Section 2

Learner Outcomes

Contents

Section 2: Website Contents

This List of Indicators includes all the indicators in Section 2 that appear on *The Condition of Education* website (http://nces.ed.gov/programs/coe), drawn from previously published print volumes. The list is organized by subject area. The indicator numbers and the years in which the indicators were published are not necessarily sequential.

Introduction: Learner Outcomes

The indicators in this section of *The Condition of Education* examine student achievement and other outcomes of education among students in elementary and secondary education and among adults in the larger society. There are 27 indicators in this section: 9, prepared for this year's volume, appear on the following pages, and all 27, including indicators from previous years, appear on the Web (see Website Contents on the facing page for a full list of the indicators). The indicators on student achievement show how students are performing on assessments in reading, mathematics, science, and other academic subject areas; trends over time in student achievement; and gaps in achievement. The indicators in this section are organized into five subsections.

The indicators in the first subsection trace the gains in achievement and specific reading and mathematics skills of children through the early years of elementary education. Children enter school with varying levels of knowledge and skill. Measures of these early childhood competencies represent important indicators of students' future prospects both inside and outside of the classroom. Two indicators available on the website highlight changes in student achievement for a cohort of children who began kindergarten in fall 1998 as they progressed through 3rd grade in 2001–02.

The indicators in the second subsection report trends in student performance by age or grade in the later years of elementary education through high school. As students progress through school, it is important to know the extent to which they are acquiring necessary skills and becoming proficient in challenging subject matter. Academic outcomes are basically measured in three ways: as the change in students' average performance over time, as the change in the percentage of students achieving predetermined levels of achievement, and through international comparisons of national averages. Several indicators in this section show the achievement of students in reading at grades 4, 8, and 12 and in mathematics at grades 4 and 8. Another indicator that appears on the Web highlights achievement in science for students in these grades. Two new indicators feature writing and economics scores. Also, several indicators examine skills in reading, mathematics, and science at the international level. Together, indicators in the first two subsections help to create a composite picture of academic achievement in U.S. schools.

In addition to academic achievement, there are adult literacy measures in the third subsection and socially and culturally desirable outcomes of education in the fourth subsection. These outcomes, which are measured here by adult literacy, adult reading habits, and the health status of individuals, contribute to an educated, capable, and engaged citizenry.

The fifth subsection looks specifically at the economic outcomes of education. Economic outcomes include the likelihood of being employed, the salaries paid to individuals with varying levels of educational attainment, the job and career satisfaction of employees, and other measures of economic well being and productivity.

The indicators on learner outcomes from previous editions of *The Condition of Education*, which are not included in this volume, are available at http://nces.ed.gov/programs/coe/list/i2.asp.

Academic Outcomes

Reading Performance of Students in Grades 4, 8, and 12

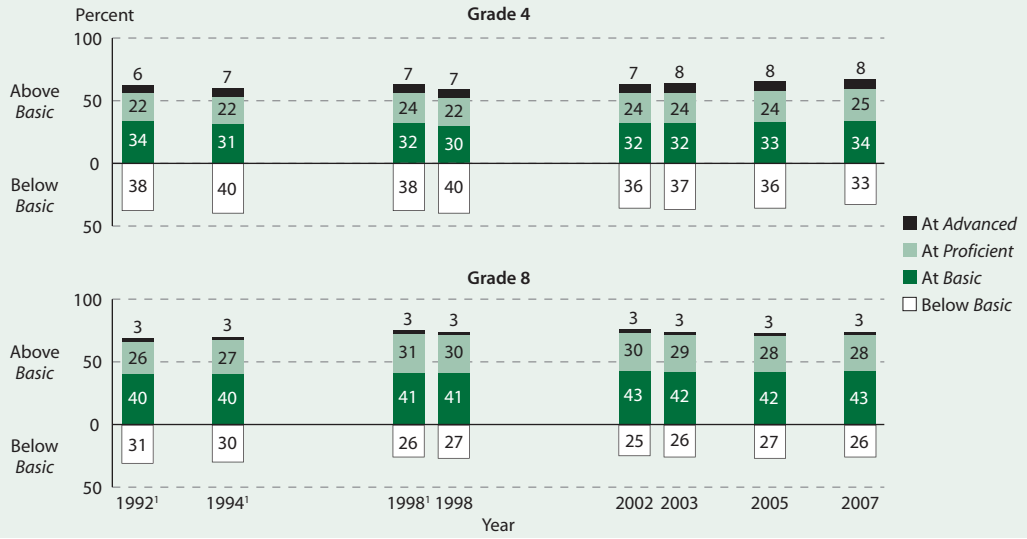
National average reading scores of 4th- and 8th-graders were higher in 2007 than in 1992, by 4 and 3 points, respectively. However, the reading score of 12th-graders was 6 points lower in 2005 than in 1992.

The percentage of 4th-graders performing at or above the *Basic* achievement level on the National Assessment of Educational Progress (NAEP) reading assessment was higher in 2007 than in 1992 (67 vs. 62 percent), as was the percentage performing at or above the *Proficient* achievement level (33 vs. 29 percent).[1] Percentages at both of these achievement levels were higher in 2007 than in 2005 (see supplemental table 12-1). The percentage of 8th-graders performing at or above *Basic* was higher in 2007 than in 1992 (74 vs. 69 percent), while there was no measurable difference in the percentage performing at or above *Proficient*. In 2007, the percentage of 8th-graders at or above *Basic* was higher than that in 2005, but the percentages at or above *Proficient* for these two years were not measurably different. The percentage of 12th-graders performing at or above *Basic* was lower in 2005[2] than in 1992 (73 vs. 80 percent), as was the percentage of 12th-graders performing at or above *Proficient* (35 vs. 40 percent).

Reported on a scale of 0 to 500, national average reading scores of 4th- and 8th-graders were higher in 2007 than in 1992, by 4 and 3 points, respectively (see supplemental table 12-2). These 2007 scores were higher than 2005 scores. The reading score of 12th-graders was 6 points lower in 2005 than in 1992. In the most recent assessment, females at each grade level outscored their male counterparts. For example, 12th-grade females scored 13 points higher than males in 2005. Average scores were higher in 2007 than in 1992 for White, Black, Hispanic, and Asian/Pacific Islander 4th-graders (ranging from 6 to 16 points) and for White, Black, and Hispanic 8th-graders (ranging from 5 to 7 points), while scores were lower in 2005 than in 1992 for White, Black, and Hispanic 12th-graders (ranging from 5 to 7 points).

NAEP results also permit state-level comparisons of the abilities of 4th- and 8th-graders in public schools.[3] The percentage of 4th-grade students performing at or above *Basic* was higher in 2007 than in 1992 in 24 of the 42 states that participated in both assessment years (see supplemental table 12-3). Of the 38 states that participated in the grade 8 assessment in both years, the percentage of students performing at or above *Basic* was higher in 2007 than in 1998 in 5 states and lower in 2007 than in 1998 in 7 states.

READING PERFORMANCE: Percentage distribution of 4th- and 8th-grade students across NAEP reading achievement levels: Selected years, 1992–2007



[1] Testing accommodations (e.g., extended time, small group testing) for children with disabilities and limited-English-proficient students were not permitted in 1992 and 1994, and students were tested with and without accommodations in 1998.

[2] The 2003 and 2007 National Assessment of Educational Progress (NAEP) Reading Assessments were not administered to 12th-grade students.

[3] State samples were not collected for grade 12; therefore, state results for grade 12 are not available.

NOTE: The National Assessment of Educational Progress (NAEP) has assessed the reading abilities of students in grades 4, 8, and 12 in public and private schools since 1992. NAEP reading scores range from 0 to 500. The achievement levels define what students should know and be able to do: *Basic* indicates partial mastery of fundamental skills; *Proficient* indicates demonstrated competency over challenging subject matter; and *Advanced* indicates superior performance. The percentage of students at or above *Proficient* includes students at the *Advanced* achievement level. Similarly, the percentage of students at or above *Basic* includes students at the *Basic*, those at the *Proficient*, and those at the *Advanced* achievement levels. Beginning in 2002, the NAEP national sample for grades 4 and 8 was obtained by aggregating the samples from each state and the District of Columbia, rather than by obtaining an independently selected national sample. As a consequence, the size of the national samples for grades 4 and 8 increased, and smaller differences between years or between types of students were found to be statistically significant than would have been detected in previous assessments. Calculations are based on unrounded numbers. See *supplemental note 4* for more information on NAEP. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), selected years, 1992–2007 Reading Assessments, NAEP Data Explorer.

FOR MORE INFORMATION:

Supplemental Notes 1, 4

Supplemental Tables 12-1, 12-2, 12-3

Indicator 16

Academic Outcomes

Mathematics Performance of Students in Grades 4 and 8

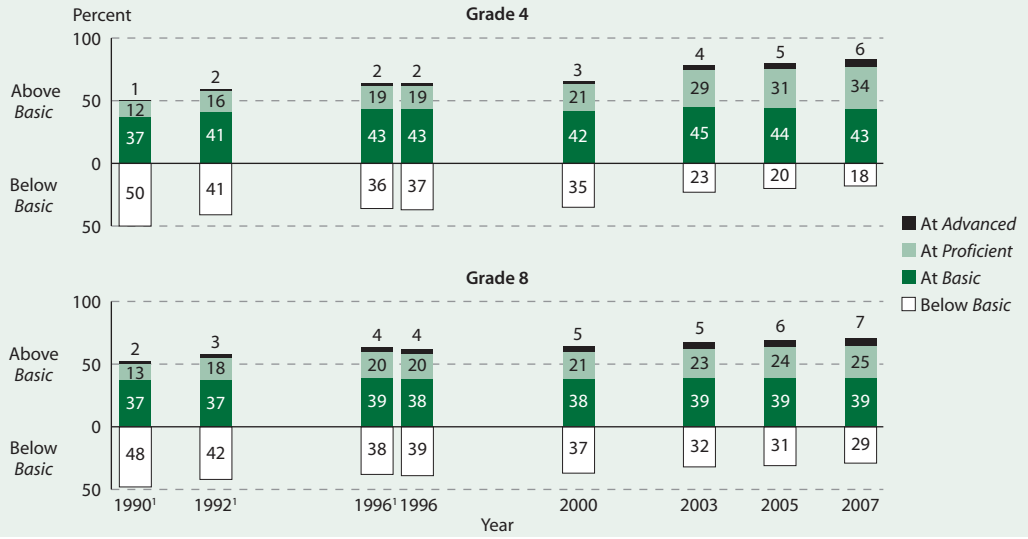
In 2007, students in grades 4 and 8 showed improvements from all previous assessments at all mathematics achievement levels.

The percentages of 4th- and 8th-grade students at or above *Basic*, at or above *Proficient*, and at *Advanced* achievement levels were higher in 2007 than the percentages for all previous mathematics assessments[1] (see supplemental table 13-1). For example, the percentage of 4th-grade students at or above *Proficient* increased by 3 percentage points from 2005 to 2007 and tripled from 1990 to 2007 (13 vs. 39 percent). For 8th-grade students, the percentage scoring at or above *Proficient* increased by 2 percentage points from 2005 to 2007 and doubled from 1990 to 2007 (15 vs. 32 percent).

From 1990 to 2007, the average NAEP mathematics scores increased 27 points for 4th-graders and 19 points for 8th-graders. Increases in scores were seen for both males and females and for most racial/ethnic groups. Both male and female 4th- and 8th-graders scored higher in 2007 than in any of the previous assessments (see supplemental table 13-2). In 2007, at each grade, males outscored females by 2 points; these score gaps were not measurably different from the gaps in either 2005 or 1990. For grade 4, average scores in 2007 for White, Black, Hispanic, and Asian/Pacific Islander students were higher than the scores in any of the previous assessments. Although the score for American Indian/Alaska Native 4th-graders increased over time, there was no measurable difference between their 2005 and 2007 scores. For grade 8, average scores in 2007 for White, Black, and Hispanic students were higher than in any of the previous assessments. The average score for 8th-grade Asian/Pacific Islander students was higher in 2007 than in 1990, but not measurably different from their 2005 score. No measurable differences were detected in the scores for American Indian/Alaska Native 8th-graders over the assessment years.

NAEP results also permit state-level comparisons of the abilities of 4th- and 8th-graders in public schools. There were 42 states that participated in both the 1992 and 2007 assessments for 4th grade and 38 states that participated in both the 1990 and 2007 assessments for 8th grade. For each of these participating states and at each grade level, there was an increase in the average score as well as in the percentages of students scoring at or above *Basic* and at or above *Proficient* (see supplemental table 13-3).

MATHEMATICS PERFORMANCE: Percentage distribution of 4th- and 8th-grade students across NAEP mathematics achievement levels: Selected years, 1990–2007



[1] Testing accommodations (e.g., extended time, small group testing) for children with disabilities and limited-English-proficient students were not permitted in 1990 and 1992, and students were tested with and without accommodations in 1996.

NOTE: The National Assessment of Educational Progress (NAEP) has assessed the mathematical abilities of students in grades 4 and 8 in public and private schools since 1990. NAEP mathematics scores range from 0 to 500. The achievement levels define what students should know and be able to do: *Basic* indicates partial mastery of fundamental skills; *Proficient* indicates demonstrated competency over challenging subject matter; and *Advanced* indicates superior performance. The percentage of students at or above *Proficient* includes students at the *Advanced* achievement level. Similarly, the percentage of students at or above *Basic* includes students at the *Basic*, those at the *Proficient*, and those at the *Advanced* achievement levels. See *supplemental note 4* for more information on NAEP. Calculations are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), selected years, 1990–2007 Mathematics Assessments, NAEP Data Explorer.

FOR MORE INFORMATION:

Supplemental Notes 1, 4

Supplemental Tables 13-1, 13-2, 13-3

NCES 2007-494

Indicator 16

Academic Outcomes

Writing Performance of Students in Grades 8 and 12

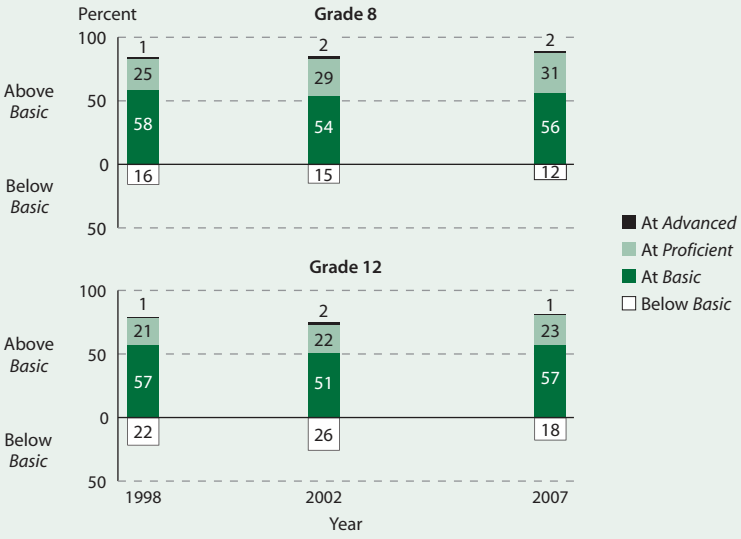
Average writing scores of 8th- and 12th-graders were higher in 2007 than in previous years.

The National Assessment of Educational Progress (NAEP) has assessed trends in the writing abilities of students in grades 8 and 12 in both public and private schools since 1998. Reported on a scale of 0 to 300, average writing scores of 8th- and 12th-graders were higher in 2007 than in either 1998 or 2002 (see supplemental table 14-1). Eighth-graders scored 3 points higher in 2007 than in 2002 and 6 points higher than in 1998. The average writing score for 12th-graders was 5 points higher in 2007 than in 2002 and 3 points higher than in 1998.

The percentage of 8th-graders performing at or above the *Basic* achievement level was higher in 2007 than in 1998 (88 vs. 84 percent), as was the percentage performing at or above the *Proficient* achievement level (33 vs. 27 percent).[1] The percentage of students at or above the *Basic* achievement level was also higher in 2007 than in 2002, but no measurable difference was detected in the percentage of students at or above *Proficient* between these two years. The percentage of 12th-graders performing at or above *Basic* increased from 74 percent in 2002 to 82 percent in 2007 and was higher in 2007 than in 1998. There was no measurable difference in the percentage performing at or above *Proficient* between 2002 and 2007, but there has been a 2 percentage point increase since 1998.

For all assessment years, females at each grade level outscored their male counterparts (see supplemental table 14-2). For example, 12th-grade females scored 18 points higher than their male peers in 2007. White, Black, and Hispanic 8th-graders had higher average scores in 2007 than in 1998 and 2002. Asian/Pacific Islander 8th-grade students scored higher in 2007 than in 2002, but the apparent change was not measurably different from 1998. Overall gains made by 12th-graders in 2007 were not consistent across all racial/ethnic groups. White students scored higher in 2007 than in either previous assessment year. Black and Asian/Pacific Islander students scored higher in 2007 than in 2002, but apparent differences were not measurably different from 1998. Writing scores in 2007 for Hispanic and American Indian/Alaska Native 12th-graders were not measurably different from those in previous assessments. For all assessment years, White students at each grade level outscored their Black and Hispanic peers.

WRITING PERFORMANCE: Percentage distribution of students across NAEP writing achievement levels, by grade: 1998, 2002, and 2007



[1] The percentage of students at or above *Proficient* includes students at the *Advanced* achievement level. Similarly, the percentage of students at or above *Basic* includes students at the *Basic*, those at the *Proficient*, and those at the *Advanced* achievement levels.

NOTE: The National Assessment of Educational Progress (NAEP) assessed the writing abilities of students in grades 8 and 12 in public and private schools in 1998, 2002, and 2007. As a result of larger 8th-grade sample sizes beginning in 2002, smaller differences can be found to be statistically significant than would have been detected with the smaller samples sizes used in 1998 or in the 12th-grade samples. NAEP writing scores range from 0 to 300. The achievement levels define what students should know and be able to do: *Basic* indicates partial mastery of fundamental skills; *Proficient* indicates demonstrated competency over challenging subject matter; and *Advanced* indicates superior performance. Calculations are based on unrounded numbers. Detail may not sum to totals because of rounding. See *supplemental note 4* for more information on NAEP.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998, 2002, and 2007 Writing Assessments, NAEP Data Explorer.

FOR MORE INFORMATION:

Supplemental Notes 1, 4

Supplemental Tables 14-1, 14-2

Academic Outcomes

Economics Performance of Students in Grade 12

On the 2006 12th-grade economics assessment, students who reported higher levels of parental education outperformed their peers who reported lower levels of parental education.

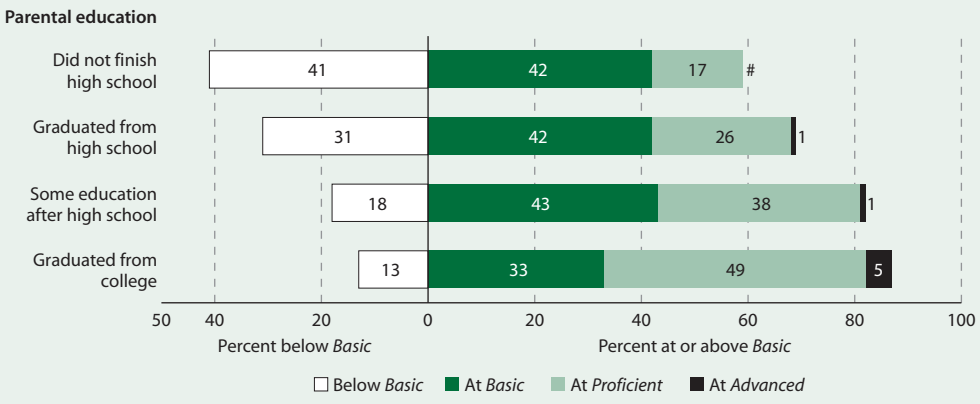
The National Assessment of Educational Progress (NAEP) conducted its first assessment of economics in 2006. The assessment evaluated 12th-grade students' understanding of economies and markets, the benefits and costs of economic interaction and interdependence, and choices made because of limited resources in three areas: market, national, and international economics.[1]

About 79 percent of 12th-graders performed at or above the *Basic* level[2] on this assessment, and 42 percent performed at or above the *Proficient* level (indicating solid academic achievement), including 3 percent at the *Advanced* level (indicating superior performance; see supplemental table 15-1). Reported on a scale of 0 to 300, the average score of 12th-graders was set at 150; this score fell within the *Basic* achievement level (indicating partial mastery of fundamental skills).[3]

Results from the assessment varied by student characteristics, including parental education and sex. Students who reported higher levels of parental education outperformed those who reported lower levels of parental education. For example, 54 percent of students whose parents were college graduates performed at or above the *Proficient* level, compared with 17 percent of students whose parents did not finish high school. In addition, males outperformed females on the assessment overall. About 45 percent of male students performed at or above the *Proficient* level, compared with 38 percent of female students. Student performance in the three content areas also followed the above patterns for parental education and sex (see supplemental table 15-2).

Student exposure to economics in the classroom was also highlighted in the assessment. Previous findings show that economic content in the high school curriculum has increased in recent decades: in 2005, some 66 percent of graduates reported that they had taken an economics course, compared with 49 percent in 1982 (NCES 2007-475).[4] In the 2006 NAEP assessment, most 12th-graders reported exposure to economics content: 16 percent had taken an advanced economics course,[5] and 49 percent had taken general economics. Twenty-three percent indicated that they had taken a business or personal finance course, or a course that combined economics with another subject. Thirteen percent said that they had not had any economics instruction.

ECONOMICS PERFORMANCE: Percentage distribution of 12th-grade students across NAEP economics achievement levels, by highest level of parental education: 2006



Rounds to zero.

[1] Market economy—traditionally described as "microeconomics"—covers how individuals, businesses, and institutions make decisions about allocating resources in the marketplace. National economy—traditionally described as "macroeconomics"—encompasses the sum of decisions made by individuals, businesses, and government. International economy concentrates on international trade—that is, how individuals and businesses interact in foreign markets.

[2] The percentage of students at or above *Proficient* includes students at the *Advanced* achievement level. Similarly, the percentage of students at or above *Basic* includes students at the *Basic*, those at the *Proficient*, and those at the *Advanced* achievement levels.

[3] The cutoff scores for economics achievement levels were as follows: *Basic* (123), *Proficient* (160), and *Advanced* (208).

[4] These estimates are taken from the National Assessment of Educational Progress (NAEP) High School Transcript Study.

[5] For example, Advanced Placement economics.

NOTE: Detail may not sum to totals because of rounding. See *supplemental note 4* for more information on the NAEP and NAEP achievement levels.

SOURCE: Mead, N., and Sandene, B. (2007). *The Nation's Report Card: Economics 2006* (NCES 2007-475), data from U.S. Department of Education, National Center for Education Statistics, NAEP Data Explorer.

FOR MORE INFORMATION:

Supplemental Notes 1, 4

Supplemental Tables 15-1, 15-2

Academic Outcomes

Trends in the Achievement Gaps in Reading and Mathematics

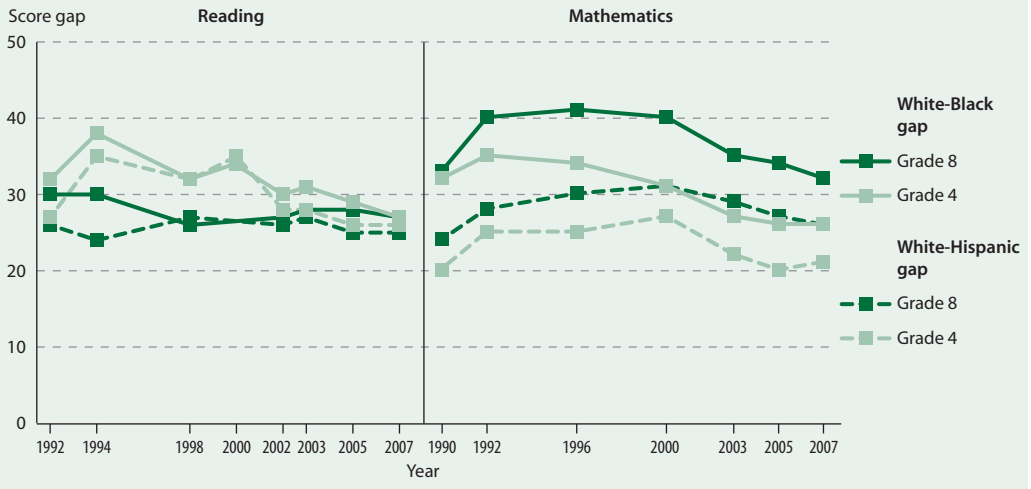
In 2007, the achievement gap between White and Black scores in reading and mathematics at the 4th grade was smaller than in 1992, while not measurably different at the 8th grade or between Whites and Hispanics in either grade.

The main National Assessment of Educational Progress (NAEP) program has assessed student reading and mathematics performance since the early 1990s. NAEP thus provides a picture of the extent to which student performance in each subject has changed over time, including the achievement gaps between White and Black and White and Hispanic students.

In reading, the achievement gap between White-Black 4th-graders was smaller in 2007 than in any previous assessment. However, the gap between White-Hispanic 4th-graders was not measurably different in 2007 compared with 1992. In 2007, at the 4th-grade level, Blacks scored, on average, 27 points lower than Whites (on a 0–500 scale), and Hispanics scored, on average, 26 points lower than Whites (see supplemental table 16-1). At 8th grade, there was no measurable difference in the White-Black or White-Hispanic reading achievement gaps in 2007 compared with 1992 or 2005. In 2007, at the 8th-grade level, Blacks scored, on average, 27 points lower on the reading assessment than Whites, and Hispanics scored, on average, 25 points lower than Whites.

In mathematics, the achievement gap between White-Black 4th-graders was lower in 2007 than in 1990 (26 vs. 32 points), but there was no measurable change over the last two years. The gap between White-Hispanic 4th-graders increased in the 1990s before decreasing in the first half of the 2000s, but the gap in 2007 (21 points) was not measurably different from that in 1990. Among 8th-graders, a similar trend existed in both the White-Black and White-Hispanic score gaps: increases occurred in the 1990s before decreasing to the current levels, which are not measurably different from those in 1990. The White-Black 8th-grade mathematics gap was lower in 2007 than in 2005, but there was no measurable change in the White-Hispanic gap. In 2007, among 8th-graders, the White-Black mathematics gap was 32 points, and the White-Hispanic gap was 26 points.

ACHIEVEMENT GAP: Differences in White-Black and White-Hispanic 4th- and 8th-grade average reading and mathematics scale scores: Various years, 1990–2007



NOTE: NAEP scores are calculated on a 0 to 500 scale. Student assessments are not designed to permit comparisons across subjects or grades. Race categories exclude persons of Hispanic ethnicity. The score gap is determined by subtracting the average Black and Hispanic score, respectively, from the average White score. Testing accommodations (e.g., extended time, small group testing) for children with disabilities and limited-English-proficient students were not permitted from 1990 through 1994. Beginning in 2002, the NAEP national sample for grades 4 and 8 was obtained by aggregating samples from each state, rather than by obtaining an independently selected national sample. See *supplemental note 4* for more information on NAEP.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1990–2007 Reading and Mathematics Assessments, NAEP Data Explorer.

FOR MORE INFORMATION:

Supplemental Notes 1, 4

Supplemental Table 16-1

NCES 2007-494

NCES 2007-496

Academic Outcomes

Reading and Mathematics Score Trends by Age

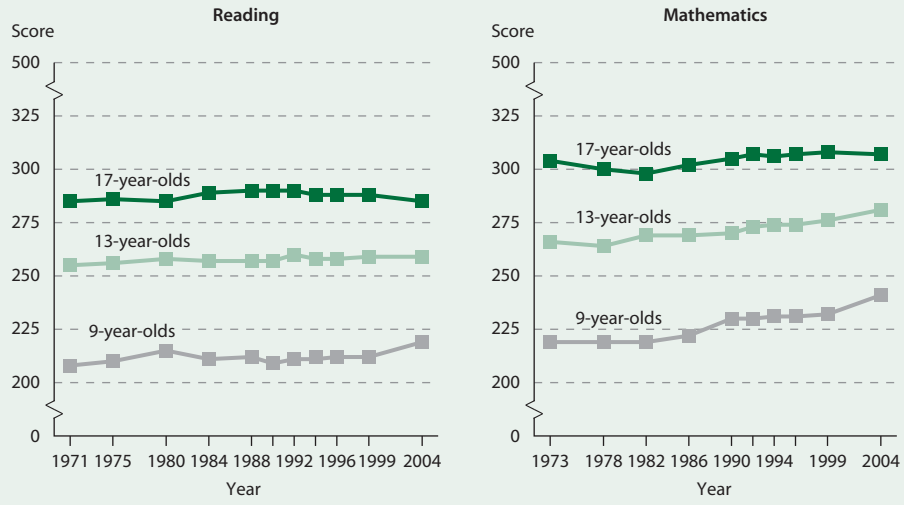
The average reading and mathematics scores on the long-term trend National Assessment of Educational Progress were higher in 2004 than in the early 1970s for 9- and 13-year-olds.

The long-term trend National Assessment of Educational Progress (NAEP) has provided information on the reading and mathematics achievement of 9-, 13-, and 17-year-olds in the United States since the early 1970s and is used as a measure of progress over time. These results may differ from the main NAEP results presented in *indicators 12, 13, 14, 15,* and *16* as the content of the long-term trend assessment has remained consistent over time, while the main NAEP undergoes changes periodically (see *supplemental note 4*).

NAEP long-term trend results indicate that the reading and mathematics achievement of 9- and 13-year-olds improved between the early 1970s and 2004. In reading, 9-year-olds scored higher in 2004 than in any previous assessment year, with an increase of 7 points between 1999 and 2004. The 2004 average score for 13-year-olds was not measurably different from the 1999 average score, but still was higher than the scores in 1971 and 1975. In mathematics, the achievement of 9- and 13-year-olds in 2004 was the highest of any assessment year. The performance of 17-year-olds on the 2004 reading and mathematics assessments, however, was not measurably different from their performance on either the first reading and mathematics assessments (in 1971 and 1973, respectively) or the 1999 reading and mathematics assessments.

The performance of subgroups of students generally mirrored the overall national patterns; however, there were some notable differences. The average reading and mathematics scores of Black and Hispanic 9-year-olds in 2004 were the highest of any assessment year (see supplemental tables 17-1 and 17-2). For Black 13-year-olds, reading and mathematics scores were higher in 2004 than the scores in the early 1970s, and the 2004 mathematics score was higher than in any previous assessment year. For Hispanic 13-year-olds, mathematics scores were higher in 2004 than in any previous assessment year. In contrast to the overall national results, the average scores of Black and Hispanic 17-year-olds were higher in 2004 than in the early 1970s. Black 17-year-olds improved 25 points in reading between 1971 and 2004, and 15 points in mathematics between 1973 and 2004 on a 0–500 point scale. Hispanic 17-year-olds improved 12 points in reading between 1975 (the first year the reading achievement of Hispanics was specifically measured) and 2004, and 12 points in mathematics between 1973 and 2004.

NAEP SCORES: Average reading and mathematics scale scores on the long-term trend National Assessment of Educational Progress (NAEP), by age: Various years, 1971 through 2004



NOTE: NAEP has two distinct assessment programs: the long-term trend assessment program and the main assessment program. Data from the long-term trend program, presented in this indicator, come from subject assessments that have remained substantially the same since the early 1970s in order to measure and compare student achievement over time. In contrast, data from the main NAEP assessment program, presented in *indicators 12, 13, 14, 15,* and *16,* come from subject assessments that are periodically adapted to employ the latest advances in assessment methodology and to reflect changes in educational objectives and curricula. Because the instruments and methodologies of the two assessment programs are different, it is not possible to compare long-term trend results with the main assessment results (see *supplemental note 4* for more information on the two NAEP programs). NAEP scores range from 0 to 500.

SOURCE: Perie, M., Moran, R., and Lutkus, A.D. (2005). *NAEP 2004 Trends in Academic Progress: Three Decades of Student Performance in Reading and Mathematics* (NCES 2005-464), figures 2-1 and 2-4, data from U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1971–2004 Long-Term Trend Reading and Mathematics Assessments.

FOR MORE INFORMATION:

Supplemental Notes 1, 4

Supplemental Tables 17-1, 17-2

Academic Outcomes

International Comparisons of Reading Literacy in Grade 4

In 2006, U.S. 4th-graders performed above the international average and above 22 of the 45 educational jurisdictions. There were no differences detected between the U.S. average scores from 2001 to 2006.

The 2006 Progress in International Reading Literacy Study (PIRLS) assessed the reading literacy of 4th-graders in 45 educational jurisdictions around the globe. The average U.S. 4th-grade score on the combined reading literacy scale was 540, above the PIRLS international average of 500. Students in 10 jurisdictions scored above U.S. students, on average. U.S. students scored higher, on average, than their peers in 22 jurisdictions. No differences were detected between the average score in the United States and those in 12 jurisdictions.

In addition to a combined reading literacy score, PIRLS provides two subscales: reading for literary purposes and for informational purposes. In 2006, U.S. 4th-graders' average scores on the two subscales were above the international averages (see supplemental table 18-1).

The United States was among 29 educational jurisdictions that participated in both the 2001 and 2006 PIRLS assessments. No differences were detected between the U.S. average scores in 2001 and 2006 on the combined reading literacy scale or on the two subscales (see supplemental table 18-2). Students in 8 jurisdictions showed measurable gains on the combined reading literacy scale between 2001 and 2006, while students in 7 jurisdictions showed measurable declines.

With few exceptions, in almost all participating jurisdictions, including the United States, 4th-grade girls scored higher than 4th-grade boys, on average, on the combined reading literacy scale. In most countries, 4th-grade girls also scored higher than 4th-grade boys on the two subscales in 2006 (see supplemental table 18-3). Within the United States, White 4th-graders had higher average scores than their Black, Hispanic, and American Indian/Alaska Native peers on the combined reading literacy scale (see supplemental table 18-4).

INTERNATIONAL READING PERFORMANCE: Average combined reading literacy scale scores of 4th-graders, by educational jurisdiction: 2006

Average score relative to the U.S. average score	Educational jurisdiction and score					
Significantly higher	Russian Federation	565	Singapore	558	Italy	551
	Hong Kong, SAR[1]	564	Luxembourg	557	Sweden	549
	Alberta, Canada	560	Ontario, Canada	555		
	British Columbia, Canada	558	Hungary	551		
Not significantly different	Germany	548	Nova Scotia, Canada	542	Lithuania	537
	Belgium (Flemish)[2]	547	Latvia	541	Chinese Taipei	535
	Bulgaria	547	**United States[2]**	**540**	Quebec, Canada	533
	Netherlands[2]	547	England	539		
	Denmark	546	Austria	538		
Significantly lower	New Zealand	532	Iceland	511	Trinidad and Tobago	436
	Slovak Republic	531	Belgium (French)	500	Iran, Islamic Republic of	421
	Scotland[2]	527	Moldova	500	Indonesia	405
	France	522	***International average***	***500***	Qatar	353
	Slovenia	522	Norway[3]	498	Kuwait	330
	Poland	519	Romania	489	Morocco	323
	Spain	513	Georgia	471	South Africa	302
	Israel	512	Macedonia	442		

[1] Hong Kong SAR is a Special Administrative Region (SAR) of the People's Republic of China.

[2] Met guidelines for sample participation rates only after replacement schools were included.

[3] Did not meet guidelines for sample participation rates after replacement schools were included.

NOTE: Jurisdictions were required to assess students who were in the grade that represented 4 years of formal schooling, counting from the first year of primary or basic education. In the United States and most educational jurisdictions, this corresponds to grade 4. See *supplemental note 5* for more information on the Progress in International Reading Literacy Study (PIRLS). The PIRLS international scale average is set at 500 with a standard deviation of 100.

SOURCE: Baer, J., Baldi, S., Ayotte, K., and Green, P. (2007). *The Reading Literacy of U.S. Fourth-Grade Students in an International Context: Results From the 2001 and 2006 Progress in International Reading Literacy Study (PIRLS)* (NCES 2008-017), data from the International Association for the Evaluation of Educational Achievement (IEA), Progress in International Reading Literacy Study (PIRLS), 2006.

FOR MORE INFORMATION:

Supplemental Note 5

Supplemental Tables 18-1, 18-2, 18-3, 18-4

Academic Outcomes

International Comparisons of Science Literacy

The average U.S. science literacy score was below the average of the 30 OECD-member countries. U.S. students had a lower average score than students in 16 OECD-member countries and a higher average score than students in 5 OECD-member countries.

The 2006 Program for International Student Assessment (PISA 2006) reports on the science literacy of 15-year-olds in 57 educational jurisdictions, including the 30 member countries of the Organization for Economic Cooperation and Development (OECD) and 27 non-OECD countries and subnational education systems. PISA 2006 provides scores on three subscales of scientific competencies in addition to a combined scientific literacy score. The average U.S. science literacy score was 489, which was below the average of the 30 OECD countries (500). U.S. students had a lower average score than students in 16 OECD-member countries and a higher average score than students in 5 OECD countries. U.S. students also scored lower than their peers in 6 non-OECD jurisdictions and higher than their peers in 17 non-OECD-member jurisdictions.

On specific scientific skill subscales measured in PISA 2006, the average score of U.S. students was below the OECD average in explaining phenomena scientifically and in using scientific evidence. No measurable difference was found between U.S. students' average score and the OECD average in identifying scientific issues (see supplemental table 19-1).

In a majority of participating jurisdictions (37 out of 57), including the United States, no measurable differences were found between the average combined science literacy scores of males and females (see supplemental table 19-2). Among jurisdictions where significant score differences were found by sex, 8 showed males outperforming females and 12 showed females outperforming males. In two of the three scientific skill subscales measured in PISA 2006, most jurisdictions showed a significant difference in the scores of males and females: in identifying scientific issues, females outperformed males; in explaining phenomena scientifically, males generally outperformed females.

Within the United States, the combined science literacy scores of U.S. 15-year-old Hispanic, Black, and American Indian/Alaska Native students were below the OECD average (see supplemental table 19-3). The average score of U.S. White students was above the OECD average, while the average scores of U.S. Asian, Native Hawaiian/Other Pacific Islander, and students of more than one race were not measurably different from the OECD average.

INTERNATIONAL SCIENCE LITERACY PERFORMANCE: Average combined science literacy scale scores of 15-year-old students, by country or jurisdiction: 2006

Average score relative to U.S. average score	OECD-member country and average score							
Significantly higher	Finland	563	Netherlands	525	Switzerland	512	Sweden	503
	Canada	534	Korea, Republic of	522	Austria	511	***OECD average***	**500**
	Japan	531	Germany	516	Belgium	510		
	New Zealand	530	United Kingdom	515	Ireland	508		
	Australia	527	Czech Republic	513	Hungary	504		
Not significantly different	Poland	498	Iceland	491	Spain	488		
	Denmark	496	**United States**	**489**	Norway	487		
	France	495	Slovak Republic	488	Luxembourg	486		
Significantly lower	Italy	475	Greece	473	Mexico	410		
	Portugal	474	Turkey	424				
	Non-OECD-member jurisdiction and average score							
Significantly higher	Hong Kong-China	542	Estonia	531	Slovenia	519		
	Chinese Taipei	532	Liechtenstein	522	Macao-China	511		
Not significantly different	Croatia	493	Lithuania	488				
	Latvia	490	Russian Federation	479				
Significantly lower	Israel	454	Jordan	422	Indonesia	393	Azerbaijan	382
	Chile	438	Thailand	421	Argentina	391	Qatar	349
	Serbia, Republic of	436	Romania	418	Brazil	390	Kyrgyz Republic	322
	Bulgaria	434	Montenegro, Republic of	412	Colombia	388		
	Uruguay	428			Tunisia	386		

NOTE: The Organization for Economic Cooperation and Development (OECD) is an intergovernmental organization of 30 industrialized nations. The OECD average represents the average of the 30 member nations where each country is counted equally regardless of population size. The OECD average was set to 500 with a standard deviation of 100.

SOURCE: Baldi, S., Jin, Y., Skewer, M., Green, P. J., and Herget, D. (2007). *Highlights From PISA 2006: Performance of U.S. 15-Year-Old Students in Science and Mathematics Literacy in an International Context* (NCES 2008-016), table 2a, data from the Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2006.

FOR MORE INFORMATION:

Supplemental Note 5

Supplemental Tables 19-1, 19-2, 19-3

Economic Outcomes

Annual Earnings of Young Adults

In 2006, young adults ages 25–34 with a bachelor's degree earned 28 percent more than young adults with an associate's degree and 50 percent more than young adult high school completers.

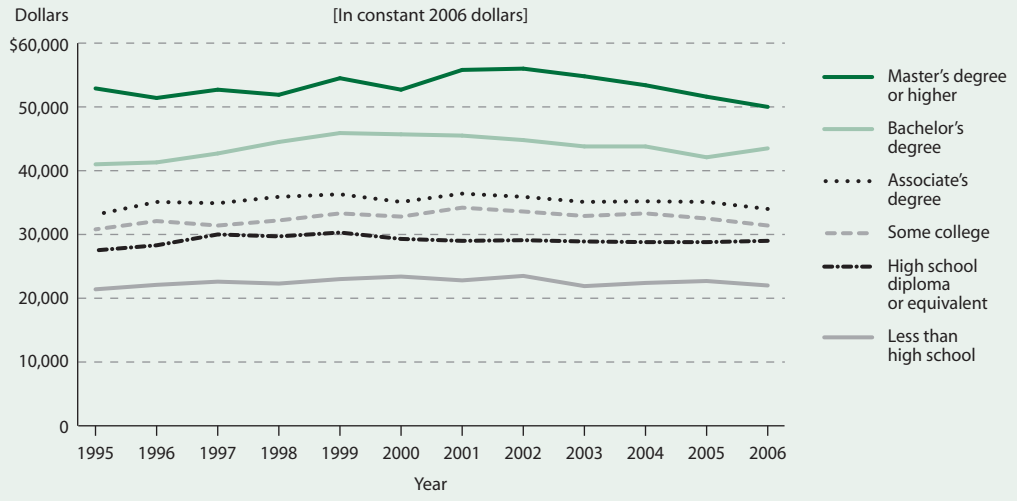
Measured in constant 2006 dollars, median earnings for young adults ages 25–34 who worked full time throughout a full year increased as education level increased for each year shown between 1995 and 2006 (see supplemental tables 20-1 and 20-2). For example, young adults with a bachelor's degree as their highest degree consistently had higher median earnings than those with less education. This pattern held for male, female, White, Black, Hispanic, and Asian subgroups.

In 2006, the median earnings of young adults with a bachelor's degree were $43,500, while the median earnings were $34,000 for those with an associate's degree, $29,000 for high school completers,[1] and $22,000 for those who did not earn a high school diploma. In other words, in 2006, young adults with a bachelor's degree earned 28 percent more than young adults with an associate's degree, 50 percent more than young adult high school completers, and 98 percent more than those who did not earn a high school diploma (see supplemental table 20-1). In 2006, the median earnings of young adults with a master's degree or higher were $50,000, or 15 percent more than young adults with a bachelor's degree.

The earnings difference between those with at least a bachelor's degree and those with less education increased between the longer period of 1980 and 2006. However, between 2000 and 2006, there was generally no measurable change in the earnings difference between these groups. For example, in 1980, young adults with a bachelor's degree or higher earned $14,600 more than those who did not earn a high school diploma or its equivalent. In 2000, this difference increased to $23,400 and was $23,000 in 2006.

In 2006, Asian young adults with a master's degree or higher had higher earnings than their White, Black, and Hispanic counterparts (see supplemental table 20-2). Unlike in earlier years, there were no measurable differences in earnings among White, Black, and Hispanic young adults with a master's degree or higher in 2006. In 2006, the average median earnings of Asian young adults with a master's degree or higher were $60,000, while the average median earnings for their White, Black, and Hispanic peers were between $48,000 and $50,000.

ANNUAL EARNINGS: Median annual earnings of full-time, full-year wage and salary workers ages 25–34, by educational attainment: 1995–2006



[1] Includes those who earned a high school diploma or its equivalent (e.g., a General Educational Development [GED] certificate).

NOTE: Educational levels represent highest degree obtained. Earnings are presented in 2006 constant dollars by means of the Consumer Price Index (CPI) to eliminate inflationary factors and allow for direct comparison across years. See *supplemental note 11* for further discussion. *Full-year worker* refers to those who were employed 50 or more weeks during the previous year; *full-time worker* refers to those who were usually employed 35 or more hours per week. The Current Population Survey (CPS) questions used to obtain educational attainment were changed in 1992. In 1994, the survey instrument for the CPS was changed and weights were adjusted. See *supplemental note 2* for further discussion on both of these changes.

SOURCE: U.S. Department of Commerce, Census Bureau, Current Population Survey (CPS), March and Annual Social and Economic Supplement, selected years, 1996–2007.

FOR MORE INFORMATION:

Supplemental Notes 1, 2, 11

Supplemental Tables 20-1, 20-2

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