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DG19970108E1

Long-Term Achievement Study Shows Gains, Losses

By Linda Jacobson

Student achievement in math and science has remained fairly stable throughout the 1990s, inching slightly upward for the nation's 17-year-olds since 1994, according to a report from the U.S. Department of Education.

In reading and writing, however, the outlook is less rosy as performance has declined for some grade levels.

"NAEP 1996 Trends in Academic

Progress," which was scheduled for release Aug. 30 by the department's National Center for Education Statistics, is the latest report to focus on long-term trends in the National Assessment of Educational Progress.

Called the nation's report card, NAEP is the only ongoing assessment of U.S. students in core academic subjects.

For more than 20 years, tests in math, science, and reading have been given every two years to 9-

13-, and 17-year-olds. In 1984, writing tests were added in the 4th, 8th, and 11th grades.

Assessments for this long-term report are administered separately from the newer NAEP tests that use more up-to-date testing methods, such as open-ended questions and hands-on activities.

To assure continuity, the trend assessments pose the same sets of questions year after year.

No New Major Changes

For this analysis, none of the 1996 scores was different enough from the 1994 scores to be considered statistically significant.

But over time, important patterns have emerged. Despite their meager gains in recent years, 17-year-olds' science scores, for example, are significantly lower than when the test was first administered in 1969. On the other hand, they are significantly higher for 9-year-olds.

In math and reading, the performance of 9- and 13-year-olds is notably higher than when those tests were first given in the early 1970s. For 17-year-olds, however, it is lower.

Eleventh graders' writing scores have also declined over time.

In all subjects, white students have outperformed black and Hispanic students.

Overall, the report indicates that the achievement gap between white and black students has narrowed in science, math, and reading. At a few points along the way, Hispanic students have also been able to close the gap somewhat.

But the authors also observe that at some grade levels, the gap between white students and minorities appears to be widening again.

In writing, there has been no significant change in the disparity between white and black students or between white and Hispanic students.

Boys, in general, continue to score higher than girls in math and science, while girls do better than boys in reading and writing. For 17-year-olds, the gender gap in science was smaller in 1996 than it was in 1969, but in the other age groups, there have been no dramatic shifts.

Nine- and 13-year-old girls actually scored higher in math than their male counterparts during the 1970s, but since the early 1980s, that pattern has been reversed.

The report also provides insights into the home and school experiences that contribute to students' knowledge of the subject matter.

In 1996, for example, students who worked with living plants earned higher science scores than those whose assignments excluded hands-on activities.

The report also notes that students continue to take more advanced courses in mathematics, which has led to higher scores in that subject.

Younger students are given more reading assignments than their counterparts were in 1984. But there has been little change in the amount of time children spend reading for fun.

And at all three grade levels, students report that they've been given more writing assignments.

In addition, between 1984 and 1996, there also has been, as would be expected, an increase in the amount of time students use computers both at school and at home.

The trend report is available free of charge from the National Library of Education, Office of Educational Research and Improvement, U.S. Department of Education, 555 New Jersey Ave. N.W., Washington, DC 20208-5641; (800) 424-1616. It can also be found on the World Wide Web at <http://www.ed.gov/NCES/naep>.

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