

3

National Standards: Lessons from the Past, Directions for the Future¹

Margaret E. Goertz

THE REAUTHORIZATION of the No Child Left Behind (NCLB) Act renewed calls by organizations across the political spectrum for national standards. The bipartisan Commission on No Child Left Behind (NCLB 2007) recommended the development of voluntary model national content and performance standards and tests in reading and language arts, mathematics, and science based on the National Assessment of Educational Progress (NAEP) frameworks. Groups as ideologically diverse as Education Trust and the Fordham Foundation supported these recommendations. In 2009, forty-eight states agreed to take part in the Common Core State Standards Initiative, a joint effort by the National Governors Association and the Council of Chief State School Officers to develop common K–12 and college- and career-readiness standards in mathematics and language arts. Adoption of these standards will be voluntary, but the U.S. Department of Education will provide some financial incentives for states to accept them.

The arguments in support of national standards today echo those of the past: they will promote democracy, equity, and economic competitiveness. The arguments against national standards are also familiar: they will lead to the establishment of a national curriculum; one size does not fit all; and local communities,

1. This paper is based on the article “Standards-Based Reform: Lessons from the Past, Directions for the Future” by Margaret E. Goertz in *Clio at the Table*, edited by Kenneth Wong and Robert Rothman (New York: Peter Lang Publishing, 2008).

not the federal government, know what is best for their students. The context for the debate, however, differs from that in earlier years. The extent of the federal government's involvement in elementary and secondary school education is unprecedented. Professional organizations in several disciplines, such as the National Council of Teachers of Mathematics (NCTM), have developed standards that address students' learning goals, assessment, and instruction (NCTM 1989, 1991, 1995, 2000, 2006). NAEP's proficiency levels have become de facto national performance standards, benchmarks against which the performance of states is judged (or confirmed). Indeed, the disparity between state and NAEP proficiency standards has been a driving force in the current push for national standards.

If the nation already has de facto content and performance standards, the adoption of voluntary national standards would appear to be a logical next step in federal education policy. Yet, the same underlying issues bedevil the adoption of national standards now as in the past: what kinds of standards, whose standards, and with what effect? More specifically, policymakers must reach consensus on the type, content, and specificity of the standards; determine who will develop the standards; and facilitate the implementation of the standards.

This chapter discusses what we have learned over the years about standards and their implementation in an attempt to guide and improve future policy. Although the concept of "standards" encompasses a range of education policies and practices in the mathematics education community (e.g., curriculum: NCTM [1989, 2000, 2006]; appropriate teaching: NCTM [1991]; and assessment: NCTM [1995]), I use the term to reflect *content* and *performance* standards for students, the focus of current policy debates about national standards. *Content standards* are broad descriptions of knowledge and skills that students should acquire and be able to do in a particular subject area. They indicate the topics and skills that should be taught at various grades or grade spans and are intended to guide public school instruction, curriculum, teacher preparation, and assessment. *Performance standards*, in contrast, provide explicit definitions and examples of what students must demonstrate to show that they have mastered the content standards. Performance standards delineate how good is "good enough." As a practical matter, however, performance standards are expressed in the form of "cut scores" on standardized tests.

This chapter begins with a very brief overview of the history of standards in the United States. Its second section discusses the implementation and effect of the standards-based reform movement over the past thirty years. The final section raises a set of issues facing policymakers who advocate national standards—or any standards—as the keystone of education reform in the years to come.

A Brief History of Education Standards

Education standards have been expressed through laws, common curriculum and textbooks, and entrance requirements for more than 200 years. The type (content, performance, input), target (students—all or differentiated; teachers; schools; districts) and use (improving educational quality, increasing educational opportunity, monitoring, gatekeeping) of the standards, however, have changed over time.

One could argue that the founding fathers in the United States delineated the first education standards in their writings about the purpose of education and in the education clauses of early state constitutions. Ravitch (1995) argues that schools in the nineteenth century had common content and performance standards as defined by relatively similar curricular materials (e.g., readers, geography books), grading systems, and, for high schools, college admission requirements and examinations.

In 1893, the Committee of Ten sought to improve high school curriculum and standardize preparation for college by establishing high standards for *all* high school students, whether college bound or workforce bound. Similar to guiding bodies in the current standards movement, they recommended what should be taught in each subject area, how students' knowledge should be assessed, and how teachers should be prepared to teach the content. These standards affected few students, however, because only one in ten youth were enrolled in high school at the turn of the twentieth century. In contrast, the *Cardinal Principles of Education*, issued by the National Education Association's Commission on the Reorganization of Secondary Education (CRSE 1918), called for a curriculum that would adapt the school program to individual differences in interest and ability. This approach seemed well suited for the expanding population of high school students who came from working-class and immigrant families, but resulted in differentiated program and content standards. The principles of the Committee of Ten and college admission standards defined the content of the academic track in high schools, whereas those of CRSE applied to the general and vocational tracks (Ravitch 1995). The equity and excellence movements of the second half of the twentieth century, and the current debate over national standards, are attempts to reconcile these very different visions for educating our youth.

The equity movement of the late 1960s directed new attention to inequities in schools, particularly in poor and minority communities. Concerns about students' inability to read and compute (c.f., Kline [1973]) led many states to implement testing and other policies in the 1970s to hold educators accountable for the operation and performance of their schools and to hold students accountable for the mastery of basic skills through high school graduation tests. When states instituted minimum competency tests in the 1970s, teachers paid attention

to the competencies and prepared students for the tests. This emphasis on basic skills, coupled with federal funding for compensatory education through the Elementary and Secondary Education Act, increased the achievement of minority students and, to a lesser extent, students from educationally disadvantaged families (Smith and O'Day 1991). Concerns were raised then, however, as now, that teachers narrowed the curriculum to the tested content, which was low-level mathematics and reading.

Success in raising basic skills was not matched by a commensurate rise in student performance on higher-order skills or in performance that was on par with the country's international competitors. This situation triggered the next round of education reform—one focused on more stringent input standards and, increasingly, on more rigorous content and performance standards. The standards-based reform movement emerged in the late 1980s and early 1990s through the work of a group of education leaders, governors, businessmen, researchers, and professional organizations such as NCTM and the American Association for the Advancement of Science. Under the theory of standards-based reform, states establish challenging content and performance standards for all students and align primary state policies affecting teaching and learning—curriculum and curriculum materials, preservice and in-service teacher training, and assessment—with these standards. States then give schools and school districts greater flexibility to design appropriate instructional programs in exchange for holding schools accountable for students' performance (Smith and O'Day 1991).

These ideas were incorporated into federal policy, beginning with the Improving America's Schools Act of 1994, which required states to develop challenging content standards in at least reading and mathematics, create high-quality assessments to measure performance against these standards, and have local districts identify low-performing schools for assistance. The Goals 2000 legislation and such programs as the National Science Foundation's State and Urban Systemic Initiatives provided funds for states and localities to design the components of a standards-based system and to build the capacity of local districts to implement these reforms. With the enactment of the NCLB Act of 2001, the federal government expanded its role significantly, requiring states to test more frequently and set more ambitious and uniform improvement goals for their schools, and prescribing sanctions for schools that fail to meet these goals. The substance of academic content and proficiency standards, however, remains the responsibility of states. States are constitutionally responsible for education, and federal law forbids its agencies from mandating, directing, or controlling the specific instructional content, curriculum, programs of instruction, or academic achievement standards and assessments of states, school districts, or schools (Fuhrman 2004).

In summary, calls by some for "national standards" have many things in common with the past. Periodic pushes have been made over the centuries for com-

mon standards and for higher standards for all students. A new factor, however, is that the talk of high standards takes place in a context in which all students are expected to attend and complete high school. Accountability for the outcomes of schooling has shifted from students to schools and school districts, and the purposes of assessment have expanded from placing and promoting students to generating indicators of performance of the education system and motivating educators to consider changes in their instructional content and strategies.

Implementing Standards

Has the articulation of specific content and performance standards made a difference? Studies of standards-based reform conducted at the end of the twentieth and the early twenty-first century show that standards and accountability systems are driving educational change.

Standards Matter

Although the public is divided in its support of the NCLB Act (Rose and Gallup 2007), the concept of higher academic content and performance standards is generally accepted among the public, educators, and policymakers. Most parents support continuing to raise standards, and most students say that requiring them to meet higher standards for promotion and graduation is a good idea (Johnson, Arumi, and Ott 2006). Teachers also believe in the intrinsic value of standards. They believe that state standards identify what their students should know and be able to do, that the standards are compatible with good educational practice, and that the public should hold students and educators to account for meeting certain outcomes. Teachers find standards useful for bringing focus and consistency of instruction within and across schools. They also find standards helpful for guiding their own instruction and aligning their instruction with them, although they believe that standards include more content than they can cover in a year, and are, in some instances, too vague to give useful guidance (Kannapel et al. 2001; Massell et al. 2005; Johnson, Arumi, and Ott 2006; Stecher et al. 2008).

The perceived legitimacy of state assessment systems, however, is much lower, particularly among teachers. Teachers do not believe that state tests are necessarily a good measure of their students' mastery of content, and many raise concerns about the lack of alignment among standards, curriculum, and assessment. But teachers report that they align instruction with assessment and focus more on standards (Goertz and Massell 2005; Stecher et al. 2008). Teachers, schools, and districts are also paying attention to the data generated by assessments. Teachers review assessment results to identify students who need additional help, topics that require more emphasis, and gaps in curriculum and instruction. Districts and schools are increasing their use of annual and interim student test data to plan

for school improvement, to change curriculum and instructional materials, and to focus professional development (Massell 2001; Padilla et al. 2006; Stecher et al. 2008).

Incentives to Use Standards Matter

Accountability has gotten people's attention, for better or worse. Educators are responding to the press of performance-based accountability even though they believe that accountability and assessments narrow the curriculum and constrain their teaching approaches, and even when they do not feel an immediate threat from sanctions or see the possibility of rewards (Goertz 2001; Kelley et al. 2000; Massell et al. 2005; Stecher et al. 2008). Stronger accountability has also focused educators' attention on traditionally underserved populations of students. Although some educators still question whether all students can attain high standards, their expectations for these students are considerably higher than in the past. Teachers report that they search for more effective teaching methods, focus more on standards and on topics and formats emphasized in assessments, and change some elements of their instructional practice in response to state assessments (Goertz and Massell 2005; Kannapel et al. 2001). Districts have responded to the accountability press by providing assistance to schools, although not always the kinds of intensive support envisioned under NCLB (Center on Educational Policy 2007; Padilla et al. 2006; Stecher et al. 2008).

Consequences, however, are not sufficient in and of themselves to encourage action consistently across districts or schools. Staff members in some low-performing schools feel little pressure and react only minimally. An important factor in staff responsiveness is whether their district leaders take a strong stand on accountability, mandating or in other ways encouraging their schools to take action. Professional pride and the acceptance of the intent of reform are other factors that explain changes in teacher behaviors (Goertz and Massell 2005).

Researchers have identified negative consequences of increased accountability pressure as well. High-stakes accountability has led to more time spent on test-preparation activities, narrowing of the curriculum, and increased attention to "bubble kids," or children who are performing at just below the pass rates of mandated assessments (c.f., Booher-Jennings [2005]; Firestone, Schorr, and Monfils [2004]; McMurrer [2008]; Shepard and Dougherty [1991]; Stecher et al. [2008]). Concern over the negative impact of more difficult tests on students, particularly students of color and English language learners, has slowed the development of new high school tests aligned with higher standards and led some states to delay the requirement of students' passage of these tests for high school graduation (Fuhrman, Goertz, and Duffy 2004). And, under the press of NCLB sanctions, states have called for changes in ways that schools are identified for

improvement, such as increasing subgroup sizes, incorporating confidence intervals in the measurement of proficiency, and using growth models.

Who Sets Standards and Incentives Matters Even More

States use different processes for setting and updating academic content standards, setting proficiency standards, and designing accountability systems. Who sets standards can affect the legitimacy of standards among educators and the public.

Teachers are more likely to support standards set by other educators or their professional associations than by government. Although professional organizations such as NCTM have used consensus processes to develop standards, consensus over the content of standards remains elusive both within and outside the education community. States have faced philosophical battles over what should be taught (e.g., evolution, social science content) and how (e.g., different approaches to teaching mathematics and reading). For example, the teaching of mathematics became the subject of heated controversy in California and other states, with traditionalists (including some university mathematics professors) battling reformers over appropriate pedagogy (teacher-directed versus student-constructed knowledge) and curricular emphasis—process (problem solving and mathematical reasoning) versus content (facts, computation, and algorithms). The resulting standards placed greater emphasis on basic skills and traditional pedagogy and assessment formats (c.f., Smith, Heinecke, and Nobel [1999]; Wilson [2003]).

These battles are not new. Schoenfeld (2004) argues that the underlying issues being contested in mathematics education are more than a century old. Is mathematics for the elite or for the masses? Should mathematics be studied because it develops the ability to reason, for its cultural value, or for its economic value? Standards-based reform has shifted the venue for these battles, however, from local school boards to state boards of education and state legislatures. Although skirmishes continue in local communities and debates rage in the academic and practitioner communities, combatants now mobilize to influence the content of state curriculum frameworks, and, in many states, the selection of instructional materials.

Standards Are Necessary but Not Sufficient to Change Teaching and Learning

Rigorous standards may require teachers to teach different content and to teach that content differently. As recognized in the NCTM *Standards* (1989, 2000), building teachers' knowledge and skills is a crucial component of the

change process, and the theory of action underlying both standards-based reform and NCLB assumes that states and local school districts possess, or can develop, the capacity to assist school improvement efforts, to bring all students to proficiency, and to pay for these efforts.

Districts have been aligning curriculum and instruction for more than a decade, both vertically with state standards and horizontally with other elements of district and school policies and procedures. Many districts have taken additional steps to align instruction by developing more specific local standards; publishing curriculum guides with standards, frameworks, and pacing sequences; and issuing documents that map the content of required textbooks to standards and assessments (c.f., Massell and Goertz [2002]; Padilla et al. [2006]). Most districts with schools identified as needing improvement report using other strategies, such as school improvement planning; the use of data and research to guide instruction; increasing the quantity or quality of professional development; providing extra time for, and more intensive academic instruction to, low-performing students; and increasing instructional time in reading and mathematics, particularly in elementary schools. Districts are also restructuring the elementary school day to teach core content areas in greater depth (Center on Educational Policy 2007; Padilla et al. 2006).

States and districts lack capacity, however, to provide *intensive* support to low-performing schools and students, the kind of support they need to meet the high academic standards as envisioned under NCLB. Only half the districts with schools in need of improvement report that they have school support teams, and only one-third provide additional full-time school-level staff to support teacher development, mentors, or coaches for the principal (Center on Educational Policy 2007; Padilla et al. 2006). Furthermore, the availability and intensity of support varies by the size of districts. This variability in level of support is worrisome because most technical assistance comes from school districts. Districts, in turn, report they turn to their state departments of education and education service agencies for help (Center on Educational Policy 2006). As with districts, however, resource-intensive state assistance covers only a portion of low-performing schools (Padilla et al. 2006). States with large or growing numbers of schools and districts identified for improvement are focusing support on their most challenged schools, leading to calls for differentiated treatment of, and consequences for, schools under NCLB.

Considering National Standards

Education policy in the United States has changed considerably in the past twenty years. All states have content standards, assessments, and accountability systems that include all students and focus attention on students' learning. In most

states, the rigor of standards is higher than in the past, although many stakeholders argue that current standards are not rigorous enough. If low standards are the problem, then the solution lies in generating higher-quality academic standards (perhaps national standards), encouraging states to adopt them, and supporting schools and districts in implementing more-challenging curricula. The push for reform based on national standards raises five issues for policymakers, however.

First, what is the nature of the problem? Are standards too lax? Are they too general? Are they too incoherent? Critics charge that standards in most states are not as challenging as those in high-performing nations and that too few students are gaining the knowledge and skills they need to succeed in college and the workplace. In contrast with other countries, our state academic standards are unfocused, lack coherence, and have led to a curriculum in the United States that is “a mile wide and an inch deep” (c.f., Schmidt, McKnight, and Raizen [1997]; Rothman [2004]). Or, have we established suitable standards but set our expectations for students’ performance too low? States vary widely in the percent of students who are proficient on their state standards, ranging from 87 percent in Mississippi to 34 percent in Missouri (U.S. Department of Education 2006). Is this range due to variation in content standards or in proficiency standards? Is the quality and coverage of state assessments problematic? If we establish national standards, must we also create national assessments and proficiency standards (such as NAEP) to accurately measure what students know and are able to do?

Second, what constitutes good standards? How specific should they be? What learning trajectories should they incorporate? Should they include assessment frameworks? Instructional strategies? What research exists on the most effective characteristics of standards? Have any states benchmarked their standards against international standards and, if so, with what effect on teaching and students’ learning? Do we (and how do we) know whether one state’s standards are superior to another’s? How can research on how students’ learning typically proceeds over time in specific content areas guide the design of standards?

Third, who should develop national standards? Should this function be the purview of federal organizations, such as the National Assessment Governing Board; national bodies, such as the National Academy of Science; professional organizations in the disciplines, such as NCTM; or consortia of states, such as the American Diploma Project? What should be the relative roles and contributions of academics, practitioners, parents, business, and the public in the development of standards? As discussed previously in this chapter, these decisions have both normative and political implications.

Fourth, what are the incentives for states to adopt new standards? Would a federal requirement of states to benchmark their standards against national, international, or multistate standards as a condition of receiving Title I funds be politically feasible? Previous attempts to do so have failed. The Goals 2000 Act of 1994

created a federal agency, the National Education Standards and Improvement Council, with the responsibility of certifying voluntary national content and performance standards and certifying that state standards “are comparable to or higher in rigor and quality than national standards” (Ravitch 1995). The following year, the new Republican majority in Congress repealed this provision of Goals 2000, and the federal government now approves each state’s standard-setting process, not the content of its standards. The publication of NAEP scores is intended to serve as a check on state assessments, enabling the public to compare state proficiency standards and confirm changes in students’ performance. We do not know, however, whether publicizing discrepancies between performance on states’ own assessments and NAEP has led any states to consider raising their standards.

Fifth, what kinds of support do states, districts, schools, and teachers need to improve failing schools and raise students’ performance? Who will provide the needed resources and support? Is it fair to hold students and schools accountable for meeting more-rigorous academic standards if they are not given the opportunity to learn the tested content? Because a high school diploma is a property right, courts require states to ensure that high school students have sufficient opportunity to learn the skills assessed on a test required for graduation. These include teaching the tested skills (“curricular validity”) and any evidence of successful remediation attempts. This principle does not apply, however, to other policies involving education accountability, and the concept of opportunity-to-learn standards remains controversial and not well defined. Although NCLB’s requirement that all schools have “highly qualified” teachers is intended to address one inequity in the delivery of educational services, large disparities in education spending across as well as within states remain a major barrier to ensuring equal access to a high-quality education.

In conclusion, the adoption of national standards would appear to address concerns about the quality and equity of elementary and secondary school education in the United States. Frameworks for national standards already exist in several disciplines. Experience with current standards suggests that national standards could make some difference in what is taught and in what students learn. Yet, they are not a panacea for what ails American education. As with most public policy, the devil is in the details of the design and implementation of national standards. Proposals for national standards raise the ever-present issue of who controls our educational system. Although the federal government expanded its role significantly under NCLB, states remain constitutionally, fiscally, and substantively responsible for education, and schools and their staffs ultimately determine how standards are enacted in the classroom. Can national standards alone bring coherence to our highly decentralized and fragmented educational system?

REFERENCES

- Booher-Jennings, Jennifer. "Below the Bubble: 'Educational Triage' and the Texas Accountability System." *American Educational Research Journal* 42 (Summer 2005): 231–68.
- Center on Education Policy. *From the Capitol to the Classroom: Year 4 of the No Child Left Behind Act*. Washington, D.C.: Center on Education Policy, 2006.
- . *Moving beyond Identification: Assisting Schools in Improvement*. Washington, D.C.: Center on Education Policy, 2007.
- Commission on No Child Left Behind (NCLB). *Beyond NCLB: Fulfilling the Promise to Our Nation's Children*. Washington, D.C.: Aspen Institute, 2007. <http://www.aspeninstitute.org/policy-work/no-child-left-behind/background-materials>.
- Commission on the Reorganization of Secondary Education (CRSE). *Cardinal Principles of Education*. Washington, D.C.: National Education Association, 1918.
- Firestone, William A., Robert Y. Schorr, and Lora F. Monfils. *The Ambiguity of Teaching to the Test*. Mahwah, N.J.: Lawrence Erlbaum Associates, 2004.
- Fuhrman, Susan H. "Less Than Meets the Eye: Standards, Testing, and Fear of Federal Control." In *Who's in Charge Here? The Tangled Web of School Governance and Policy*, edited by Noah Epstein, pp. 131–63. Washington, D.C.: Brookings Institution, 2004.
- Fuhrman, Susan H., Margaret E. Goertz, and Mark C. Duffy. "'Slow Down, You Move Too Fast': The Politics of Making Changes in High-Stakes Accountability Policies for Students." In *Redesigning Accountability Systems for Education*, edited by Susan H. Fuhrman and Richard F. Elmore, pp. 245–73. New York: Teachers College Press, 2004.
- Goertz, Margaret E. "Standards-Based Accountability: Horse Trade or Horse Whip?" In *From the Capitol to the Classroom: Standards-Based Reform in the States*, One Hundredth Yearbook of the National Society for the Study of Education, Part 2, edited by Susan H. Fuhrman, pp. 39–59. Chicago: University of Chicago Press, 2001.
- Goertz, Margaret E., and Diane Massell. "Holding High Hopes: How High Schools Respond to State Accountability Policies." *CPRE Policy Brief RB-42*. Philadelphia: University of Pennsylvania, Consortium for Policy Research in Education, 2005.
- Johnson, Jean, Ana Maria Arumi, and Amber Ott. "Is Support for Standards and Testing Fading?" *Reality Check 2006*, no. 3, July 20, 2006. <http://www.publicagenda.org/reports/reality-check-2006-issue-no-3>, June 16, 2009.
- Kannapel, Patricia J., Lola Aagaard, Pamela Coe, and Cynthia Reeves. "The Impact of Standards and Accountability on Teaching and Learning in Kentucky." In *From the Capitol to the Classroom: Standards-Based Reform in the States*, One Hundredth Yearbook of the National Society for the Study of Education, Part 2, edited by Susan H. Fuhrman, pp. 242–62. Chicago: University of Chicago Press, 2001.

- Kelley, Carolyn, Allan R. Odden, Anthony Milanowski, and Herbert Heneman III. "The Motivational Effects of School-Based Performance Awards." *CPRE Policy Brief RB-29*. Philadelphia: University of Pennsylvania, Consortium for Policy Research in Education, 2000.
- Kline, Morris. *Why Johnny Can't Add: The Failure of the New Mathematics*. New York: St. Martin's Press, 1973.
- Massell, Diane. "The Theory and Practice of Using Data to Build Capacity: State and Local Strategies and Their Effects." In *From the Capitol to the Classroom: Standards-Based Reform in the States*, One Hundredth Yearbook of the National Society for the Study of Education, Part 2, edited by Susan H. Fuhrman, pp. 148–69. Chicago: University of Chicago Press, 2001.
- Massell, Diane, and Margaret E. Goertz. "District Strategies for Building Instructional Capacity." In *School Districts and Instructional Renewal*, edited by Amy M. Hightower, Michael S. Knapp, Julie A. Marsh, and Milbrey W. McLaughlin, pp. 43–60. New York: Teachers College Press, 2002.
- Massell, Diane, Margaret E. Goertz, Gail Christensen, and Matthew Goldwasser. "The Press from Above, the Pull from Below: High School Responses to External Accountability." In *Holding High Hopes: How High Schools Respond to State Accountability Policies*, edited by Bethany Gross and Margaret E. Goertz, pp. 17–41. Philadelphia: University of Pennsylvania, Consortium for Policy Research in Education, 2005.
- McMurrer, Jennifer. *Instructional Time in Elementary Schools*. Washington, D.C.: Center on Education Policy, 2008.
- National Council of Teachers of Mathematics (NCTM). *Curriculum and Evaluation Standards for School Mathematics*. Reston, Va.: NCTM, 1989.
- . *Professional Standards for Teaching Mathematics*. Reston, Va.: NCTM, 1991.
- . *Assessment Standards for School Mathematics*. Reston, Va.: NCTM, 1995.
- . *Principles and Standards for School Mathematics*. Reston, Va.: NCTM, 2000.
- . *Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics: A Quest for Coherence*. Reston, Va.: NCTM, 2006.
- Padilla, Christine, Heidi Skolnik, Alejandra Lopez-Torkos, Katrina Woodworth, Andrea Lash, Patrick A. Shields, Katrina Laguarda, and Jane L. David. *Title I Accountability and School Improvement from 2001 to 2004*. Washington, D.C.: U.S. Department of Education, Office of Planning, Evaluation and Policy Development, Policy and Program Studies Service, 2006.
- Ravitch, Diane. *National Education Standards in American Education: A Citizen's Guide*. Washington, D.C.: Brookings Institution Press, 1995.
- Rose, Lowell C., and Alec M. Gallup. "The 39th Annual Phi Delta Kappan/Gallup Poll of the Public's Attitudes toward the Public Schools." *Phi Delta Kappan* 89 (September 2007): 33–48.
- Rothman, Robert. "Benchmarking and Alignment of State Standards and Assessments." In *Redesigning Accountability Systems for Education*, edited by Susan H. Fuhrman and Richard F. Elmore, pp. 96–137. New York: Teachers College Press, 2004.

- Schmidt, William H., Curtis McKnight, and Senta Raizen. *A Splintered Vision: An Investigation of U.S. Science and Mathematics Education*. Boston: Kluwer, 1997.
- Schoenfeld, Alan. "The Math Wars." *Educational Policy* 18 (January 2004): 253–86.
- Shepard, Lorrie A., and Katharine C. Dougherty. *Effects of High-Stakes Testing on Instruction*. Chicago: Spencer Foundation, 1991.
- Smith, Marshall S., and Jennifer O'Day. "Systemic School Reform." In *The Politics of Curriculum and Testing*, edited by Susan H. Fuhrman and Betty Malen, pp. 233–67. London: Falmer Press, 1991.
- Smith, Mary Lee, Walter Heinecke, and Audrey J. Nobel. "Assessment Policy and Political Spectacle." *Teachers College Record* 101, no. 2 (1999): 157–91.
- Stecher, Brian M., Scott Epstein, Laura S. Hamilton, Julie A. Marsh, Abby Robyn, Jennifer Sloan McCombs, Jennifer Russell, and Scott Nafital. *Pain and Gain: Implementing No Child Left Behind in Three States, 2004–2006*. Santa Monica, Calif.: RAND Corporation, 2008.
- U.S. Department of Education. *National Assessment of Title I: Interim Report to Congress*. Washington, D.C.: U.S. Department of Education, Institute of Education Sciences, 2006.
- Wilson, Suzanne M. *California Dreaming: Reforming Mathematics Education*. New Haven, Conn.: Yale University Press, 2003.