

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. Nevertheless, 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 Wingspread—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 "Language 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

one's intentions known in order to mediate and control the environment. Language functions conjunctively as an instrument and a creator of culture, thus empowering the individual.

For educators, the key ideas of *Child's Talk* focus on the adult role in transmitting language, the active role of the infant in acquiring language, and the requirement for communication and interaction with the primary caretaker during early childhood and with significant others during later stages of growth and development. Bruner underscores the active nature of the infant and child and once again reinforces the imperative for a curriculum that assigns an active role to the learner. Further, in relating language to social empowerment, Bruner offers educators an opportunity to deepen and broaden their definition of literacy.

Bruner concludes, "Whatever else language is, it is a systematic way of communicating to others, of affecting their and our behavior, of sharing attention, and of constituting realities to which we then adhere just as we adhere to the 'facts' of nature." *Child's Talk* is a highly readable reminder that learning is interactive and grounded in nonschool variables. It suggests that educators may need to account for family and class factors if we are to achieve the level of literacy that is required in a post-industrial active society.

Available from W. W. Norton & Co., 500 Fifth Avenue, New York, NY 10036 for $13.95.

The Troubled Crusade: American Education 1945–1980

Diane Ravitch

New York:
Basic Books, Inc., 1983.

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

As a chronicle of all the major events in the politics of education since WWII, Diane Ravitch's *Troubled Crusade* superbly documents the validity of Dewey's observation that "it is well to remind ourselves that education as such has no aims. Only persons, parents, and teachers, etc., have aims, not an abstract idea like education."

Ravitch guides the reader through the maze of conflicting interests (political, socioeconomic, and philosophical) that have swirled around issues like progressive education, tests of patriotic loyalty, race and education, and equality of opportunity versus equality of results.

Ravitch delineates the supporters and the critics of each reform movement and draws the lessons to be learned; for example, "the more limited and specific the goal, the more likely was the reform to endure." She guides the reader through rich source material documenting the precedents for the 1954 *Brown* decision, as well as the findings in succeeding cases. She supplies the same careful documentation for both special education and bilingual education. The critical reader will discern Ravitch's support for meritocracy and equality of opportunity.

For Ravitch, the crusade of American education has been the fight against ignorance and for equality of opportunity. The roots of that crusade, according to Ravitch, are in Jefferson's idea that democracy needed an electorate grounded in literacy, with status achieved through merit. Thus, schooling came to be equated with both progress and the mitigation of socioeconomic problems and conflicts. In turn, school policies to promote social justice and/or social mobility generated long- and short-term social conflicts when segments of society perceived them as out of joint with the times or in conflict with their interests or values.

Ravitch contrasts the advocates of child-centered schooling, who want to socialize children into the society, with the advocates of traditional schooling, who want to develop the intellect by emphasizing cultural heritage and teaching content according to the internal logic of the material.

Ravitch also makes a distinction between John Dewey and the progressive educator—whom she equates with the education bureaucrat, the professor of education, and the curriculum specialist. In her view, it was the progressive/professional educator who "inverted Dewey's notion of the school as a lever of social reform into the school as a mechanism to adjust the individual to society," thus reinforcing the existing order while undermining academic excellence and critical thinking.

Ravitch's historical material and documentation should provoke readers to think regardless of their ideological perspectives. As her views and values emerge alongside those she describes, readers can appreciate the significance of values, explicit and implicit, in both description and prescription of educational reform. They are compelled to question their own educational values and search for contradictions between their aims and their priorities.

The merit of *The Troubled Crusade* lies not only in its rich historical description but also in its power to evoke a reconsideration of the roles of schools and education in a post-traditional society. Read it.

Available from Basic Books, 10 East 53rd St., New York, NY 10022 for $19.95.

State of the World: 1984

Lester R. Brown and Associates

New York:
W. W. Norton & Co., 1984.

—Reviewed by Harold G. Shane, Indiana University, Bloomington.

Educators say they lack the time to keep abreast of developments in education, let alone the world. Events not only transpire with mesmerizing rapidity; the reporting of events by increasingly powerful and extensive media becomes overwhelming. This book offers assistance to educators who want reliable information about economic and ecologic developments.

Published early this year by Worldwatch Institute, a Washington-based research group, *State of the World: 1984* presents timely data on population trends, energy resources, and deforestation-acid rain problems. The status of nuclear power in the U.S. and overseas is reviewed, and careful heed

is given to the challenge of feeding the earth's billions. A chapter on "Reshaping Economic Policies" should interest those concerned with staggering debt-and-deficit decisions—an incandescent issue in an election year.

Seventy-six tables and 29 figures provide quick insight into complex data. End notes provide evidence of scholarship and references for further study. While written for adults, the book can be read with interest and profit by teenagers seeking a first-rate reference for classroom discussions and papers.

Available from W. W. Norton & Co., 500 Fifth Ave., New York, NY 10036 for $15.95.

CHARLES SUHOR

Language and Thinking Across the Curriculum

When speaking about thinking skills in the curriculum, subject area specialists focus on thinking skills peculiar to their disciplines. Visual arts specialists discuss imagery and perspective; mathematicians emphasize ability to visualize mathematical processes or estimate results; music educators offer distinctions related to intonation or rhythmic structure. Surely, the claims for distinctive mental skills advanced by scholars like Arnheim and Saloman are valid (Olson, 1974). But they also recognize that some aspects of perception and cognition enter into the learning of more than one school subject.

Interpreting olfactory signs (that is, odors) can be important in chemistry, woodworking, and home economics. Inferring motivation is part of the study of both history and literature; so is a sense of narrative. And skills like comparing/contrasting, tracing cause and effect, categorizing, and sequencing come to play in most academic and artistic pursuits. The assumption that "generic" thinking skills underlie school learning is basic to thinking skills programs like Strategic Reasoning and SOI (Bossone, 1983).

Oddly, though, specialists often overlook the fact that *in school settings, language is essential to all kinds of learning*. Teachers and students use language in order to understand all other symbol systems, from physical education to geography to calculus. Musicians and artists use language to articulate their intentions and discuss their techniques. Students and teachers alike use language to describe their cognitive and affective responses to poems, computer programs, or dissected frogs.

Moreover, we know far more about most subjects when we can talk or write fluently about them than when we merely respond to objective test items or to rapid-fire recitation questions. Why do students (and mass testing programs) favor recognition of information and short-answer responses over involved explanations? Because the latter require inventive resymbolization of knowledge, a demonstration that the learner is genuinely fluent in the subject matter.

Christopher Thaiss (1984) speaks of "the inseparableness of language, thinking, and learning. If we do not apply the full range of language resources to our learning of any subject, then we stifle thought, conscious and unconscious, and so deprive ourselves of more than the most superficial understanding." This full range of language resources, moreover, includes written language. As James Britton (1975) states, "An essential part of the writing process is explaining the matter to oneself."

Verbalization, as the fulfillment of understanding, is the core, not only of many thinking skills programs, but also of much theory and research in classroom interaction, small group instruction, and cooperative learning (Staton, 1984; Moffett and Wagner, 1983; Johnson and others, 1984.) Powerful support for the idea of language across the curriculum comes also from Jean Piaget, who notes that "language is but one among many aspects of the semiotic function, even though in most instances it is the most important." John Carroll points out that nonlinguistic forms "are almost always accompanied by language and often require language to make them intelligible." Umberto Eco feels too that "Language is the most powerful semiotic device that man has invented." (Suhor, in press).

Language as a way of thinking and learning, then, is not an educational buzzphrase. It is an essential aspect of any productive classroom environment, and the most compelling demonstration that thinking skills are, in fact, being taught effectively across the curriculum.□

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Related Resources

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