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## **Viewpoint: Smarter than a fifth-grader? A perspective on education**

**Steve Klierer**

Recently, I had the privilege of judging an elementary school science fair. A team of students tested a group of fifth grade students and a group of adults to compare their scores. The questions asked were from a fifth grade science test based on the California Science Content Standards. Most of the adults did poorly on the test.

Yet these were intelligent, well-educated, successful adults. Have they become ignorant? Or is it that the knowledge being tested is irrelevant in adult lives? Perhaps what they learned and what has been useful to them is not reflected in these tests.

An editorial by the San Jose Mercury News that The Tribune reprinted (“The case for common-core education standards,” June 9) correctly notes that under President George Bush’s No Child Left Behind Act, schools across the nation are being judged with a single adequate yearly progress index based on radically different standards in each state.

The California Science Content Standards are replete with items such as:

- Students know how to resolve two-dimensional vectors into their components and calculate the magnitude and direction of a vector from its components.
- Students know the role of the endoplasmic reticulum and Golgi apparatus in the secretion of proteins.

The California Standards sound more like a shopping list for possible test questions than a list of essential skills needed for a productive and creative life, let alone for a successful career in a global economy.

The National Science Education Standards would be an improvement to California’s “shopping list” style. National standards emphasize skills such as identifying, proposing, implementing, evaluating and communicating, as opposed to the repetitive “know” of the California Standards.

The No Child Left Behind Act mandates standards-based education reform. Schools are tested and judged using tests derived from standards such as those cited above. Schools whose students do not achieve “proficiency” on these tests are penalized monetarily and structurally.

Students experience grueling days and weeks of testing, requiring effort and motivation. Yet the tests evaluate the schools and not the students taking the test. We are measuring the wrong criterion (i.e., knowledge instead of ability) and we are doing so in a fundamentally flawed manner.

The adequate yearly progress index for each school is based on standardized test scores (percent proficient). The fact that students who do not take the test (parents excused them or they were absent or not currently enrolled in a science or math class) significantly affects the school’s adequate yearly progress.

Each year, schools are deemed to be failing if they do not meet federal standards and are entered into Program Improvement Status (failure). The No Child Left Behind Act gives them a few years to meet the rapidly escalating targets before they are taken over and restructured.

Currently, California has 2,800 schools in various degrees of failure. This year, 700 schools were added to the failing list, but only 79 managed to improve sufficiently to get out of that category. As Superintendent of Public Instruction Jack O’Connell noted, the adequate yearly progress (accountability) targets rise “steeply” each year with an expected 100 percent proficiency required by 2014. Unless there are changes in federal requirements mandating these annual increases, meeting them will become “increasingly difficult for schools and districts.” Dare we say, impossible?

The education of our youth is of critical importance and needs dramatic improvement. However, as long as we insist that we can test and punish our way to the complete mastery of all knowledge by all students, we will continue to slip educationally and economically. We must re-evaluate what it is that is important for our students to learn. It is more important to know how and where to find information and what to do with it than to memorize facts.

The Endeavour Institute offers a model that could significantly impact students and prepare them to be life-long learners. The institute is a nonprofit organization dedicated to implementing a new education paradigm within our schools. It has developed a STEM (science, technology, engineering and math) education methodology that augments an inquiry model with project-based, learn-by-doing simulations and real problem-solving opportunities.

The Endeavour program helps students choose a series of interesting and challenging projects that require the targeted skills and knowledge. The instructor guides them in their inquiries and provides “just-in-time” lessons at points when they want to know the information, can make the most sense of it and are most likely to remember it later.

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