REVIEWS

What's at Stake in the K-12 Standards Wars: A Primer for Policy Makers, edited by Sandra Stotsky. New York, Peter Lang, 2000, 369 pp., $32.95 paperback.

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This book by several hands has been overseen by Dr. Sandra Stotsky of the Harvard Graduate School of Education and Deputy Commissioner for Academic Affairs of the Massachusetts Department of Education. She must be one of the most independent-minded scholars in any education school or state department of education. Under her able editorship, this book scrutinizes the scholarship, slogans, and work products of those very institutions, and it is not destined to please most of their incumbents.

The authors of the book are distinguished scholars and scientists who are not affiliated by profession with K-12 education. Wayne Bishop, David Klein, Ralph Raimi, and Hung-Hsi Wu are professors of mathematics. Paul Clopton is a research statistician. Thomas Carnelli and Jeanne Smoot are professors of English, Robert Costrell is a professor of economics, Mary Campbell Gallagher is a linguist, Chris Patterson a public policy analyst, Sheldon Stern a historian, Alan Cromer a professor of physics, Paul Gross, Michael McKeown, and Stan Metzenberg are professors of biology. They combine a high level of intellectual rigor with a commitment to the improvement of public education. They are true "public intellectuals," volunteering their energies and their probing scholarship to help that cause.

The thirteen chapters are focused on state and national content standards and tests, and on various nationally sponsored reform efforts, especially by the National Science Foundation. In general these scholars find that the standards, the tests, and the national programs are ill-thought-out, ineffective, needlessly infected with ideology, and based on spurious research. Officials charged with improving educational standards in more than forty states and in national organizations and agencies should read this important and carefully documented book. So should concerned citizens. It is written in a clear style, and is sometimes, as in the delightful piece on mathematics by Professor Raimi, spiced with pungent wit.

Professor Metzenberg's contribution, which focuses on the national science standards created by the American Association for the Advancement of Science, "Benchmarks for Scientific Literacy," may stand as an index to the quality of the whole collection. Observing that the AAAS standards are vague and unhelpful, with much space devoted to "hands-on" pedagogy and "real world" understanding—buzzwords in progressive-education rhetoric—Dr. Metzenberg undertook to examine the research cited to undergird the "Benchmarks." His effort reminded me of an admonition I received from a great scholar early on in my graduate school days: "Always check the footnotes."

What Metzenberg found was: (1) Half of the work cited did not consist of peer-reviewed studies. (2) Of the peer-reviewed articles, none offered clear support for the positions taken by the "Benchmarks," and most were inferior science that would not have been accepted in a peer-reviewed journal of high quality. Several researchers, for instance, claimed that "traditional" science teaching leads to "scientific misconceptions." Yet Metzenberg found that these writers not only misrepresented and misinterpreted the children's responses, but possessed scientific misconceptions

themselves. In one study, ten students were asked to discuss the cooling of a hot piece of metal, and the researchers reported:

> Some students appeared to be unaware that every cooling process requires an interaction partner. It appears that they held the idea that bodies may cool spontaneously without other (colder) bodies being involved.

This is, of course, incorrect as Metzenberg points out. Objects may cool by radiation without requiring "an interaction partner." By the time one finishes reading Metzenberg's account of his examination of the "science" behind the benchmark document, one is filled with admiration for his patience and devotion, and at the same time left with a feeling of indignation that a premier scientific organization could be so unscientific. Metzenberg's examination of sources is the most detailed of the book, but similar carefully researched conclusions are drawn by Paul Gross regarding the guidelines put out by the National Academy of Sciences, and by McKeown, Klein, and Patterson regarding the programs sponsored by the National Science Foundation. These estimable organizations have apparently taken upon faith the expert testimony from the education world—a credulousness that the scientists who belong to these organizations would not exhibit in their own domains.

The metaphor of war in this book's title is not too extreme to describe the current political and ideological conflicts between American adults over the education of American children. The two sides of the war are called respectively "traditionalists" and "progressivists." But these are misleading terms. "Traditionalists" favor an approach to education that has not been traditional in the United States for at least fifty years. "Progessivism," which has been the dominant orthodoxy for half a century, is socially unprogressive. "Progressivism" has in fact become traditional and orthodox, whereas "traditionalism" has become iconoclastic and reformist. The progressivist "reformers" are defending the status quo. The public is understandably confused.

Everyone has been to school and has educational opinions. In the absence of decisive knowledge, choosing sides in the education wars may be determined simply by one's individual experience or, more often, by one's political leanings, as in this sort of line-up:

"Progressivism"	"Traditionalism"
Democrats	Republicans
Washington Post	*Wall Street Journal*
Broad general standards	Specific standards
Learning skills	Facts
Student-centered instruction	Teacher-centered instruction
Learning as natural	Learning as hard work
Understanding math	Mastering math procedures
Whole-Language	Phonics
Invented spelling	Learned spelling
Going at one's own pace	Grade-by-grade goals
Cooperative learning	Whole-class instruction
Hands-on learning	Conceptual learning
Performance-based tests	Standardized tests
Interdisciplinary projects	Separate subject matters

The list could be expanded, but you get the idea: progressivists are humane and deep; traditionalists are tough and results-oriented. Progressivists are romantic. They believe that the child's divine soul should follow its natural bent. Traditionalists are Augustinian. They think that the child's far-from-benign soul needs to be civilized. Needless to say, these opposed views are widely held in American culture, very often in suspension in the same heart

and mind. But that does not always mean that we are all suffering from self-contradiction and cognitive dissonance. On the contrary, there is truth to be found in both lists, depending on the age-group being addressed, and the condition of advantage or disadvantage of the student.

If unreconcilable views of human nature alone were to determine the side one took in the education wars, then we could resign ourselves to endless conflict. As Private Willis observed in "Iolanthe," every boy and every gal born into the world alive is either a little liberal or else a little conservative—and there's nothing to be done about it. But such resignation would be premature, as this book demonstrates. Written by scholars who belong to both the political left and right, it shows that sound science, scholarship, and educational policy are not purely ideological pursuits.

The idea, for instance, that "real-world" understanding of mathematics depends on learning through "hands-on" manipulatives and "real-world" applications is an extreme oversimplification, as the mathematicians in this book attest. An example would be a problem taken from a test for Japanese 12-year-olds reproduced by Clopton, Bishop, and Klein.

> Hose A takes 45 minutes to fill the bucket with water.
>
> Hose B can do the same in 30 minutes. If you use both hoses, how long will it take you to fill the bucket?

It is obvious, at least to this gardener, that this is a real-world problem alright. But it is equally obvious that fiddling with hoses is not going to get me the right answer. I have to know the arithmetic procedures, and I have to know them cold—including when it is appropriate to apply which procedures. The dichotomies are false, and the education wars about standards and tests are mainly necessary to rebalance a one-sided, content- indifferent theology of education.

Over the past decade, more than 40 states have created documents with titles such as "Standards of Learning." That fact itself is of historic importance, and raises the question: "What were the states doing for educational guidelines before the recent standards movement arrived?" The answer: "Very little." The reason for this, you will be told, is that education is a local matter in the United States. But that answer fails to explain the lack of concrete educational guides in the localities. Every school district has issued vague documents with statements like, "the child will learn about other cultures," or "the child will learn word-attack skills." But until the standards movement arrived, these vague, padded district documents compelled the classroom teacher to determine the classroom curriculum, with the result that children at the same grade level in the same school building are being taught quite different content.

The standards movement is supposed to change that, but as Dr. Stotsky and her coauthors show, the standards movement has been hijacked by the very people who had been disinclined to offer definite content standards before they were ordered to do so by state legislatures. The legislative decision to produce standards has been a change of enormous importance in the history of American education, but it is being carried out by the content-suspicious progressives who had failed to produce definite content standards before. The result has been, with some notable exceptions, state and national standards that de-emphasize specific content.

To anyone who is easily scandalized by intellectual sloppiness or dishonesty, this will be a gripping book. One had expected

that ideological biases might well show up in standards for history and literature. But one did not expect it—at least I did not—from the National Academy of Sciences, the National Science Foundation, and the National Council of Teachers of Mathematics. The proposals are largely indifferent to the details of the scientific discipline that is most central to sound educational policy—psychology. One can only wonder what the distinguished psychologists of the National Academy must think of the standards produced in its name. One must also wonder what members of the psychological division of the National Science Foundation must think of the vast sums of money spent by its educational division on scientifically unsound projects that have wasted great amounts of money and thwarted the intellectual potential of children. How could these estimable scientific organizations be so unscientific? One reason may be that the slogans of progressivism have appealed to all of us outside the field of education. We, too, believe in "inquiry" and "understanding" rather than the rote memorization of "mere facts." Progressive slogans continue to hold sway because they are so appealing and sound so plausible. This book is a highly useful contribution to the necessary task of deconstructing those plausible-sounding slogans, and correcting their oversimplifications and misapplications. Only after corrective work of this nature has been completed by first-rate scholars and scientists—such as the authors of this book—can a truce be called in the education wars.

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