

Modest gains, but US students still lag in science learning

October 27 2016, by Jennifer C. Kerr

The vast majority of U.S. students still lack a solid grasp of science despite some modest gains by fourth and eighth graders, especially girls and minorities.

The problem is particularly acute among the nation's high school seniors.

The 2015 National Assessment of Educational Progress, often called the Nation's Report Card, released Thursday shows only about a third of fourth and eighth graders demonstrated strong academic performance in the sciences. Among 12th graders, just one in five were proficient or above in science.

"We still are not at a place as a country where we are preparing the future STEM workforce that we need," Education Secretary John B. King Jr. said referring to science, technology, engineering and math courses. "We think there's significant work still to do, but we are heartened by the progress that we see in these results."

Average scores on the science exam were up four points in grades four and eight, and unchanged for 12th grade, compared to 2009. The results also show that fourth-grade girls had closed the gender gap and were now performing as well as boys. In eighth grade, that gender gap had tightened.

Achievement gaps among white, black and Hispanic students narrowed, too, at grades four and eight, as minority students made greater gains,

said Peggy Carr, acting commissioner at the National Center for Education Statistics.

Susan German, an eighth-grade science teacher at Hallsville Middle School in Missouri, welcomed the gains, saying "improvement is always good even if it's in small bits."

German says she engages her class with lots of hands-on projects. In one, her students had to design and build models for a water treatment facility. They tested their designs and made adjustments for any leaks, but German says it's not just the science she's trying to teach.

"While they're acting like scientists and engineers, it's the bigger, broader thinking skills that I'm after, because regardless of what you want to do in this world, critical thinking skills are important," she said.

Science teacher Lisa Hegdahl at McCaffrey Middle School in Galt, California, said her eighth-grade students have a huge interest in science, often wanting to continue their work outside the classroom.

"It's great because we were trying to show kids that science isn't just about the classroom. It's about the world you live in," Hegdahl, president of the California Science Teachers Association, said in an interview. "It's about why that tree is growing. It's why it's making a shadow and why that shadow changes over time. It's getting them to see the world a little bit differently and starting to be curious."

Nationally, the test results showed that 38 percent of fourth-grade students were considered proficient or above in science. In eighth grade, 34 percent were proficient or above. Only 22 percent of 12th graders scored proficient or above. The rest were at or below the basic level.

At the state level, Arizona had the biggest gain for fourth graders,

scoring 11 points higher on the exam compared with 2009. Tennessee and Georgia followed, each with an eight-point gain. In eighth grade, the winners were Utah and Tennessee, which tied for first place with a nine-point gain, followed by South Carolina and Mississippi, which each had an eight-point score gain over 2009. State-level results were not available for 12th grade.

The Nation's Report Card is the largest nationally representative continuing assessment of what American students know and don't know in various subjects. The science test measures students' knowledge of physical science, life science, and Earth and space sciences.

In fourth grade, the overall average score was 154 on a scale of 300 total points. The average score also was 154 for eighth grade.

For high school seniors, the average score was 150, flat from the last time the test was administered in 2009.

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