BOOK REVIEWS

Smith, F. (1990). *To think.* New York: Teachers College Press, 180 pp., $25.50 (softcover).

A colleague of mine in the English department argues that the purpose of a liberal arts education is to teach people to read, write, and think. Moreover, she often laments about the seeming difficulty of these tasks (the teaching and the learning), judging from the quality of the papers she has to grade. She wonders if perhaps her students' reading and writing difficulties stem from their inability to think. I have recommended that she read Frank Smith because he is a writer who has addressed himself to the fundamental educational issues of reading, writing, and thinking in a most provocative and illuminating way.

Frank Smith is best known in educational circles for his books and articles about reading and the teaching of reading. Smith's dictum that we "learn to read by reading" seems, on the face of it, a self-evident truism but he has demonstrated that much (so-called) classroom reading instruction does almost everything *but* provide opportunities for children to read. Smith has also turned his considerable talents to a study of writing (*Writing and the Writer*, 1982), but in the volume under consideration returns to the subject matter which he first addressed 17 years ago in *Comprehension and Learning: A Conceptual Framework* (1975) — thinking. In a sense all of Smith's 15 books have been about thinking, but in this volume he addresses the phenomenon of thinking in a more direct and deliberate manner.

Smith begins *To Think* with a list of 77 English verbs related to thinking — starting with "analyze" and ending with "wonder" — speculating on what these words refer to. He points out that all such words refer to things that people *do* rather than what is going on in the brain. Thus, he argues that "the language of thinking is not about brains, but about people" (p. 4). And, although he often speaks (metaphorically) of what the brain is doing, this is not a book about neuroscience because, as Smith indicates, to date all of our efforts to scan and probe the brain's neurophysiological activity give us no insights about what people are actually thinking when these phenomena are occurring in the brain. So Smith's book is about people and not brains. More precisely, Smith's book is about what people do when they say they are thinking (or imagining, or remembering, or believing, or . . .). Smith argues that all thought is a form of action, overt or imagined, for we "cannot do things without thinking, and we cannot think without contemplating doing things" (p. 5). This conviction of the centrality of thought to human action leads to Smith's central thesis which is that, contrary to my English colleagues' view, thinking is something natural and ubiquitous in human experience, not unnatural, rare, and difficult to learn.

In the second chapter of the book, Smith turns his attention to what he terms "commonplace thinking" and elaborates on his view that it is the business of the brain to think, which he characterizes as the construction of reality based on experience. Smith thus locates himself firmly in the camp of cognitive, constructivist psychology. He points out that just because we are often not aware of thinking doesn't mean we aren't thinking; in fact, he clearly shows how "life would be a shambles without thought of the most complex kind, even among children" (p. 16). At this point Smith also introduces his critique of claims that thinking can be taught by means of problem solving or critical thinking programs. Solving problems or thinking critically does not involve certain skills; rather, they require knowledge (i.e., experience). Difficulty in solving problems is primarily a result of not knowing enough about what we are trying to think about rather than an inability to think. Similarly with reasoning: Smith asserts that ability to reason comes with understanding what you are endeavoring to reason about. "Thinking is easy when we understand what we are thinking about and becomes difficult when what we try to think about is *contrived* rather than an integral part of whatever we would otherwise be engaged in at the moment" (p. 27).

This last point is central to the development of Smith's argument in the remaining chapters (3 - 9) of his book, especially in relation to thinking and education. Smith argues that most of our modern conceptions of learning derive from the field of experimental psychology which has constructed its learning theories based almost entirely on *contrived* learning both in terms of the situation (laboratory) and the content (nonsense syllables). He shows how modern schooling is often a reflection of this emphasis on artificially controlled laboratory learning with its talk of skills, direct instruction, reinforcement, testing, and so forth. What is required in schools, according to Smith, are not more contrived programs in critical and creative thinking but the creation of an environment in which thinking critically and creatively are valued. Such an environment is characterized by the presence of three conditions: "the thinker's broad understanding of whatever matters are being thought about, disposition to think about these matters, and authority to do so" (p. 124). Thus, the first task of schools is to help students become knowledgeable about many matters. For example, one can't think critically about Margaret Atwood's literary vision if one has never read anything by Atwood, no matter how well one can compare and contrast, distinguish fact from opinion, detect propaganda, and so on.

Although the disposition to think critically is a highly idiosyncratic matter, Smith suggests that it is largely a function of the company we keep; thus, educational institutions should be staffed by people who themselves are engaged in relevant and worthwhile thinking. Such thinking should be "embedded in every activity of the day, not as an exercise or subject matter, but as the way things are done" (p. 125).

Finally, the authority to think has everything to do with the respect that students are accorded in schools. This respect must be reflected not only in the personal relations that exist among students and teachers but also in a move away from requiring students to be passive absorbers of content, towards encouraging them to be participants in the activity of *doubting*. This authority to doubt is central, says Smith, because "all thinking is based on 'suppose things were different'" (p. 129). In the end, the crucial educational question is whether schools can become or are willing to become the kinds of places that are fertile with questioning, not in the sense of teachers' constantly catechizing students to assess how much they know, but of everyone's investigating contemporary reality to try to understand why it is the way it is. How will students learn to think clearly and boldly, especially about their own education? Only by seeing teachers engaging in thought in this way, beginning, as I've suggested, with a joint examination of the educational system itself (p. 130).

In this brief review I have omitted any references to Smith's discussion of many other fascinating aspects of thought such as the relation of thought to music, mathematics, movement, and other nonverbal realities. I have also not commented on his critiques of computers as putative "thinking machines" and the current "learning styles" fad. The book is supported by 26 pages of notes which provide further elaborations of Smith's insights and many references to additional reading sources.

I have some difficulty with Smith's radical commitment to constructivist psychological theory. Throughout the book Smith is at pains to argue that the brain does not simply interpret the reality of what the senses record, but rather that it constructs its own reality from raw sensory data. Yet, Smith betrays this commitment to radical constructivist psychology when he frequently uses a term like "objective reality" in the conventional manner of one who is quite at ease with making clear distinctions between subjective and objective knowledge. I am also disappointed in his inadequate treatment of the relation between knowledge and belief as it relates to thinking. This is, however, a very provocative book which addresses many important issues of direct concern to educators.

There are, as Smith himself is aware, other "experts" who take quite a different approach to many of the questions about thinking raised in his book. Not all of them can be correct and it will obviously not do to ask the experts themselves for the definitive answers. The only course open to any of us interested in thinking about these matters, suggests Frank Smith, is — to think.

References

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Robert W. Bruinsma
The King's College
Edmonton, Alberta

Désautels, J. & Larochelle, M. (1989). *Qu'est-ce que le savoir scientifique?* Québec: Les Presses de l'Université Laval, 173 pp., $23.52 (softcover).

L'ouvrage porte sur la connaissance scientifique et la représentation que les jeunes étudiants et étudiantes en ont dans leur éducation en science selon une méthodologie qui tient de l'interprétation des discours. Or, les résultats de cet ouvrage reposent sur le processus de la déconstruction et de la reconstruction des discours. Ils illustrent le fait que ni la révolution épistémologique consécutive à l'invention de la théorie de la relativité de Newton et de la mécanique quantique en physique de Einstein, ni celle qui a été introduite par les sociologues de la science moderne, n'ont eu une influence sur l'attitude cognitive des jeunes envers le savoir scientifique et sa production. Les jeunes étudiants et étudiantes précisent que, dans les témoignages présentés, la science devrait conduire à la découverte d'une structure immuable du monde réel et indépendamment de toute observation. Tel est donc le propos essentiel de l'ouvrage dont il est ici question.

Basé sur un bon nombre de sources philosophiques, cet ouvrage qui constitue un programme de recherche important démontre l'incompatibilité entre, d'un côté, ce que les jeunes apprennent de la science à l'école et, de l'autre, ce qu'en disent les spécialistes en la matière. Or, les travaux montrent clairement que la juxtaposition de la pensée philosophique la plus évoluée et de l'anachronisme de l'éducation à la science suscite deux choses: une révision des outils d'enseignement et la prise de conscience chez les éducateurs et les éducatrices des effets pervers de l'instillation d'une épistémologie dépassée. Car, contrairement à ce que beaucoup de lecteurs et lectrices pourraient penser, les auteurs illustrent clairement que les jeunes apprécient de fournir un effort intellectuel en science. Mais plus que cela, les jeunes y prennent réellement plaisir à le faire (p.4).

La principale raison qui motivent Désautels et Larochelle à rencontrer les jeunes adolescents et adolescentes est la volonté de compréhension de ce qu'ils et elles pensent et savent de la nature scientifique afin de les mieux aider à en