Upper Elementary Grades Bear the Brunt of Accountability

Educators claim that accountability forces them to narrow the curriculum. But a comparison of teachers' schedules before and after NCLB shows that little has changed.

By Lorin W. Anderson

Upper elementary teachers won't be surprised to learn that in every state, students enrolled in grades 3 through 8 bear the brunt of educational accountability. All states test all students at these grade levels in English/language arts and mathematics (Toye et al. 2006). Furthermore, an increasing number of states are testing students at selected elementary and middle school grade levels in science and, to a lesser extent, in social studies. Although all states test high school students, testing is done less uniformly; states vary on the grades and subjects tested. Finally, only six states test students at grade levels lower than grade 3 (California, Delaware, Georgia, Idaho, Iowa, Mississippi) (Toye et al. 2006). Although the burden of educational accountability in the United States rests with children ages 8 through 12, not much research has evaluated the impact of educational accountability on schools, teachers, and students.

Teachers provide the bulk of the evidence of the impact of accountability on teaching. Not surprisingly, teachers report that accountability has adversely affected how they teach, impacting curriculum, quality of instruction, and instructional time.

CURRICULUM EFFECTS

Teachers report that the major effect of educational accountability on the curriculum has been "narrowing" the curriculum. Hutton, Curtis, and Burstein, for example, conclude that the emphasis on high-stakes testing "is impacting how the core subjects are being taught, with the social studies curriculum being relegated to the background and only taught when there is time" (2006, p. 18). Similarly, M. Gail Jones and her colleagues (1999) state that, as a result of the ABC pro-

■ *LORIN W. ANDERSON is a distinguished professor emeritus at the University of South Carolina, Columbia, South Carolina. He is the senior editor of and contributor to* A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives *(Longman, 2001).*

Photo: EyeWire Images

TABLE 1.
A Comparison of Instructional Time Before and After Accountability

Category	Before Accountability[1]	After Accountability[2]
English/Language Arts	37.0%	33.3% (34.0%)
Mathematics	17.0%	16.2% (16.5%)
Related Arts[3]	13.0%	10.7% (13.1%)
Science	5.0%	5.5% (8.1%)
Social Studies	5.0%	5.7% (5.0%)
Planned Noninstructional	23.0%	28.6% (21.2%)

1. Burns 1984
2. Jones et al. (1999) and three geographically distinct teachers' schedules posted on the Internet
3. Related arts include arts, music, and physical education

gram in North Carolina, the teachers they interviewed spent most of the school day preparing students in the basics, that is, reading, writing, and arithmetic.

It's true that different subjects in the elementary school receive different emphasis in terms of allocated time. But it's not true that educational accountability legislation has caused this.

Table 1 compares time allocations for various subjects "before accountability" (i.e., late 1970s and early 1980s) and "after accountability" (late 1990s to the present). There are two entries in the "after accountability" column. The first entry is taken from the Jones et al. (1999) study mentioned above. The second entry is derived by calculating the median from three schedules posted by teachers on the Internet. The selected teachers taught in schools in different geographic sections of the United States.

As can be seen in Table 1, the numbers in the two columns are remarkably similar. About one-quarter of the day is planned noninstructional time (primarily lunch and recess). Slightly more than one-third of the day is spent on English/language arts. The proportion of time spent teaching mathematics has held steady at about one-sixth of the school day. Very little time is (and was) spent teaching science and social studies. A more detailed examination of the three teachers' schedules indicates that neither of these two subjects is taught every day; rather, science may be taught on Monday, Wednesday, and Friday, while social studies may be taught on Tuesday and Thursday.

In summary, the curriculum has not narrowed as a result of accountability. English/language arts have long reigned supreme in elementary school classrooms, while science and social studies have struggled for a very small piece of the curriculum pie.

INSTRUCTIONAL QUALITY EFFECTS

Teachers have reported that accountability has forced them to act in ways they don't believe is professional, often resulting in teaching students in ways they don't consider conducive to student success (Abrams, Pedulla, and Madaus 2003; Mathison and Freeman 2003). According to teachers, accountability has affected both what they teach about the core subjects and how they teach them.

In terms of what they teach, teachers reported that accountability has led them to emphasize specific information that will be tested and to neglect material involving higher-order thinking and problem solving (Jones et al. 1999; Hoffman, Assaf, and Paris 2001). Mitchell (2006) has argued that teachers emphasize memorization of facts because facts are easily recalled for multiple-choice testing.

In terms of how they teach, McNeil (2000) described teachers who reported moving from individualized child-centered teaching to generic teacher-centered teaching because the latter more clearly reflected the state-mandated curriculum and assessments. Similarly, though most teachers (79%) said teaching critical thinking skills was important in social studies, their teaching consisted almost entirely of lecturing, reading, and completing worksheets (Hutton, Curtis, and Burstein 2006).

It is true that elementary school teachers rely on "generic teacher-centered practices" and emphasize memorization, rather than using more child-centered

strategies to teach higher-order thinking, critical thinking, and problem solving. But it's not true that accountability is the cause.

In a recent study of more than 2,500 1st-, 3rd-, and 5th-grade U.S. classrooms, Robert Pianta and his colleagues (2007) found that whole-class, teacher-directed instruction coupled with individual student seatwork constituted almost 90% of instructional time. Small-group instruction occurred less than 10% of the time. These data would seem to support the teachers' claim that they are using generic teacher-centered practices.

Teacher-led, whole class instruction focusing on lower-level objectives has characterized elementary school classrooms for at least a half century.

But, if data are compared with data collected during the 1970s and 1980s, we see, once again, that little has changed. Summarizing three major observational studies of the teaching of 5th-grade English/language arts, mathematics, and social studies, Burns (1984) found that whole-class, teacher-directed instruction coupled with individual student seatwork accounted for slightly more than 85% of instructional time. The remaining 15% was spent on audiovisual presentations, games and contests, and tests. If audiovisual presentations are included as a whole-class activity and tests are included as individual seatwork, the percent of time spent in whole-class instruction plus individual seatwork increases to almost 90%, the same figure reported by Pianta and his colleagues more than two decades later.

With respect to the claim that accountability has increased teachers' emphasis on memorization, let's begin with a study done almost a century ago. Stevens (1912) found that most questions asked by teachers emphasized memory and "smothered" pupil's expression. A review of studies on teaching practice conducted in the three decades before accountability yielded the following results. First, fewer than one-third of teachers' questions required students to think, rather than recall previously taught information (Burns 1984). Second, somewhere between 75% and 95% of the assignments given to students in English/language arts, mathematics, and social studies were aligned with the two lowest levels of Bloom's Taxonomy (that is, knowledge and comprehension) (Burns 1984). Third, more than 80% of 9,000 test items written by classroom teachers that were reviewed by Fleming and Chambers (1983) were classified at the knowledge level of Bloom's Taxonomy.

The evidence is quite clear that teacher-led, whole-class instruction focusing on students' mastery of lower-level objectives has characterized elementary school classrooms for at least a half century. As was true of the previous teachers' claim, there is no evidence that accountability has had a negative effect on the way that teachers teach in elementary school classrooms.

INSTRUCTIONAL TIME

Teachers have reported that, because of pressure to raise test scores, they devote fairly large amounts of classroom time to test-preparation activities (Abrams, Pedulla, and Madaus 2003; Smith 1991), with the result that instructional time decreases by 10% to 15% each year. Shepard and Dougherty (1991) found that one-half of the teachers in their study reported spending four or more weeks per year on test preparation activities. The teachers in Smith and her colleague's (1990) study reported spending three to four weeks, on average, on test preparation.

There is no evidence to contradict the claim that teachers spend, on average, from three to five weeks on test preparation. But, only 26% of the teachers surveyed by Syat and her colleagues (2003) said they spent so much time on test preparation that learning was neglected. Furthermore, almost three-fourths of the teachers said that their teaching wasn't distorted by testing pressures.

There is no evidence that the amount of time spent in test preparation has a positive effect on student learning, achievement, or test performance. On the other hand, it's quite clear that teaching a curriculum aligned with state standards and using test data as feedback do have positive effects on test performance (Mitchell 2006). Rather than spend excessive time on test preparation, therefore, teachers would be wise to increase curriculum alignment and use test data to make curricular and instructional decisions (a conclusion consistent with Stiggins' article in this issue).

MOVING FROM PANIC TO PRODUCTIVITY

The analysis here should not be comforting to either teachers who blame accountability for their approach to teaching or policy makers who believe accountability will lead to better teaching. Accountability has become a scapegoat that allows teachers to continue to teach as they always have, rather than to teach in ways that elementary students need to be taught if they're to learn well and be academically successful in

the long term. Over the past quarter century, based in part on research and in part on writings of thoughtful educators, much has been learned about how best to teach elementary school students. A consensus on principles of excellent teaching at this level has emerged across the four core subjects.

ACTIVE ENGAGEMENT IN LEARNING

Learning depends on the active engagement of the learner. It is what the learner does that is learned, not what the teacher does. As the National Council of Teachers of English has asserted, "Children learn language best when they are intellectually engaged" (1993, p. 4). Effective strategies for promoting active engagement in learning have been identified in all four core subjects.

- In English/language arts, students are more engaged when teachers pay attention to and accommodate students' interests, needs, and concerns (Allington and Johnson 2001).
- In mathematics, students are more engaged when they're working on challenging problems (Vernille 2002).
- In science, students are more engaged when they're able to acquire scientific knowledge through inquiry (Peck 2000).
- In social studies, students are more engaged when they're grappling with human issues (NCSS 1988).

In contrast, teacher-led, whole-class instruction with an emphasis on memorization is unlikely to promote high levels of active engagement. "Student apathy for a subject considered lifeless and useless is understandable in classrooms where. . . forced marches through textbooks are frequent and where the assumption prevails that memorization of names, places, and dates will somehow translate itself during adulthood into civic involvement" (NCSS 1988).

AN EMPHASIS ON MEANINGFUL LEARNING

Elementary school students want things to "make sense." They want to understand what they're being taught. The frequently heard utterance of a 4th or 5th grader in mathematics, "I don't get it," doesn't mean he or she can't remember it. It means he or she doesn't understand. It doesn't make sense. Strategies for helping elementary students make sense of core subjects have been identified. For example:

- Students are more likely to make sense of language when teachers spend more time coaching rather than direct teaching (Allington and Johnston 2001).
- Students are more likely to make sense of mathematics when they're solving real problems in collaboration with their peers (Ginsburg-Block 1999).
- Students are more likely to make sense of science when instruction builds directly on students' conceptual frameworks, that is, the ways in which students currently understand the natural world (NSTA 2002).
- Students are more likely to make sense of history when instruction incorporates the sounds and images of videotapes, streaming video, and films and includes required oral history projects (Hoge 1988).

The importance of meaningful learning for elementary school students is, in fact, inherent in most of the states' content standards. In South Carolina, for example, the content standards in all four core subjects have been revised since 2005, based on the revised Bloom's Taxonomy (Anderson et al. 2001). Across all four core subjects, about two-thirds of the standards include one of seven verbs associated with Understanding. *Recall* and *recognize* – the two verbs associated with the lowest category — appear in fewer than 10% of the standards. In light of this emphasis on understanding, the argument that the reason that teachers emphasize memorization of facts in their teaching is that these facts are easily recalled for multiple-choice testing (Mitchell 2006) holds no water.

TEACHING-AS-CONVERSATION

The evidence has begun to accumulate that teaching-as-conversation is superior to teaching-as-lectures or demonstrations. Simply stated, conversations are dialogues, not monologues. Dialogues are more engaging and enable students to develop understanding, as well as to check their understanding. These conversations may occur between teachers and students, individually or collectively, or among students themselves. The importance of teaching-as-conversation has been recognized by educators in all four core subjects.

- In English/language arts, students learned more when they had opportunities to discuss what they read (Knapp 1999).
- In mathematics, students learned more when engaged in reciprocal peer problem solving (with pairs of students taking turns as teachers and

learners) (Ginsburg-Block 1999).
- In science, students learned more when they were asked to talk about their ideas, questions, or explanations (Campos and Barton 2004).
- In social studies, students learned more when teachers incorporated stories into their teaching of history (Hoge 1988).

As Sheila McNamee has pointed out, "The metaphor of 'teaching as conversation' is useful because. . . it shifts teaching and learning from a focus on a method for conveying knowledge to a process that is attentive to the ways in which participants create meaning together" (2006, p. 31).

SLOW DOWN, CHILDREN LEARNING

Learning takes time. Trying to teach too much in too little time at too rapid a pace is likely to be frustrating for teachers and students alike. The importance of a slower, more relaxed pace has been recognized by experts in all four core areas.

- Children learn language best when they take control of and reflect on their learning (NCTE 1993). They need time to reflect.
- Students learn mathematics best when there is more time for lengthy verbal explanations of solution strategies for problems (Vernille 2002).
- In science, students learn best when they have time to investigate and test their ideas in their own ways (Peck 2000). After all, hypothesis testing is a critical component of science.
- In social studies, students learn best when they're able to visit historical sites and study primary sources. As Hoge has pointed out, "When students are properly prepared for such experiences, the depth of understanding they build more than justifies the extra effort they entail" (1988, p. 3).

Many teachers believe that if they don't cover every content standard, students will not do well on the high-stakes tests. For those who believe this, it may be instructive to consider Allington and Johnston's (2001) comment on the exemplary teachers they studied. They learned that exemplary teachers produced superior educational gains on standardized tests. They did not identify these exemplary teachers because of student test scores. Rather, they asked people to nominate teachers in whose classrooms they would place their own children. High praise indeed!

Accountability will not cause teachers to improve their teaching. In fact, it might have exactly the opposite effect. At the same time, however, accountability does not prohibit teachers from changing their teaching to reflect what is known about how best to teach elementary school students. Teachers must stop hiding behind the specter of accountability and take responsibility for doing what's best for their students. Betsy Rogers, the 2003 National Teacher of the Year, put it this way: "I believe we have a moral imperative to our profession to [ensure] the quality of teaching. . . . It is time for teachers to take charge of our own profession and set standards of excellence for all teachers to [ensure] that all children, no matter where they live, have a quality teacher in the classroom" (2008, p. 1).

Trying to teach too much in too little time at too rapid a pace is likely to be frustrating for teachers and students alike.

REFERENCES

Abrams, Lisa M., Joseph J. Pedulla, and George F. Madaus. "Views from the Classroom: Teacher's Opinions of Statewide Testing Programs." *Theory into Practice* 42, no. 1 (2003): 18-29.

Allington, Richard L., and Peter H. Johnston. "What Do We Know About Effective 4th-Grade Teachers and Their Classrooms?" In *Learning to Teach Reading: Setting the Research Agenda*, ed. Cathy M. Roller. Newark, Del.: International Reading Association, 2001.

Anderson, Lorin W., et al., eds. *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman, 2001.

Burns, Robert. "How Time Is Used in Elementary Schools: The Activity Structure of Classrooms." In *Time and School Learning*, ed. Lorin W. Anderson. Oxford, England: Croom Helm, 1984.

Campos, Jaclyn, and Angela C. Barton. *Talk in an Urban Elementary Science Classroom: Exploring the Different Perspectives*. New York: Urban Science Education Center, Teachers College, 2004.

Fleming, Margaret, and Barbara Chambers. "Teacher-Made Tests: Windows on the Classroom." In *Testing in the Schools*, ed. Walter E. Hathaway. San Francisco: Jossey-Bass, 1983.

Ginsburg-Block, Marika. "Standards-Based Interventions in Elementary Mathematics." *CAREI Research/Practice Newsletter* (Fall 1999). http://cehd.umn.edu/CAREI/Reports/Rpractice/Fall99/elem-math.html.

Hoffman, James V., Lori C. Assaf, and Scott G. Paris. "High-Stakes Testing in Reading: Today in Texas, Tomorrow?" *Reading Teacher* 54 (February 2001): 482-492.

Hoge, John D. "Teaching History in the Elementary School." *ERIC Digest* (1988). ERIC # ED293784.

Hutton, Lisa A., Reagan Curtis, and Joyce H. Burstein, "The State of Elementary Social Studies Teaching in One Urban District." *Journal of Social Studies Research* 30 (Spring 2006): 15-20.

Jones, M. Gail, Brett D. Jones, Belinda Hardin, Lisa Chapman, Tracie Yarbrough, and Marcia Davis. "The Impact of High-Stakes Testing on Teachers and Students in North Carolina." *Phi Delta Kappan* 81 (November 1999): 199-203.

Knapp, Michael S. *Teaching for Meaning in High-Poverty Classrooms*. New York: Teachers College Press, 1999.

McNamee, Sheila. "Relational Practices in Education: Teaching as Conversation." In *Collaborative Therapy: Relationships and Conversations that Make a Difference*, ed. Harlene Anderson and Diane R. Gehart. New York: Routledge, 2006.

McNeil, Linda M. *Contradictions of School Reform: Educational Costs of Standardized Testing*. New York: Routledge, 2000.

Mathison, Sandra, and Melissa Freeman. "Constraining Elementary Teachers' Work: Dilemmas and Paradoxes Created by State Mandated Testing." *Educational Policy Analysis Archives* 11, no. 34 (2003). http://epaa.asu.edu/epaa/v11n34.

Mitchell, Ruth. "Research Review: Effects of High-Stakes Testing on Instruction." Alexandria, Va.: Center for Public Instruction, National School Boards Association, 2006.

National Council for the Social Studies (NCSS). *Social Studies for Early Childhood and Elementary School Children Preparing for the 21st Century*. Silver Spring, Md.: National Council for the Social Studies, 1988.

National Council of Teachers of English (NCTE). *Elementary School Practices*. Urbana, Ill.: National Council of Teachers of English, 1993.

National Science Teachers Association (NSTA). *NSTA Position Statement: Elementary School Science*. Arlington, Va.: National Science Teachers Association, 2002.

Peck, Donald. "The Elementary Classroom: Grades 3-6, Science, Children, and Learning." Houghton Mifflin Harcourt Education Place, 2000. www.eduplace.com/science/profdev/articles/peck.html.

Pianta Robert C., Jay Belsky, Renate Houts, and Fred Morrison. "Opportunities to Learn in America's Elementary Classrooms." *Science* 315 (March 2007): 1795-1796.

Rogers, Betsy. "Teaching Quality Is a Moral Imperative." *Brighton's Hope* (November 2008). http://tln.typepad.com/tln_betsyrogers/2005/11/teaching_qualit.html.

Shepard, Lorrie A., and Katharine C. Dougherty. "Effects of High-Stakes Testing on Instruction." Paper presented at the annual meetings of the American Educational Research Association, Chicago, April 3-7, 1991, and the National Council on Measurement in Education, Chicago, April 4-6, 1991.

Smith, Mary Lee. "Put to the Test: The Effects of External Testing on Teachers." *Educational Researcher* 20 (June/July 1991): 8-11.

Smith, Mary Lee, Carole Edelsky, Kelly Draper, Claire Rottenberg, and Meredith Cherland. *The Role of Testing in Elementary Schools*. Los Angeles, Calif.: Center for Research on Evaluation, Standards, and Student Testing, University of California, Los Angeles, 1990.

Stevens, Romiett. "The Question as a Measure of Efficiency in Instruction: A Critical Study of Classroom Practice." *Teachers College Contributions to Education*, vol. 48. New York: Teachers College Press, 1912.

Syat, Beth, Jackie Vine, Ann Duffett, and Jean Johnson. *Attitudes About Teaching: Including the Views of Parents, Administrators, Teachers and the General Public*. New York: Public Agenda Foundation, 2003

Toye, Carla, Rolf K. Blank, Nancy Sanders, and Andra Williams. *Key State Education Policies on PK-12 Education: 2006*. Washington, D.C.: Council of Chief State School Officers, 2006.

Vernille, Kristy. "Why Are U.S. Mathematics Students Falling Behind Their International Peers?" Manuscript, University of Maryland, 2002. www.math.umd.edu/~dac/650/vernillepaper.html.