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ABSTRACT

The paper summarizes a National Assessment of Educational Progress (NAEP) report, "Reading, Science and Mathematic Trends: A Closer Look," in which achievement trends are compared in several subjects for 4th, 8th, and 11th grade black students, white students, low achievers, and high achievers. Findings indicate that while overall performance in mathematics and science declined, reading performance remained stable. Students in the lowest performance quartiles realized greater gains than did those in the highest quartiles. Although black students in both the lowest and highest quartiles showed more improvement in reading and mathematics than their white counterparts, all highest quartile 17-year-olds suffered substantial losses in mathematics and science. State boards of education and teacher training institutions might ensure higher achievement levels in science and mathematics by: (1) reviewing the relationship between teacher training and curricular needs in mathematics and science; (2) reconsidering current retention and remediation policies that separate students from their age/grade group for remediation; and (3) ensuring that the curriculum covers both low level and high level skills. (LH)

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Student Performance Patterns Change

by Barbara J. Holmes, administrative editor, National Assessment of Educational Progress.

During the seventies, American education underwent a number of alterations, many in response to increased public concern over what students were not learning in school. One answer was to go "back to the basics." Another favored by many states and local districts was to give students minimum competency tests to identify the needy, tighten grade promotion standards or establish minimum criteria for high school graduation. At the same time, many federally funded compensatory education programs flourished.

What in fact happened to education achievement during this period? And what are the implications for the future? These are the questions explored in a report, *Reading, Science and Mathematics Trends: A Closer Look*, recently released by the National Assessment of Educational Progress (NAEP).

NAEP reexamined assessment data collected about 9-, 13- and 17-year-old students in two assessments each of reading, science and mathematics. The report compares achievement trends in several subjects and for four key groups of students in 4th, 8th and 11th grades: black students, white students, low achievers and high achievers. Among the findings are these:

- Performance in mathematics and science declined, for the most part, while reading performance remained stable.
- Overall, students in the lowest performance quartiles realized greater gains than did those in the highest performance quartiles. This was especially true of 9- and 13-year-olds in fourth or eighth grades, and it was most dramatic in reading.
- Black students in the lowest quartile improved their reading and mathematics performance more than white students. Black fourth and eighth graders in the highest quartiles also improved faster than white students in reading and mathematics.
- All highest quartile 17-year-olds in the 11th grade suffered substantial losses in mathematics and science.

These trends suggest that educators made considerable progress during the seventies in helping black students, low achieving students and reading performance in general. But they also suggest that more attention must be paid to mathematics and science achievement and to the highest quartile of students. In light of these trends, state boards of education and teacher training institutions might consider the following:

- Reviewing the relationship between teacher training and curricular needs in mathematics and science. Often students complete high school without the appropriate sequence or number of science and mathematics courses needed to pursue careers in technical fields or in teaching.
- Reviewing retention and remediation policies. Black students in their appropriate grades made considerable gains, whether they were in the lowest or highest quartiles. Those who were below model grade did not gain as much. Thus, educators may want to reconsider current retention policies that separate students from their age/grade group for remediation.
- Reviewing "basics" policies to make sure that the curriculum covers *both* low-level and higher-level skills. Various NAEP reports suggest that student gains during the seventies were concentrated in the fundamental, lower-order skills. Conversely, *losses* (especially at age 17) were concentrated in inferential comprehension in reading, problem-solving in mathematics and the physical, rather than the biological, sciences.

Many positive things were going on in the schools during the seventies. The challenge now is to give attention to science and mathematics, while not losing ground in reading and to find ways to strengthen students in the higher-order skills. Only by attending to these issues will we bring the schools back into synch with the economic and social needs of the eighties and nineties. ★

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