

COMMENTARY

Teaching to the Accountability Policy

AUTHOR

Eugene Judson | Arizona State University

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There's an old adage that states "what gets tested, gets taught." However, my research has shown that adage probably needs to be revised to "what gets tested, *and included in school accountability calculations* gets taught." It's not as succinct, but it is more accurate.

Specifically, even though there has been a tremendous national fervor to promote science education, science has taken a backseat to reading and math during the No Child Left Behind (NCLB) years. While reading and math were required to be included in school accountability calculations, science has been optional . . . and it is an option that was rarely chosen.

In a series of studies, I examined how well states did on the National Assessment of Education Progress (NAEP) assessments in reading, math, and science both before NCLB and several years later. NAEP assesses students in grade four and eight, so that's where my focus laid. I grouped the states based on whether or not they included science achievement from those two grades in their school accountability formulas, as well as the degree to which they included science. I initially examined achievement results and found that when states integrated science into their accountability formulas that they not only did better on the fourth-grade NAEP science achievement results, but that they also lost no ground in reading or math. Those results were not mirrored in eighth-grade where I found no connection between science achievement and the integration of science achievement scores into accountability formulas. My best guess as to why there was a difference in fourth-grade and not eighth-grade is that typically eighth-grade classrooms are in junior high school or middle school settings where there is a dedicated science teacher and a specific amount of time allocated for science. However, fourth-grade classrooms most often look quite different and commonly the onus is on just one teacher to juggle reading, social studies, math, science, art, recess, and everything else. With the high stakes pressure placed most often squarely on just reading and math results, schools may too often deemphasize subjects that don't "count."

In a follow-up study, I examined the responses from fourth-grade teachers across the country to determine if they were actually allocating more time for science. Only five states (KY, NY, SC, TN, UT) had consistently integrated science achievement scores from fourth-grade into their accountability calculations and, as predicted, it was discovered that teachers in those states reported spending more class time on science. Interestingly, there was no difference among the groups of states regarding how much time they were spending on reading and math. In summary, this research has revealed that policies that required science to be tested, but not counted, did not go far enough. In those states where science was counted as part of the accountability formula in fourth-grade, students did better in science, spent more time on science, and lost no ground in math or reading.

These findings have particular implications for California. While California does use science achievement to calculate a school's Academic Performance Index (API), those results only come from the California Standards Tests (CST) in grades five, eight, and ten and end-of-course tests in grades nine through eleven. My research demonstrates the importance of putting science alongside of reading and math, particularly in the early grades. At this point in California, fifth-grade is the only elementary grade where science is being tested and *counted*.

Currently there is again tremendous discussion about reauthorization of the [Elementary and Secondary Education Act](#) (ESEA). Again, science is not necessarily on equal footing with math and reading. For example, although the recent Student Success Act bill was recently revised to reinstate science testing, it leaves it to the states to choose whether or not to include those results in accountability formulas. While required testing and accountability policies can absolutely have some negative implications, the fact is that we have long been in an environment of school accountability and it is not about to disappear. We are also part of a global environment where [STEM](#) learning is critical. Putting science on par consistently with reading and math is just a sensible approach that addresses our current spotty attention to science.

The [most recent study](#) (gated) is in Judson, E. (2013). The relationship between time allocated for science in elementary schools and state accountability policies. *Science Education Policy*, 9(4), 621-636. DOI: 10.1002/sce.21058.

The [earlier study](#) (ungated) is in Judson, E. (2012). When Science Counts as Much as Reading and Mathematics: An Examination of Differing State Accountability Policies. *Education Policy Analysis Archives*, 20 (26).

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Stanford Graduate School of Education

520 Galvez Mall, Suite 444

Stanford, CA 94305

Phone: 650.576.8484

edpolicyinca.org

