

COVER STORY

U.S. pupils rank low in global tests

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By Dennis Kelly
USA TODAY

WASHINGTON — You can argue all you want about comparing apples and apples, and whether U.S. kids ought to be like kids in other countries, even if they could be.

But the conclusion of the newest international comparison of students' abilities in math and science, out

Wednesday, is still clear:

U.S. kids still rank near the bottom — despite a decade of education reform and hand-wringing that the nation is losing its competitive edge with poorly educated students.

The Second International Assessment of Educational Progress, a tightly controlled test of 9- and 13-year-olds in 20 countries conducted last March, found that American 13-year-olds still finish third from the bottom in science and second from last in math.

"According to these exams, we're about on a level with Spain and somewhat below Slovenia," said Albert Shanker, president, the American Federation of Teachers.

The finish was nearly a carbon copy of the last international comparison by the Educational Testing Service on

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Making math, science 'real world' tools

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kids in five countries and four Canadian provinces in 1989. But critics have undressed that exam repeatedly to expose the fallacy they see in comparing countries where societies, the percent of kids who go to school, and the curriculums vary so widely.

One such critic, Iris Rotberg of the Rand Corp., still believes the tests are inherently flawed.

The report, she says, pointed out that Italy's results were from northern Italy, "the richest part," and that only Russian-speaking schools — "the most elite" — were tested in the former Soviet Union.

The findings came with a host of caveats. ETS president Gregory Anrig warned the media against converting the scores into a horse-race order of finish. Korea finished first in math with an average score of 73%, and the Soviet Union finished fourth at 70%. But the margins of error in each country's scores makes it impossible to say which one really finished first, he said.

Still, he and other educators said this exam just confirms all the bad news we've been hearing about U.S. kids for years.

"The results don't change," Anrig says. "So somewhere along the line we have to stop questioning the means and the message and we've got to address (the problem)."

For the record, the order of finish among the 15 countries where valid comparisons could be made:

► **In science** — Korea, Taiwan, Switzerland, Hungary, the former Soviet Union (Russian speaking schools), Slovenia, the Emilia-Romagna province in Italy, Israel (Hebrew-speaking schools), Canada, France, Scotland, Spain, U.S., Ireland and Jordan.

► **In math** — Korea, Taiwan, Switzerland, Soviet Union, Hungary, France, Italy, Israel, Canada, Scotland, Ireland, Slovenia, Spain, U.S. and Jordan.

Japan and Germany were invited to compete, but declined.

The tests included a host of survey questions to gauge different factors affecting education in each country

— including class size, length of school year and so on. Archie Lapointe, who oversaw the ETS assessment, said there was no clear "recipe for success" from those findings.

But factors that had positive impact were the amount of leisure reading at home and the rigor of the curriculum. The amount of TV watching is a negative, he said.

Do results mean that U.S. kids are worse now than those in the past?

No, said Education Secretary Lamar Alexander. A report released last week showed today's kids score about the same in math and science as students did in 1970.

Still, Alexander and Walter Massey, director of the National Science Foundation, used the occasion to announce a new alliance to spend \$657 million on math-science education. Most of it will go toward teacher training, a key problem in the U.S. because so many teachers still feel uncomfortable with the subject.

Lapointe found cause for optimism in one finding — that U.S. 9-year-olds ranked third out of 15 countries in science. He said children bring to school a lot of learning that takes place outside the school building, and he took heart that "there are a lot of things happening in the country today."

Indeed, parents may be puzzled by student performance because of all the stories they read about gee-whiz classes at city museums and universities. Consider:

► 300,000 kids and parents a year file through the Lawrence Hall of Science on the University of California, Berkeley campus. There, kids learn chemistry by measuring the vitamin C in foods, while others, like Tony Rodrigues, age 7, thrill to sticking their heads inside large bubbles in classes on "bubble-ology."

"His (school) teachers are wonderful, but we just don't have the funding to do what Lawrence Hall can do," laments his mother, Shari Rodrigues.

► Math teachers increasingly are showing kids that math really is something they can use. At Bennion Elementary School near Salt Lake City, kids start a business with play money and keep their own bank

statements. They also use math to purchase art materials.

"I think it helps them see math is part of their everyday world," says fifth grade teacher Angie Osness. "I really feel like kids could be challenged more and more could be expected of them."

But for all the media hype of programs that give kids goopy slime to play with, the sad truth remains that math and science in most schools are on the back burner.

"It simply isn't happening," says Bill Aldridge, executive director, the National Science Teachers Association. "They don't have adequate supplies, they don't have the resources and teachers are poorly trained. In general, it's not going very well, and it's not changed substantially from a year or two ago."

In spite of that, Aldridge is convinced that the U.S. will achieve President Bush's goal of making this nation's kids number one in the world in math and science by the year 2000. The reason for his optimism: new reforms.

► The science teachers' association is leading a change in the "layer-cake approach" in high school in which kids take biology, chemistry and physics in separate layers, one year after the other. A new approach — already adopted in several states — requires kids to study a mix of four sciences at the same time over six years.

Aldridge says it lets kids absorb concepts over a longer period, a technique proven to provide greater understanding.

► Likewise, the National Council of Teachers of Mathematics has produced a new manifesto for teachers showing them the wisdom of teaching math through the use of real-world problems. Now, they ask kids to do things like take an 8-by-8-foot piece of plywood and make the biggest possible doghouse out of it, Lamar Alexander said.

He said the latest test findings didn't surprise him, but that parents still need to be convinced that the world has changed and U.S. kids will have to do better.

"We shouldn't panic about it," he said. "We just need to get on with it."