students.

I am suggesting that the pervasive interest in technology for the schools can be a catalyst for local strategies that involve faculty and staff in the executive processes of problem identification and selection, resource allocation, solution monitoring, and the like. Of course, technology may not be the only catalytic issue. In some districts, interest in improving the teaching of higher order thinking skills might itself serve as the issue. What is important, however, is that commitment to intellectual values in the classroom begins with parallel commitment to and support for intellectual values in the staff.

One final reflection comes from a quotation, not from the resource people but from the designer of Wing-spread—Frank Lloyd Wright. He said, "From-the-ground-up makes good sense for building . . . beware of from-the-top-down." If we are serious about influencing the teaching and learning of higher order thinking skills in American classrooms, Wright's words make good sense for us, too. □

## Reviews

### Child's Talk: Learning To Use Language

Jerome Bruner

New York

W. W. Norton & Co., 1983.

—Reviewed by Roy R. Pellicano, New York City Public Schools and City University of New York

The acquisition of language, writes Jerome Bruner, involves mastery of syntax, semantics, and pragmatics, which are developed interactively and interdependently as they become inseparable in a native speaker. This process, says Bruner, commences at birth and continues through its most crucial stages in early childhood.

Beginning with a set of language-learning predispositions called a "Lan-

guage Acquisition Device (LAD)," the infant, under the control of a primary caretaker, enters into a set of relationships that constitute a "Language Acquisition Support System (LASS)." According to Bruner, the interdependency of LAD and LASS during infancy and early childhood involves "a predictable format of interactions that serves as a microcosm for communicating" and builds "a shared reality" that provides entry into the linguistic community. Further, by providing access to the culture of the primary caretaker, the LASS allows the infant to shape and be shaped by the culture. The shared reality is the base from which "the child masters grammar (syntax), how to refer and mean (semantics), and how to realize his

intentions communicatively (pragmatics)."

The inputs, while fixed by LASS, are not immutable since interactions between caretaker and infant will be affected by the individuality of both, as well as by the social setting. Both caretaker and child are actively engaged in manipulating and negotiating with each other in order to control the environment.

Bruner acknowledges the importance of Noam Chomsky's work but aligns himself with the theories of Piaget and others who perceive the individual as an active social agent, not a being determined by nature or nurture. For Bruner, the acquisition of language is not only the learning of grammar, it is also the ability to make

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