How do American schools compare internationally?

a jcea backgrounder

Dr. David Berliner, a professor of curriculum and instruction in the College of Education Arizona State University, has examined many of the charges made by critics of America's schools. Without making excuses, Dr. Berliner provides data which shows that the comparisons made between the academic performance of American students and those in other industrialized nations are often based on erroneous assumptions. Arm yourself with this information so that when one of these broad, unsubstantiated statements is made, you can show why the comparison is incorrect.

Charge: American schools are too expensive. We spend more on education than any other country in the world, and we have little to show for it.

Response: According to UNESCO data, the United States is tied with Canada and the Netherlands, and all three are behind Sweden in the amount spent per pupil for K-12 and higher education. The comparison is favorable to the United States because we spend much more than most nations on higher education, and we have two to three times more people (per 100,000 population) enrolled at that level than most other countries.

But we actually spend much less than the average industrialized nation at the pre-primary, primary and secondary education levels. We rank ninth among 16 industrialized nations in per-pupil expenditures at these levels spending 15% less than Germany, 30% less than Japan, and 51% less than Switzerland. In terms of the percent of per capita income spent on education, we rank 14th among 16 industrialized nations.

It would take an additional investment of $20 billion per year in K-12 education to come up to the average investment of the 15 other industrialized nations.

Charge: Our high schools, colleges, and universities are not supplying us with enough mathematicians and scientists to maintain our competitiveness in world markets.

Response: National Science Foundation data shows that the percentage of natural science and engineering bachelor's degrees awarded from the 1960s to the 1990s has remained remarkably steady. Moreover, while the actual numbers continue to be small, we have improved the percentages of minorities and women who now have access to technical jobs.

The data also shows that, contrary to accusations, when our students finish their baccalaureate, they know as much as they ever did as measured by the Graduate Record Examination (GRE), the test taken by most of those contemplating post-graduate education. In fact the 1980s saw college graduates in possession of higher mathematics skills than they ever had before. Scores for analytical and logical reasoning on the GRE have also increased significantly since 1982, even though a great many more students are now taking the test.

Not only is the supply of mathematicians and scientists holding steady, there is also solid data to suggest that the supply is exceeding demand! It has been estimated that even with no increases in the rate of supply of scientists and engineers, we will accumulate a surplus of about one million by the year 2010. Given the reduction in military spending likely over the next few year, the glut of trained scientists may be even higher than the forecasts that were made several years ago.

Two different contemporary surveys of the five most important and five least important skills needed by employers also raise doubts about the business community's call for more engineers and scientists. Those surveys tell us that employers worry most about the personal and motivational characteristics of workers. They depend on employees to show up on time, to get along with others, to care about doing well on the job, and so forth. They apparently do not find the technical ability of the work force to be a problem for them.

The claims of critics that there are economic benefits associated with better preparation in science, mathematics and language arts have also been debunked by a researcher who found that during the first eight years on the job workers without college educations receive no rewards from the labor market for their ability in science, mathematical reasoning or language arts. The tendency of many American high school students to avoid rigorous science courses and their poor performance on international science and mathematics tests may well be a rational response to the lack of labor market rewards.

Charge: The United States is an enormous failure in the international comparisons of educational achievement.

Response: This is false. What United States students face is unfair competition. American parents have a different conception of childhood than do Japanese parents. This leads to enormous differences in the amount of time the two groups of students have had to practice the skills upon which they are tested. For example, the Japanese school year is 60 days longer than the U.S. school year. Those extra days add up to over three extra years across ten years of schooling.

Moreover, a large percent of Japanese students spend additional time in private "after-school" (juku) schools and in Saturday schools and are also assigned and expected to complete a great amount of homework. The result is that the average Japanese student of the same age as an American student has accumulated huge amounts of extra time practicing school subjects at home and on weekends. Comparisons of the mathematics and science achievement of these two groups have not taken these differences into account.

Moreover, the students against which U.S. students are compared are not always representative of a country's population, In comparison to most other nations, the U.S. has a larger percentage of the school-age population attending school. Thus our representative sample is culturally and economically more heterogeneous. For instance, in the first International Assessments of Education Achievement the performance of 75% of the 13 and 16 year-old students in the United States was compared with the following groups: the top 9% of the students in West Germany, the top 13% in the Netherlands, and the top 45% in Sweden. Given these differences, we would not be surprised that average scores by American students are below those of select students in other countries.

Furthermore, countries have different expectations about what should be learned by students at various stages of the schooling process. Many school systems do not hold as many children as we do until high school graduation, and most have fewer students continuing through to higher education and so need to teach many things at an earlier point in the curriculum. Since we attempt to retain our youngsters longer in school , and because we send a comparatively large number of them to college, we often delay instruction in areas such as advanced math and science. Our students have often not yet had the opportunity to learn what is tested in international comparisons. **(1993)**