

# The Cost of Accountability

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## I. IS ACCOUNTABILITY EXPENSIVE?

A good accountability program includes a combination of testing, standards against which the test results can be compared, and report cards that relay this information (as well as information on schools' level and use of resources) to parents and policymakers. Proponents of school accountability tout the benefits of a well-run accountability system: information for teachers and principals who need to diagnose their students' progress, information that gives schools incentives to perform, information for parents who need to make choices among schools, and information on the degree to which schools are teaching the material that their constituents (parents, voters, school boards, legislators) want them to teach. In fact, school accountability programs are generally seen as *complementary* to other types of school reform. School choice, for instance, should work better if parents have more information, rather than less.

Opponents of school accountability mount arguments on two fronts: poor quality of tests and the expense of accountability. It is natural to care about the quality of tests

because students will naturally spend time learning the material that is tested and schools will naturally tend to align their curricula with the material that is tested. Indeed, it is the *intention* of a good school accountability system that students study the material tested. The quality of tests and standards, though important, is the topic of other chapters in this book. This chapter focuses instead on the second argument against accountability—its expense. Some opponents of school accountability argue that it is so expensive that it will crowd out other policies, such as class size reduction or higher teacher salaries. Other opponents argue that it is so expensive to have a *good* accountability program (which includes good tests, well-defined standards, an effective report card system, and safeguards that prevent cheating) that only poor accountability systems will be affordable.

Understanding the cost of accountability turns out to be much simpler than understanding what makes a good test or set of standards. Facts are the best answer to questions about costs, so this chapter presents the facts. The facts about how much accountability costs, fortunately, are knowable. This is because the costs must show up in two places: as expenditure on some government's (usually the state's) budget and as revenue on some company's (mainly the test-maker's) accounts. A skeptic might ask, however: "Even if the accounting facts are knowable, won't they be imperfect? In one state, the salaries of state personnel who oversee the program might end up being counted as a cost of accountability; but another state might count such personnel as mere general staff of the state's department of education." This is a reasonable concern, but it turns out that such accounting details are not worthy of much worry. The costs of accountability programs are so small that even the most generous accounting could not make them appear large relative to the cost of other education programs.

## II. WHAT TEST-MAKERS' REVENUES TELL US ABOUT THE COST OF ACCOUNTABILITY

Nearly every achievement and ability test administered to American elementary and secondary school students is purchased from a commercial test-making firm, which also grades the test and prepares reports at the state, district, school, grade, class, and student levels. The same firms support their tests with curriculum guides, suggested standards for criterion-based tests, and materials designed to help schools understand the tests and standards and use them wisely. Indeed, test-makers tend also to be textbook publishers, so the knowledge on which they base tests and standards is generally the same knowledge that they must be able to defend for inclusion in textbooks.<sup>1</sup> The American elementary and secondary testing and standards industry is dominated by several well-known firms: Harcourt-Brace Educational Measurement, Reed-Elsevier, Houghton-Mifflin, Prentice-Hall, CTB/McGraw-Hill, and so on. In practice, these firms rely on similar psychometric research and routinely hire experts from one another. The firms publish tests with names that are nationally familiar (such as the Stanford 9, Comprehensive Test of Basic Skills/Terra Nova, and Iowa Test of Basic Skills), but they also write the states' specialized tests, such as the Connecticut Mastery Tests, the Texas Assessment of Academic Skills, Florida Writes, and *all* of the others.

Because of the small number and consistency of the firms involved, analysts have a very clear sense of the industry's revenue from accountability systems. According to the Association of American Publishers, the total revenue associated with accountability systems (revenue from sales of tests, revenue from standards-related materials such as curriculum guides and criteria, and revenue from services associated with

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<sup>1</sup>The only important noncommercial elementary or secondary test is the National Assessment of Educational Progress, which is administered to a random sample of American students at the behest of the United States Department of Education.

accountability such as consulting for state government) amounted to \$234.1 million in 2000. Because this figure includes a variety of intelligence quotient tests, diagnostic tests for disabled children, career guidance tests, and the like, it overstates firms' revenue associated with accountability. Nevertheless, the revenue amounts to only \$4.96 per American student! Table 1 shows that even when we add in the cost of the National Assessment of Educational Progress, the only important elementary or secondary test *not* associated with a commercial test-maker, the cost of accountability is \$5.81 per student. Such costs represent a very small share of the cost of educating American children: average per-pupil spending in the United States was \$8,157 in the 2000–2001 school year. Put another way, payments to all test-makers (including the United States government) represented just 0.07 percent (seven-hundredths of 1 percent) of the cost of elementary and secondary education. Even if payments were *ten times as large*, they would still not be equal to 1 percent of what American jurisdictions spend on education.

In short, it seems likely that people who oppose accountability because of its costs have not investigated the revenue of test-makers, which suggest that the costs are extremely modest.

### III. WHAT STATES' EXPENDITURES TELL US ABOUT THE COST OF ACCOUNTABILITY

Not all costs of state accountability systems end up as revenue that accrues to test-makers, however. States certainly can and do run accountability systems by just paying for tests, for publishing results, and for writing and publishing the standards on which the tests are graded. Indeed, such states spend *less* than \$4.96 per student for their systems. Other states put more elaborate systems in place and have additional costs. For instance, some states have asked test-makers to design tests and curriculum guides that are specific to the state. Developing such materials costs more than using an “off-the-shelf” test, but the additional costs vary

TABLE 1  
National Measures of the Cost of Assessment

	<i>Total for United States (thousands)</i>	<i>Per Public School Pupil in United States</i>
Standardized Testing Industry (Sales including tests, scoring, and distribution of score reports)	\$234,100	\$4.96
National Assessment of Educational Progress (cost of entire program; this national test is sample-based)	\$40,000	\$0.85

with the degree to which the state desires an idiosyncratic test. An assessment system that requires only modest adaptation and augmentation of a test-maker's existing materials will obviously cost less than an assessment system that has to be written nearly from scratch, albeit using much of the same knowledge and expertise that goes into off-the-shelf tests. Moreover, states can choose to create a larger or smaller bureaucracy associated with an accountability system. Whereas some states administer their systems with existing department of education staff or just a few additional staff, other states add numerous personnel who promulgate standards, run seminars for principals and teachers, and answer parents' questions. As a rule, states add more personnel when their accountability systems are more idiosyncratic (to the state) or more controversial with the public (so that more public relations are required). Also, a state that adds numerous personnel at the start-up of a system will often need fewer personnel to continue the system once the first few years are over and schools are accustomed to the process. Apart from payments to test-makers and their experts, a state's accountability budget may show some or all of the following expenses: the cost of running an office of accountability, the salaries of accountability bureaucrats at the state department of education, the cost of publishing

school report cards (in addition to publishing test results and standards), the cost of ongoing redevelopment and evaluation of the system itself, the cost of consultants, and reimbursement to school districts for any costs that are imposed on them (such as training counselors on how to explain the system to parents). Because accountability systems tend to be popular with the public (according to Public Agenda, 94 percent of the public favor testing and standards), states have an incentive to exaggerate, not understate, the share of their department of education's overhead associated with accountability. Thus, once we add up a states' reported expenses for its accountability system (including payments to test-makers), we have (if anything) a slightly overstated sense of how much it costs a state to run a system.

Table 2 reviews the costs of twenty-five states' accountability systems. The twenty-five systems shown include the nation's most expensive systems because they naturally have the most specialized offices, which are the best at providing timely, detailed cost information. Table 2 shows which subjects are tested, which grades are tested, and both total and per-pupil costs. All of the states test reading (R) and mathematics (M), but some also test writing (W), science (S), social studies and history (SS), a foreign language (FL), the arts (A), vocational studies (V), computers and technology (C), or health and physical education (H). The most commonly tested grades are elementary and middle school grades, where off-the-shelf tests or modest adaptations of them are most appropriate. (There is widespread agreement that third graders ought to be numerate and able to read simple material. There is more controversy about what high school students should know.) Nevertheless, all but one of the twenty-five states test high school students—with a few testing students in every year of high school and several requiring a high school graduation test or high school competency exam.

TABLE 2  
The Costs of Various States' Accountability Systems  
(Fiscal Year 2001 Unless Otherwise Noted)

<i>State</i>	<i>Subjects Tested*</i>	<i>Grades Tested**</i>	<i>State Total (000s)</i>	<i>Per Public School Pupil in State</i>
California	R,W,M,S,SS,FL	2-12	\$120,565	\$19.93
Kentucky	R,W,M,S,SS,A,V	3-12	\$11,662	\$18.00
Texas	R,W,M,S,SS	3-12	\$82,422	\$20.30
Washington	R,W,M,S,SS	3-4,6-10	\$14,910	\$14.84
Virginia	R,W,M,S,SS,C	3-5,7-8,9-12	\$19,251	\$17.13
Arizona	R,W,M	1-9,12	\$7,790	\$8.72
Connecticut	R,W,M,S	4,6,8,10	\$8,972	\$16.20
Delaware	R,W,M,S,SS	3-6,8,10-11	\$3,896	\$34.02
Colorado	R,W,M,S	4-5,7-8,10	\$11,769	\$16.24
Georgia	R,W,M,S,SS	3-6,8,11	\$6,809 <sup>‡</sup>	\$4.74
Idaho	R,W,M	2-9,11	\$4,000	\$16.32
Indiana	R,W,M,A	3,6,8,10	\$24,284	\$24.32
Minnesota	R,W,M	3,5	\$11,289	\$13.23
Michigan	R,M,S,SS	4,5,7,8,9-12	\$16,400	\$6.64
Ohio	R,W,M,S,SS	4,6,9,12	\$15,692	\$8.61
New Jersey	R,W,M,S	4,8,9-12	\$16,688	\$12.94
Pennsylvania	R,W,M	5,6,8,9,11	\$15,000	\$8.27
New Hampshire	R,W,M,S,SS	3,6,10	\$2,100	\$10.16
Massachusetts	R,W,M,S,SS	3-10	\$19,169	\$20.47
New York	R,W,M,S,SS	4,8,9-12	\$13,314	\$4.72
Wisconsin	R,W,M,S,SS	3,4,8,9-12	\$5,240	\$5.97
West Virginia	R,W,M	1-12	\$3,622	\$12.67
South Carolina	R,W,M	1,3-8,11	\$1,196	\$1.79
Maryland	R,W,M,S,SS	3,5,8,9-12	\$20,540	\$24.26
Missouri	R,W,M,S,SS,H	3-5,7-11	\$13,730	\$15.37

\* The subjects listed are not necessarily tested in every grade listed. Both criterion-referenced and norm-referenced tests are listed. The abbreviations are: R=Reading (including a variety of English Language Arts, Spelling, and Listening tests), M=Mathematics, W=Writing, S=Science, SS=Social Studies and History (including advanced tests in global history, U.S. history, geography), FL=Foreign Language, A=Arts and Humanities, V=Vocational Studies, C=Computers and Technology, H=Health and Physical Education.

\*\* The grades listed do not necessarily have tests administered in every subject listed.

‡ Data are for fiscal year 2002.

The per-pupil cost of accountability varies in Table 2, not only because states engage in different amounts of testing and have different “bells and whistles,” but also because less-populated states spread the fixed costs of a system (especially an idiosyncratic system) over fewer pupils than large states do. At the low-cost end, there are states such as South Carolina (\$1.79 per pupil) and Georgia (\$4.74 per pupil). At the high-cost end, there are states such as Delaware (\$34.02 per pupil) and Maryland (\$24.26 per pupil). Even acknowledging that it is likely that states such as South Carolina understate the costs and that states such as Delaware overstate them, we have a good sense of the range. Just to keep things in perspective, note that even if every state had the per-pupil accountability costs that Delaware reports, their systems would still account for only 0.4 percent (less than one-half of 1 percent) of per-pupil expenditure on American public schools.

#### IV. CASE STUDIES SHOWING THE COSTS OF STATES' ACCOUNTABILITY SYSTEMS

While Table 2 gives us a good overall sense of the cost of accountability, curious readers may want to know more detail. I picked out several states with rather elaborate and well-documented accountability systems and investigated the details of their costs. Tables 3 through 8 show the results.

First, consider Arizona's system, the costs of which are presented in Table 3. Arizona is a fairly typical state in that it uses both an off-the-shelf test (the Stanford Achievement Test in grades 1 through 9) and a test designed specifically for the state (Arizona's Instrument to Measure Standards test, popularly known as “AIMS,” in grades 3, 5, 8, and 12). Arizona tests students in reading, writing, and mathematics, a pattern that is also fairly typical. Arizona reports that the testing itself cost \$5.93 per student, which is reasonable given the mix of inexpensive off-the-shelf tests and more expensive state-specific tests. Arizona has a student

TABLE 3  
The Costs of Arizona's Accountability System (Fiscal Year 2001)

<i>Activity Related to Arizona Assessment</i>	<i>Total for Arizona (thousands)</i>	<i>Per Public School Pupil in Arizona</i>
Achievement Testing	\$5,299	\$5.93
Student Accountability Information System	2,003	2.24
School Report Card System	489	0.55
Total	\$7,790	\$8.72

Arizona's Instrument to Measure Standards Test: Reading (grades 3,5,8,12); Writing (grades 3,5,8,12); Mathematics (grades 4,7,10,12); Stanford Achievement Tests: Reading (grades 1-9), Mathematics (grades 1-9), Language (grades 1-9).

TABLE 4  
The Costs of California's Accountability System (Fiscal Year 2001)

<i>Activity Related to California Assessment</i>	<i>Total for California (thousands)</i>	<i>Per Public School Pupil in California</i>
Public School Accountability Act Personnel	\$1,905	\$0.31
Public School Accountability Act Consultants	250	0.04
Test Experts for STAR and High School Exit Exam	360	0.06
New Personnel Required for STAR	400	0.07
Consultant for High School Exit Exam	107	0.02
Web site to Explain Assessment System	1,000	0.17
Activities to Ensure the Integrity of STAR and High School Exit Exam	210	0.03
Activities to Ensure that STAR and High School Exit Exam Are Aligned with California Standards	3,000	0.50

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TABLE 4 (*continued*)

Reliability Testing of Golden State Exams	300	0.05
STAR Exam	65,643	10.85
High School Exit Exam	14,799	2.45
English Language Development Assessment	14,474	2.39
Test Development	12,000	1.98
Golden State Exam	1,493	0.25
Career Technical Assessment	843	0.14
Assessment Review and Reporting	3,781	0.62
Total	\$120,565	\$19.93

California Augmented Version of Stanford Test: Reading, Language, and Spelling (grades 2–11), Mathematics (grades 2–11), Science (grades 9–11), Social Studies (grades 9–11); High School Exit Exam; Golden State Exam: Reading/Language (grades 9–12), Written Composition (grades 9–12), Mathematics (grades 9–12), Science (grades 9–12), Spanish (grades 9–12), History and Social Science (grades 9–12).

TABLE 5

## The Costs of Kentucky's Accountability System (Fiscal Year 2001)

<i>Activity Related to Kentucky Commonwealth Accountability Testing System</i>	<i>Total for Kentucky (thousands)</i>	<i>Per Public School Pupil in Kentucky</i>
Administration of System	\$344	0.53
Implementation of System including:	10,736	16.57
Standards Setting		
Longitudinal Assessment		
Actual Administration of Test		
Portfolio Assessment		
School Report Cards		
Validation and Research Related to System	581	0.90
Total	\$11,662	\$18.00

Reading (grades 4,7,10), Mathematics (grades 5,9,11), Science (grades 4,7,11), Social Studies (grades 5,8,11), Arts and Humanities (grades 5,8,11), Writing (grades 4,7,12), Vocational Studies (grades 5,8,11), National Norm Referenced Test (grades 3,6,9).

TABLE 6  
The Costs of Texas' Accountability System (Fiscal Year 2001)

<i>Activity Related to Texas System</i>	<i>Total for Texas (thousands)</i>	<i>Per Public School Pupil in Texas</i>
Governor's Reading Initiative	\$25,000	\$6.16
Texas Reading to Read Program	1,000	0.25
All Other Assessment Programs, Including Evaluation of Assessment System, Development of New Assessment Instruments, and Distribution of Study Guides	42,556	10.48
Successful Schools Award Program: Parent-Teacher Conference Component	500	0.12
Successful Schools Award Program: All Other Components	2,000	0.49
Accountability System Operations at Texas Education Agency, Including Computer and Software Consultants	11,366	2.80
Total	\$82,422	\$20.30

Reading (grades 3–8, high school exit), Mathematics (grades 3–8, high school exit), Science (grade 8), Social Studies (grade 8), Writing (grades 4,8, high school exit), Algebra (end of course), Biology (end of course), U.S. History (end of course), English II (end of course), Reading Proficiency in English (limited English students, grades 3–12), State Developed Alternative Assessment (special education students).

accountability information system that follows each student's progress over time, computes value-added for each student, and tracks each student's grade progression and movement among schools. The information system is run through an office of the state department of education and costs \$2.24 per pupil. Finally, Arizona publishes the test results, its standards, and a myriad of other information about schools (staffing, enrollment, mission, special programs, spending) in a school report card. These report cards are not only distributed to parents and policymakers;

TABLE 7  
The Costs of Washington's Accountability System  
(Fiscal Year 2002)

<i>Activity Related to Washington Assessment of Student Learning</i>	<i>Total for Washington (thousands)</i>	<i>Per Public School Pupil in Washington</i>
Assessment Implementation	\$11,209	\$11.16
Continuing Development of Assessment	3,000	2.99
Assessment "Institutes" that Teach School Staff to Interpret Results	500	0.50
Interpretation Training for Second-Grade Teachers	71	0.07
Internet Posting of Assessment Results	130	0.13
<b>Total</b>	<b>\$14,910</b>	<b>\$14.84</b>

Washington Tests: Reading (grades 4,7,10), Mathematics (grades 4,7,10), Writing (grades 4,7,10), Listening (grades 4,7,10), Science (grades 8,10), Iowa Test of Basic Skills (grades 3,6), Iowa Test of Educational Development (grade 9).

TABLE 8  
The Costs of Virginia's Accountability System  
(Fiscal Year 2001)

<i>Activity Related to Virginia Standards of Learning System</i>	<i>Total for Virginia (thousands)</i>	<i>Per Public School Pupil in Virginia</i>
Development and Administration of Materials and Tests Related to Standards of Learning	\$17,968	\$15.99
Literacy Passport Test	923	0.82
Pilots of Online Testing, Electronic Materials	360	0.32
<b>Total</b>	<b>\$19,251</b>	<b>\$17.13</b>

Virginia Standards of Learning Tests: Writing (grades 3,5,8), Mathematics (grades 4,7,10), English and Reading (grades 3,5,8), Science (grades 3,5,8), History and Social Studies (grades 3,5,8), Computers and Technology (grades 3,5,8), World History (grades 9-12), U.S. History (grades 9-12), World Geography (grades 9-12).

they are also made available at all public libraries and can be viewed on (and downloaded from ) a dedicated Web site. The report card system costs \$0.55 per pupil so that Arizona's system costs a total of \$8.72 per pupil. Arizona's system is widely perceived as a system that is comprehensive without being overbearing (Arizona does not use it to enforce a particular curriculum), and part of the fame of the state superintendent who implemented it, Lisa Graham Keegan, is due to the system's being a model for other states. Thus, it is reasonable to take Arizona's \$8.72 per pupil as a benchmark for a comprehensive but not-over-elaborate system.

California has a system that is considerably more elaborate, especially at present. This is because California is in the midst of modifying one system (STAR) and designing another (the Golden State Exams), so it is simultaneously paying for the development of multiple tests. California has a specially adapted and augmented version of the Stanford Achievement Test (STAR), which it uses in grades 2 through 11 to test reading, language, spelling, mathematics, science (grades 9 through 11 only), and social studies (grades 9 through 11 only). California is also paying for a high school exit exam and the state-specific Golden State Exams, which are tests for grades 9 through 12 in reading, language, written composition, mathematics, science, Spanish, and history and social science. California also has an array of activities that complement its exams: seminars for school staff, experts to explain the system, experts to evaluate how the system is aligned with California's standards, ongoing evaluation and review of the system, and a few additional tests (English language development and career assessment). In short, California's system is elaborate not only because it is very comprehensive; it is elaborate also because California is fully in the midst of its development. One might think that such a system would be expensive, but the total cost per pupil is \$19.93, about twice that of Arizona's system but still a very small 0.2 percent (two-tenths of 1 percent) of American per-pupil spending.

Personnel to administer California's system include new department of education staff for the Public School Accountability Act (\$0.31 per pupil) and STAR tests (\$0.07 per pupil), consultants for the Public School Accountability Act (\$0.04 per pupil) and high school exit exam (\$0.02 per pupil), and test experts for STAR and the high school exit exam (\$0.06 per pupil). These personnel may seem like a lot, but when spread over all the students in a state, their salaries and fees just do not amount to much (\$0.50 per pupil). Similarly, the total cost of complementary activities is a modest \$3.60 per pupil. The complementary activities include a Web site (\$0.17 per pupil); test integrity (\$0.03 per pupil); alignment with state standards (\$0.50 per pupil); reliability testing (\$0.05 per pupil); test development, including that of the Golden State Exams (\$1.98 + \$0.25 per pupil); and assessment review (\$0.62 per pupil). In short, in California it is still the tests themselves that generate the bulk of the costs, and we have already seen that these costs are not great.

Kentucky has a well-known assessment system, partly because its system has some unusual elements such as longitudinal assessment (a complex value-added system in which expert statisticians control for student characteristics) and portfolio assessment, in which students' actual classroom work is assembled in a structured portfolio and analyzed by an outside expert, such as an educator. In other words, Kentucky's system contains a high degree of individuation for each student and has features that require many hours of work from expert consultants. Kentucky is, thus, a useful benchmark for anyone interested in individuated systems. The state's Commonwealth Accountability Tests are administered in grades 4, 5, 7, 8, 9, 10, 11, and 12, although not every subject is administered in every grade. The subjects are diverse: reading, mathematics, science, social studies, arts and humanities, writing, and vocational studies. Kentucky also administers an off-the-shelf norm-referenced test in grades 3, 6, and 9, partly to ensure that the state-specific tests remain comparable to other American tests.

Although Kentucky's expenditure statements do not contain as much detail as we would like, they do inform us that implementing the system (including setting the standards, administering the test, assessing the portfolios, performing longitudinal assessment, and distributing school report cards) costs a total of \$16.57 per student. This is almost twice as much as Arizona's system, but the longitudinal and portfolio assessment *are* more expensive evaluation methods. The Kentucky Commonwealth Accountability Testing System also requires \$0.53 per pupil for administration and \$0.90 per pupil for ongoing validation and research related to the system.

The Texas system of assessment and accountability is one of the most comprehensive in the United States. The state administers the Texas Assessment of Academic Skills test in reading and math in grades 3 through 8 and at the high school exit level. Texas also tests social studies and science in grade 8, and it tests writing in grades 4 and 8 and at the high school exit level. There are end-of-course examinations in algebra, biology, U.S. history, and English II. Tests are administered in both English and Spanish, and they are fully integrated with Texas' standards for every grade (the Texas Essential Knowledge and Skills). Students with limited English proficiency take the Reading Proficiency Test in English in grades 3 through 12, and special education students take the State-Developed Alternative Assessment. The state is currently spending money on the development of tests for gifted and talented students. The Texas Education Agency has what is almost certainly the most developed database system in the United States for tracking student achievement. Indeed, every student is followed as an individual (longitudinally), regardless of where he or she moves in the state. Students are even being followed into the college system. Texas makes many of its data and reports available online, both in user-friendly forms for parents and in databases for researchers. Schools are evaluated, and school report cards are distributed and publicized. Schools receive modest rewards for good performance.

Texas' comprehensive system costs \$20.30 per student. This includes the rewards for schools, continuing development and evaluation of the program, and maintaining the data systems that track students. Of this total, \$6.41 is spent on the two reading assessment programs for young students, and \$10.48 is spent on all the other tests. The reward program spends \$0.49 per student rewarding schools for doing well on the assessment instruments and spends another \$0.12 per student rewarding schools that get a high percentage of parents to attend parent-teacher conferences. Assessment costs \$0.61 per student. Administration, computers, and consultants account for the remaining \$2.80 per student.

Finally, let us consider the states of Washington and Virginia, which differ from Arizona's typical system mainly because the two states have *just* begun to implement state-specific tests. In other words, Washington and Virginia are at the most expensive stage that a state can expect to experience when setting up a state-specific system. In the first few years, implementing an assessment system is not routine, so it costs more. Also, in its first few years, a system continues to be developed and needs to be explained to educators and the public.

Washington State administers state-specific tests in reading, mathematics, writing, listening, and science. These tests focus on grades 4, 7, and 10. The state also administers the Iowa Test of Basic Skills in grades 3 and 6 and administers the Iowa Test of Educational Development in grade 9. Implementing this new system cost \$11.16 per student. Continuing development of the system costs an additional \$2.99 per student, and outreach efforts to explain the system to educators and parents cost \$0.70 per student. The total is \$14.84 per student.

Virginia has developed an ambitious set of state-specific tests called Virginia Standards of Learning. The tests are given mainly in grades 3, 5, and 8 and in high school. Several subjects are tested: writing, mathematics, English and reading, science, social studies, computers and technology,

world history, U.S. history, and world geography. The implementation and continuing development of these tests cost \$15.99 per student. In addition, Virginia administers a literacy test (\$0.82 per student) and is working on an online version of its test and related curricular materials (\$0.32 per student). The total is \$17.13 per student.

## V. PUTTING ASSESSMENT COSTS IN PERSPECTIVE

People who argue against accountability systems based on their costs often claim that the systems will crowd out other school programs. Recalling this argument, it is useful to put the costs of accountability in perspective by considering (1) per-pupil spending in the United States and (2) the costs of two popular policies, class size reduction and higher teacher salaries. Table 9 shows the statistics for all fifty states and for the United States as a whole.

Examine the top row of Table 9, which shows the United States as a whole. In 2000–01, per-pupil spending was \$8,157 on average. A reduction in class size requires a proportional increase in the number of teachers and a proportional increase in school building size that is one-for-one with the proportional reduction in class size. For instance, 10 percent more teachers and 10 percent more classrooms are needed if class size is to be reduced by 10 percent. A 10 percent reduction in class size translates in two fewer students per class in most of America, so a 10 percent reduction is not negligible, yet it is unlikely to change the nature of teaching. (Reducing class size to, say, ten students per class would be more likely to change the nature of teaching, but it would also represent a 50 percent reduction in class size—five times more costly than the policy shown in Table 9!) Given that teacher compensation represents 54 percent of the average American school's cost and that items proportional to the size of school buildings (building, heating, etc.) represent another 22 percent of the average American school's cost, a 10 percent reduction in class size costs about \$615 per student in

TABLE 9  
 Putting Accountability Costs in Perspective:  
 School Spending in the United States

<i>State</i>	<i>Per-Pupil Spending* (2000-2001)</i>	<i>% of Spending that Is Teacher Compensation</i>	<i>% of Spending that Is Proportional to School Building Size</i>	<i>Approximate Per-Pupil Cost of Reducing Class Size by 10%</i>	<i>Approximate Per-Pupil Cost of Raising Teacher Compensation by 10%</i>
United States	\$8,157	54	22	\$615	\$437
Alabama	6,921	53	20	509	370
Alaska	10,098	52	22	740	521
Arizona	6,531	45	31	495	295
Arkansas	5,927	58	18	448	341
California	7,466	54	21	557	400
Colorado	6,775	48	25	496	325
Connecticut	11,209	57	18	844	644
Delaware	9,725	57	17	719	552
District of Columbia	11,540	40	23	721	458

Florida	\$7,913	50	25	\$589	\$394
Georgia	8,219	54	20	610	443
Hawaii	7,424	56	20	567	416
Idaho	7,003	53	23	532	372
Illinois	7,938	51	25	600	405
Indiana	8,622	52	26	671	447
Iowa	7,581	55	19	555	414
Kansas	7,749	52	19	553	404
Kentucky	7,280	57	15	524	418
Louisiana	6,672	54	17	477	363
Maine	8,884	62	16	697	554
Maryland	8,938	56	19	670	504
Massachusetts	9,998	64	13	765	639
Michigan	9,236	50	24	684	458
Minnesota	8,478	52	24	645	443
Mississippi	5,639	52	23	422	295
Missouri	7,489	54	21	559	403
Montana	7,250	57	19	546	411
Nebraska	8,393	56	19	629	467

*continued on next page*

TABLE 9 (continued)

State	Per-Pupil Spending* (2000-01)	% of Spending that is Teacher Compensation	% of Spending that is Proportional to School Building Size	Approximate	
				Per-Pupil Cost of Reducing Class Size by 10%	Per-Pupil Cost of Raising Teacher Compensation by 10%
Nevada	\$6,829	47	30	\$524	\$319
New Hampshire	7,949	59	17	605	471
New Jersey	12,199	55	19	896	669
New Mexico	7,084	49	24	512	344
New York	10,950	60	20	874	653
North Carolina	7,073	52	24	536	369
North Dakota	7,746	55	18	564	429
Ohio	8,621	53	19	619	455
Oklahoma	6,381	54	19	464	344
Oregon	7,774	53	20	570	411
Pennsylvania	9,549	54	24	741	517
Rhode Island	9,299	65	11	707	602
South Carolina	7,622	49	24	563	377

South Dakota	\$7,042	52	24	\$536	\$364
Tennessee	6,217	57	20	481	357
Texas	7,057	51	26	545	359
Utah	5,654	54	26	451	306
Vermont	9,769	59	17	737	574
Virginia	8,109	53	21	604	433
Washington	7,882	49	25	583	384
West Virginia	7,892	56	19	590	442
Wisconsin	9,266	54	23	709	498
Wyoming	8,710	52	24	666	454

\* Total public school spending divided by total public school membership, 2000–01 United States Department of Education estimates.

the United States. Put another way, a modest reduction in class size costs 7,053 percent more than an accountability system like Arizona's and 12,399 percent more than the current average cost of assessment (see Table 1). Given that a modest class size reduction is about three *orders of magnitude* more expensive than an accountability system, the claim that significant crowd-out occurs is simply unfactual. If a state were in the midst of reducing class size, implementing an accountability system like Arizona's (without increasing the budget) would turn a 10 percent class size reduction to a 9.9 percent class size reduction. No one would notice the difference between these two class size reduction policies! The lower rows of Table 9 show the cost of reducing class size by 10 percent for all fifty states. The amount varies around the national average of \$615, from \$422 per student in Mississippi to \$896 per student in New Jersey.

Now consider a 10 percent increase in teacher compensation. Although teachers would undoubtedly be grateful for such a raise and view it as useful, such a raise would not dramatically change the skill level of people who enter and remain in teaching. Thus, a 10 percent increase in compensation could be described as significant but not transforming. Table 9 shows that it would cost the average American school \$437 per student to raise teachers' compensation by 10 percent. (The low is \$295 per student in Mississippi and the high is \$669 in New Jersey.) In other words, raising teacher salaries by 10 percent costs 5,011 percent more than an accountability system like Arizona's and 8,810 percent more than the current average cost of assessment (see Table 1). Again, a claim of crowd-out bears little relationship to the facts. If a state were in the midst of raising teacher compensation, implementing an accountability system like Arizona's (without increasing the budget) would turn a 10 percent raise for teachers into a 9.8 percent raise. If a 9.8 percent raise were not going to change teachers, a 10 percent raise would not do so, either!

Table 10, the final table in this chapter, puts accountability costs into perspective using per-pupil spending. The table shows the *actual* share of per-pupil spending that is devoted to various states' accountability systems. It also shows the *actual* share for the United States as a whole. The nation spends 0.06 percent (six-hundredths of 1 percent) of funds for elementary and secondary public schools on assessment. Although the states on the table include those with elaborate accountability programs, no state spends *even 1 percent* of its elementary and secondary school budget on accountability. The top spenders' actual spending is about one-third of 1 percent of their public school budgets. In short, assessment accounts for a tiny, almost negligible portion of American school costs at present. People who oppose accountability based on its great cost ought to examine publicly available budget statements.

#### VI. OUGHT ACCOUNTABILITY SYSTEMS BE MORE EXPENSIVE, PREVENTING CHEATING?

One of the most frequent complaints about accountability systems is that schools "teach to the test." This criticism generally confuses two complaints, one of which is legitimate and the other of which is wrong-headed. The wrong-headed complaint is that schools "teach *toward* the test." A school that teaches *toward* a test modifies its curriculum in order to present material that will help students answer the types of questions that appear on the assessment tests. This complaint is misguided because the *intention* of assessment is to induce schools to alter their practices (if necessary) so that their students acquire the knowledge the state thinks they ought to know. Though we may worry that states make imperfect decisions about what students ought to know, such worries are best addressed by improving the assessment instruments, not by relieving schools of the responsibility to demonstrate that they generate knowledge.

TABLE 10  
 Putting Accountability Costs in Perspective:  
 Accountability Costs as a Share of Public School Spending

<i>State</i>	<i>Cost of Assessment Per Pupil*</i>	<i>Per-Pupil Spending (2000–2001)</i>	<i>Cost of Assessment as a Percentage of Per-Pupil Spending</i>
United States	\$4.96	\$8,157	0.06
Arizona	8.72	6,531	0.01
California	19.93	7,466	0.27
Colorado	16.24	6,775	0.24
Connecticut	16.20	11,209	0.14
Delaware	34.02	9,725	0.35
Georgia	4.74	8,219	0.06
Idaho	16.32	7,003	0.23
Indiana	24.32	8,622	0.28
Kentucky	18.00	7,280	0.25
Maryland	24.26	8,938	0.27
Massachusetts	20.47	9,998	0.20
Michigan	6.64	9,236	0.07
Minnesota	13.23	8,478	0.16
Missouri	15.37	7,489	0.21
New Hampshire	10.16	7,949	0.13
New Jersey	12.94	12,199	0.11
New York	4.72	10,950	0.04
Ohio	8.61	8,621	0.10
Pennsylvania	8.27	9,549	0.09
South Carolina	1.79	7,622	0.02
Texas	20.30	7,057	0.29
Virginia	17.13	8,109	0.21
Washington	14.84	7,882	0.19
West Virginia	12.67	7,892	0.16
Wisconsin	5.97	9,266	0.06

\* Cost of assessment per pupil are from Table 2.

The legitimate complaint is that schools may “teach *the test*”—that is, give students specific answers to specific questions that appear on the test. Schools may do this through outright cheating (writing answers on the board, filling in students’ answer sheets for them, looking at the actual test ahead of time and making students memorize sequences of answers). Schools may also do this by giving teachers access to the tests before and after the actual administration of the test so that teachers incorporate actual questions and answers from the test into their course materials. Using such methods, a school could improve scores without its students acquiring the base of knowledge for which the test questions were written.

Fortunately, it turns out that a bit of money can solve the legitimate concern about *teaching the test*. Elementary and secondary schools could use outside proctors to deliver the tests just before test time, administer and proctor the tests, and collect the tests and return them to the test-maker (who scores them). With proctors, teachers would not be in contact with the tests at all and would have to rely on the state’s curricular guidance to align their students’ knowledge with the tests (this is exactly what the state wants them to do). Outside proctors would cost between \$1 and \$4 per student, depending on the number of grades and subjects that a state decides to test. The maximum predicted cost of \$4 per student is a bit under 0.05 percent (five-hundredths of 1 percent) of American per-pupil spending. We could go beyond proctors and insist that tests be based on larger batteries of questions (so that even students’ recollections could not be used to predict the questions on next year’s test). Test-makers typically raise the cost of a test by about 10 percent if they are asked to supply fresh questions each year. Freshness in and of itself does not cost much because test-makers can easily write numerous versions of a specific type of question. Greater freshness is not the same as test *development*, in which a type of question is written and validated “from scratch.” In short, given that the average

amount spent on tests now is \$4.96 per student, fresh tests would cost about \$5.46 per student if schools were generally to ask for them (still about six-tenths of 1 percent of American school spending). However, with good proctors, fresh test questions are not as necessary.

## VII. FINAL THOUGHTS ON THE COST OF ACCOUNTABILITY SYSTEMS

Every statistic contained in this chapter is taken from sources that are publicly, readily available. Thus, people who oppose accountability based on its costs have probably neglected to do their homework and collect the facts. Assessment systems are very inexpensive by any metric, even when we consider elaborate and still-in-development systems such as California's.

What conclusions ought we to draw from the fact that accountability systems are so inexpensive? First, given the systems' low costs, we ought not to hesitate to improve them (by adding proctors, developing better tests, and so on) if the improvements would generate better incentives for schools. The cost of such improvements can come from other programs that will be only negligibly affected because they are so much more expensive. Second, accountability is so cheap, compared to other programs that are popular and under debate (such as class size reduction), that assessment should be given the benefit of the doubt. Even if the benefits of accountability are small, its benefit-to-cost ratio is likely to be extremely high relative to that of other programs. Thus, even when a state's budget prevents it from pursuing many of the programs that parents and policymakers would like to see enacted, the state should still try putting some assessment in place. Having assessment in place will also make it easier to evaluate the effects of other reforms. Finally, it is well known that the federal government accounts for only a small share (between 6 and 7 percent, depending on the year) of the revenue of American elementary and secondary schools. It is

often difficult for the federal government to find programs that are both potentially important and affordable within its small education budget. The federal government could very plausibly pay for a basic level of assessment in every state, thereby encouraging all states to craft accountability systems that suit them but still meet minimal guidelines (for instance: testing at least reading and mathematics; testing at least one elementary, one middle, and one high school grade; using a national test in some grade to facilitate comparisons among states).

The costs of accountability are such that the main barrier to good programs is not expense but the support and interest of education experts, policymakers, and the public. Given the popularity of accountability with the public, educators and policymakers are the key people who will enable or disable a state attempting to implement a useful accountability system.