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INTRODUCTION

Good morning. My name is Russ Whitehurst, director of the Institute of Education Sciences and Acting Commissioner of the National Center for Education Statistics. I'm here today to present results of the 2004 Long-Term Trend Reading and Mathematics Assessments, assessments that are part of the National Assessment of Educational Progress, also known as the Nation's Report Card. These are the first long-term trend assessments that NCES has conducted since 1999.

OVERVIEW

Before I present the results, let me take a minute to explain some of the major differences between long-term trend NAEP and what we call "main NAEP," which you may be more used to hearing about.

The two basic types of NAEP assessments are main NAEP and long-term trend. The long-term trend assessments, whose results we are releasing today, provide data at the national level, include both public and private school students, and assess students by age rather than grade, at ages 9, 13, and 17. Main NAEP, on the other hand, assesses students by grade, and provides both national and state results, as well as results for ten of our largest urban school districts. We will be releasing main NAEP results in reading and mathematics in the fall of 2005.

We have long-term trend data going back more than thirty years, while main NAEP only goes back to the early nineties. In this discussion of the long-term trend results, I will focus on the comparison of the 2004 results to the first assessments, given in the early seventies, and the last, given in 1999. To preserve comparability of results in long-term

trend, we do not change the content of the assessment. In main NAEP, we update the content of the assessment about every ten years.

Both the long-term trend and main NAEP reading and mathematics results on a 0-500 point scale. To make scores more meaningful, long-term trend reports the percentage of students at "performance levels," set at 50-point intervals. Main NAEP, in contrast, reports the percentage of students at achievement levels set by the National Assessment Governing Board, or NAGB. These achievement levels set expectations for what children should know and be able to do.

These 2004 results are based on a representative sample of over 28,000 public- and private-school students assessed in reading and mathematics, at ages 9, 13, and 17. The different age groups were assessed at different times during the school year. Each student spent about 50 minutes on the assessment - 45 minutes answering content questions and about 5 minutes on general background information. As in all NAEP assessments, each student took only a portion of the full assessment. This procedure allows us to obtain extensive information for a student population - all students at age 9, for example - without burdening individual students.

HIGHLIGHTS OF MAJOR RESULTS IN READING AND MATHEMATICS

Now I'd like to present an overview of the results. When we look at overall findings, we see across-the-board improvements at age 9 in both reading and mathematics. At age 13, the results are more mixed. Improvements were seen in mathematics, but overall reading trends have remained flat for more than two decades. At age 17, we do not see higher scores overall, but scores for some student groups did improve.

Most gaps between White and minority students have narrowed but, as you will see, sizable gaps remain. Now, we're going to examine the findings in more detail, starting with the reading results.

TRENDS IN AVERAGE READING SCALE SCORES

Please note that at NCES we only discuss differences that are statistically significant. A "significant difference" is a difference that is larger than the margin of error. Since all NAEP scores are based on samples, there is a margin of error associated with each score. At age 9, the average reading score in 2004 was higher than in any previous year, with much of the change occurring since 1999. At age 13, we don't see much movement at all, but by 2004 scores were higher than in the first assessment. Seventeen-year-olds did not show a change from either the first or the last assessment.

I will now discuss the results for each age group in more detail.

At age 9, all three major racial/ethnic groups showed the same pattern for reading. White students showed an increase of more than 10 points since the first assessment. Almost

half the increase came since 1999. Black students posted a 30-point increase since 1971. Again, almost half the increase occurred since the last assessment. For Hispanic students, we see the same pattern once more. (Note that the first assessment for which we have separate data for Hispanic students is 1975 rather than 1971.)

Now we're going to look at the score gaps at age 9 for the racial/ethnic groups. Scores for both Black and White students have improved since 1971, but scores for Black students have improved more, leading to a narrowing of the gap. We also see a decline in the size of the gap since 1999. When we look at the scores of White and Hispanic students, we see a similar pattern since the first assessment - higher scores and a narrowing gap. However, here there is no change in the size of the gap since 1999.

At age 13, all three major student groups showed the same performance pattern: increases over the long term, but no improvement in recent years. For White students, scores increased 5 points from 1971 to 2004. Black students also had higher scores, with a 22-point gain since the first assessment. Hispanic students, with scores going back to 1975, showed a 10-point gain.

The gap between White and Black 13-year-olds in 2004 was smaller than in 1971, although no smaller than in 1999. Although the difference in gaps between 1999 and 2004 was not significant, the White/Black gap has decreased by 17 points since 1971. The gap between White and Hispanic students has not changed in size, despite improving scores for both groups since 1975.

At age 17, we see long-term improvements in performance among minority students. Scores for White students at age 17 did not improve in either the long or the short run. Black students, in contrast, achieved a 25-point gain from 1971, but their average score has not increased recently. We see a similar pattern for Hispanic students - an 11-point gain since 1975, but no recent change.

The reading score gap between 17-year-old White and Black students decreased by 24 points from 1971 to 2004. Although the score gap for Whites and Hispanics at age 17 appears to have varied considerably over the years, the only significant change occurred between 1975 and 2004.

Beginning in 1984, we have been asking students about their reading habits. The data indicate that 9- and 13-year-old students are reading more today - the percentage reading more than 20 pages a day has increased - from 13 percent in 1984 to 25 percent in 2004 for 9-year-olds and from 11 percent to 21 percent for 13-year-olds. At age 17, no significant changes in these percentages were detected.

TRENDS IN AVERAGE MATHEMATICS SCALE SCORES

Now we turn to the long-term trend mathematics assessment, which began in 1973. At age 9, scores were 22 points higher in 2004 than in the first assessment, and 9 points

higher than in 1999. We see similar results for age 13. Scores were 15 points higher than in the first assessment, and 5 points higher than in 1999. At age 17, we see no long-term or short-term change.

I will now discuss the results for each age group in more detail.

At age 9, all three major racial/ethnic groups showed a pattern of improving scores for mathematics that was similar to the pattern for reading. White students achieved an increase of more than 20 points since the first assessment, and about one third of the increase came since 1999. Black students posted a 34-point increase since 1973. More than one-third of the increase occurred since the last assessment. For Hispanic students, the 17-point increase since 1999 was more than half the total increase of 28 points over the entire period.

At age 9, as just noted, scores for both Black and White students have improved. To close the gap under such circumstances, Black students must show larger increases than White students, which did happen since 1973, but not since 1999. For Hispanic students, we see the opposite pattern. Average scores for Hispanic students have risen, both since 1973 and 1999, but only since 1999 has the increase been large enough to narrow the gap.

At age 13, as at age 9, mathematics scores for all three groups were higher than in any previous assessment. White students showed an increase of 14 points since the first assessment, and about one third of the increase came since 1999. Black students posted a 34-point increase since 1973 at age 13. And, once more, about a third of the increase occurred since 1999. For Hispanic students, the 6-point increase since the last assessment was about a quarter of the total increase since 1973.

The score gap between White and Black 13-year-olds declined between 1973 and 2004, although no significant change occurred from 1999 to 2004. Scores and score gaps for White and Hispanic students at age 13 show a similar pattern - higher scores for both groups and a narrowing of the gap from the first assessment, but not since 1999.

For 17-year-olds, there were no significant changes in average scores from 1999 to 2004. Although the overall score for 2004 did not show a difference from 1973, scores for the three largest racial/ethnic groups did improve. Scores for White students increased by 3 points, scores for Black students increased by 15 points, and scores for Hispanic students increased by 12 points.

This pattern raises an interesting question. How could the scores for all three of these groups increase without an increase in the overall score? The answer is that the three groups had differing average scores and that the relative size of the groups was changing. From 1973 to 2004, the percentage of White students - who, on average, had comparatively higher scores - fell from 83 percent to 69 percent, while the percentage of Hispanics - who tended to have lower average scores - increased from 4 percent to 14

percent. The increased percentage of students who, on average, had lower scores offset the fact that all the groups were improving their performance.

At age 17, the gap patterns resemble those at age 13. The 2004 gap for White and Black students was narrower than it was in 1973, but no narrower than in 1999. The trend in the score gap between White and Hispanic students shows this pattern as well. The gap in 2004 was narrower than in 1973, but no narrower than in 1999.

In 1978 we began asking 17-year-olds about the mathematics courses they had taken. The percentage of students who had taken higher level courses such as second-year algebra or calculus increased from 1978 to 2004. The percentage of students who reported they had taken second-year algebra rose from about 37 percent to about 53 percent. The percentage who said they had taken calculus almost tripled, from 6 percent to 17 percent. While the percentage of students who go on to higher mathematics courses has increased, the percentage who stop at pre-algebra has declined. In 2004, only about 4 percent of 17-year-old students had not taken a course beyond pre-algebra.

CONCLUDING NOTE

There is much more information in the long-term trend report, NAEP 2004 Trends in Academic Progress, that we are releasing today. Additional information is available from the NAEP website, http://nces.ed.gov/nationsreportcard.

In closing, I would like to thank the students and schools who participated in the 2004 NAEP long-term trend assessments. I would also like to thank my staff, as well as the contractors, who worked to make this assessment a success.

FOR MORE INFORMATION

Powerpoint presentation for National Assessment of Educational Progress 2004 Trends in Academic Progress (PPT 2,605KB)

For more information on National Assessment of Educational Progress, please visit the NAEP NCES website (http://nces.ed.gov/nationsreportcard/) or contact NCES staff.

Top

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- UPDATED VERSION! Build a Table with Public Elementary/Secondary Data

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