

Our Schools vs. Theirs: Averages That Hide The True Extremes

By David Berliner

Not many weeks ago, the TIMSS-R data were released. That's edu-speak for the Third International Mathematics and Science Study-Repeat. The United States came out about average among the 38 competing nations whose eighth-graders took the tests, ranking only 19th in mathematics and 18th in science. In the United States, that is unacceptable. So the alarm -- "The sky is falling!" -- was sounded across our land, just as it was five years previously when the original TIMSS was reported.

Prestigious leaders of government and industry are once again claiming that American students can't compete in the new economy; once again, they are predicting economic ruin. Our new president believes these Jeremiahs and told us last week how he will save America's failing public schools. But President Bush apparently doesn't understand history or data.

For a history lesson, let us recall Adm. Hyman Rickover, developer of our nuclear navy, and former president Ronald Reagan. Public school failure was their theme, too, though they were not alone and were joined by many Democrats.

But just in case nobody noticed, Rickover's lazy and unfit students of the 1950s, students who supposedly couldn't read or think and were doomed to lose the arms race, now are in charge of most of the nation's important government agencies and corporations. Those 1950s dum-dums haven't done too badly in terms of national defense, economic productivity or positioning America for a bright future.

And Reagan's indictment of our schools as responsible for making us "A Nation at Risk" now seems laughable. Instead, we have built the world's strongest economy. American workers in manufacturing, service and agriculture attain the highest rates of productivity in the world. These achievements are the results of the creativity and work ethic of Reagan's hordes of mediocre school children, spawned by Rickover's inadequate parents! Enough. The sky is not falling on America.

Data from the TIMSS-R told us something easily predicted: Large governmental and corporate bureaucracies do not change rapidly. The original TIMSS informed us that American fourth- and eighth-graders scored at about the same level as those in 41 other nations, but well below some Asian nations in math and science. The repeat of TIMSS showed the same trend. Since the United States has 15,000 or more school districts, with 15,000 funding formulas, and 15,000 curriculum committees and school boards, it should have been obvious that change would not occur quickly. Because our nation's public schools are run by local authorities, it was wasted effort to repeat TIMSS so soon after the 1995 studies.

Furthermore, TIMSS-R confirms a point many of us have long believed: Not all our schools should change. Despite the doomsayers, some of our schools are doing fine. The U.S. average masks the scores of students from terrific public schools and hides the scores of students attending shamefully inadequate schools.

Let's take Illinois as an example. Along Lake Michigan, north of Chicago, are 20 public school districts serving predominantly wealthy suburban families. They gained permission to compete in TIMSS as a separate nation. Statistically, these public school students are on a par with the top scorers internationally in mathematics and science. Improving public schools where students are doing this well would be difficult. And this kind of spectacular performance is overlooked by those who claim that our schools are not working -- the result of looking only at average U.S. achievement.

Now let us focus on southern Illinois, where East St. Louis is located. For decades, this community has been served by dismal schools -- an embarrassment to a nation as rich as ours. Yet any good, random sample of U.S. schools for any international assessments includes both kinds of districts, those similar to East St. Louis and those that resemble the North Shore of Chicago. Put them together and you hide important distinctions between schools in different communities.

The same sorts of distinctions exist among the states, as well, when you separate out the statistics. In TIMSS, at the eighth-grade level among the 41 nations, 32 nations statistically outscored Louisiana in mathematics. Worse, 36 nations outscored the District of Columbia. But only six nations in the world beat Iowa and Nebraska in mathematics. In science, 26 nations outperformed Mississippi, and 37 nations beat the District. But only one nation, Singapore, scored above Colorado, Connecticut, Iowa, Maine, Massachusetts, Minnesota, Montana, Nebraska, North Dakota, Oregon, Utah, Vermont, Wisconsin and Wyoming.

So which America are we talking about? The District, or the 14 states that placed second in the world? The moral is clear: Average scores mislead completely in a country as heterogeneous as ours. We have many excellent public schools, and many that are not nearly as good. Those who want to undermine our public schools often condemn the whole system rather than face the inequities within it. They should focus their attention instead on rescuing the underfunded and ill-equipped schools that are failing children in our poorest neighborhoods.

Do we know where we have failing schools? You bet we do! The TIMSS-R tells us just what is happening. In science, for the items common to both the TIMSS and the TIMSS-R, the scores of white students in the United States were exceeded by only three other nations. But black American school children were beaten by every single nation, and Hispanic kids were beaten by all but two nations. A similar pattern was true of mathematics scores.

So, are American schools failing or is America failing to educate some of its children? It seems obvious that what needs to be addressed is the wide variation in the achievements of U.S. schools, districts and states. Public educational systems are denying quality education to some American citizens, and these are usually poor children, often minorities. Public schools still succeed amazingly well for children in neighborhoods where livable wages are earned, decent housing and health care are available, and crime and drug abuse are not everyday problems.

When the TIMSS-R data for science were released last month, the news media and public school critics missed something important. The highest-achieving nation in the world exceeds the United States -- even when we're looking at the average score across the nation -- by getting exactly four more items out of 48 right. This is not the kind of huge difference between nations that will make the sky fall on America!

In mathematics, we did not do as well: Students from Singapore, the leading nation, got an average of 40 of the 48 items right. Even though they scored above average, American students got only 30 items correct. But at least one reason for that is evident from the TIMSS-R report. In the United States, only 41 percent of math teachers hold math degrees. The average among other countries is 71 percent. Perhaps, instead of condemning public education on the basis of these average scores, unhappy citizens should advocate paying teachers enough money so we can attract mathematicians and scientists to public school classrooms.

It is unfortunate but true that the chances of getting a fully certified teacher in a given subject matter varies according to where you live. One large suburban district near me, in Phoenix, hires no teachers without full certification. But in Arizona's inner cities and rural areas, well over half of math and science teachers do not hold either a major or a minor in math or science, and large percentages of the teachers hold emergency certificates, which means they are not fully trained and receive temporary certification only in response to a shortage in teachers.

The true message of the TIMSS-R and other international assessments is that the United States will not improve in international standings until our terrible inequalities are fixed. The schools that serve our poorest children are not working well, but less criticism of those schools and more help for the neighborhoods and families they serve are in order. And without the financing to recruit and retain qualified teachers for all America's children, the most wonderful curriculums, designed to meet the highest standards, will fail. The new president's testing and accountability programs won't change these realities at all.

David Berliner is the Regents' Professor and dean of Arizona State University's college of education.