

# Section I. Learner Outcomes

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## Trends in the science performance of 9-, 13-, and 17-year-olds

*Competence in science is an important outcome of education. The ability to apply scientific information, interpret data, and make inferences about scientific findings is required in a world that relies on technological and scientific advances.*

- In 1996, average science performance was higher at all three age levels than in 1982. However, due to declining science scores in the 1970s, scores for 13-year-olds were about the same in 1996 as in 1970 and, for 17-year-olds, were lower in 1996 than in 1970. For 9-year-olds, science performance was higher in 1996 than in 1970.
- In 1996, the average science performance of blacks and Hispanics remained well below that of whites. Nonetheless, the performance gap between whites and blacks at age 9 was smaller in 1996 than in 1970. Between whites and Hispanics at age 13, the gap was smaller in 1996 than in 1977.
- Evidence shows that the difference in science performance scores between the ages of 9 and 13 is similar across racial-ethnic groups, while between the ages of 13 and 17, the change is much greater for white students than it is for black students. For example, on average, white and black 13-year-olds who were assessed in 1990 scored 32 and 30 points higher, respectively, than did 9-year-olds who were assessed 4 years earlier, in 1986. In 1994, however, white 17-year-olds scored 42 points higher than white 13-year-olds did in 1990, while black 17-year-olds scored 31 points higher than their 13-year-old counterparts in 1990.

### Average science performance (scale score), by sex and age: 1970–96

| Year | Total |        |        | Male  |        |        | Female |        |        |
|------|-------|--------|--------|-------|--------|--------|--------|--------|--------|
|      | Age 9 | Age 13 | Age 17 | Age 9 | Age 13 | Age 17 | Age 9  | Age 13 | Age 17 |
| 1970 | 225   | 255    | 305    | 228   | 257    | 314    | 223    | 253    | 297    |
| 1973 | 220   | 250    | 296    | 223   | 252    | 304    | 218    | 247    | 288    |
| 1977 | 220   | 247    | 290    | 222   | 251    | 297    | 218    | 244    | 282    |
| 1982 | 221   | 250    | 283    | 221   | 256    | 292    | 221    | 245    | 275    |
| 1986 | 224   | 251    | 289    | 227   | 256    | 295    | 221    | 247    | 282    |
| 1990 | 229   | 255    | 290    | 230   | 259    | 296    | 227    | 252    | 285    |
| 1992 | 231   | 258    | 294    | 235   | 260    | 299    | 227    | 256    | 289    |
| 1994 | 231   | 257    | 294    | 232   | 259    | 300    | 230    | 254    | 289    |
| 1996 | 230   | 256    | 296    | 232   | 261    | 300    | 228    | 252    | 292    |

### Average science performance (scale score), by race-ethnicity and age: 1970–96

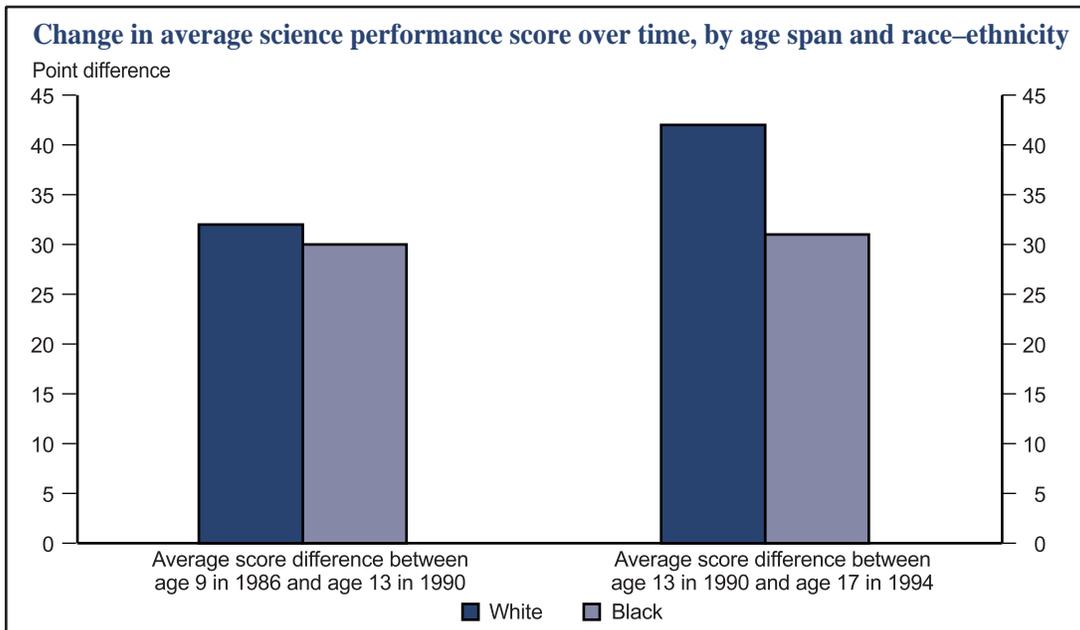
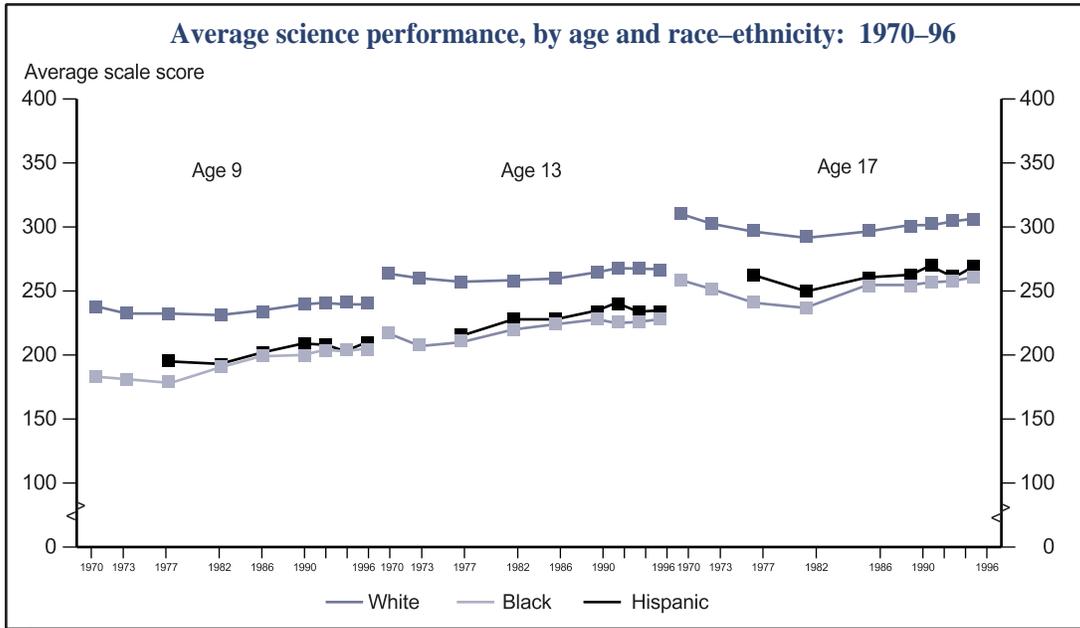
| Year | White |        |        | Black |        |        | Hispanic |        |        |
|------|-------|--------|--------|-------|--------|--------|----------|--------|--------|
|      | Age 9 | Age 13 | Age 17 | Age 9 | Age 13 | Age 17 | Age 9    | Age 13 | Age 17 |
| 1970 | 236   | 263    | 312    | 179   | 215    | 258    | —        | —      | —      |
| 1973 | 231   | 259    | 304    | 177   | 205    | 250    | —        | —      | —      |
| 1977 | 230   | 256    | 298    | 175   | 208    | 240    | 192      | 213    | 262    |
| 1982 | 229   | 257    | 293    | 187   | 217    | 235    | 189      | 226    | 249    |
| 1986 | 232   | 259    | 298    | 196   | 222    | 253    | 199      | 226    | 259    |
| 1990 | 238   | 264    | 301    | 196   | 226    | 253    | 206      | 232    | 262    |
| 1992 | 239   | 267    | 304    | 200   | 224    | 256    | 205      | 238    | 270    |
| 1994 | 240   | 267    | 306    | 201   | 224    | 257    | 201      | 232    | 261    |
| 1996 | 239   | 266    | 307    | 202   | 226    | 260    | 207      | 232    | 269    |

— Not available.

NOTE: The science performance scale has a range from 0 to 500. See supplemental table 1-1 for detailed explanations of levels.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *NAEP 1996 Trends in Academic Progress*, revised 1998.

### Average science performance



NOTE: The science performance scale has a range from 0 to 500. See supplemental table 1-1 for detailed explanations of levels. The data in the second graph are not longitudinal and should not be interpreted as such. For example, students assessed at age 9 are different from students assessed at age 13 or 17.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *NAEP 1996 Trends in Academic Progress*, revised 1998.

## Mathematics performance of 4<sup>th</sup>-, 8<sup>th</sup>-, and 12<sup>th</sup>-grade students

*For the past 25 years, the National Assessment of Educational Progress (NAEP) has assessed student performance in mathematics. A new NAEP framework has evolved due to advances in assessment methodology and changes in curricular and educational approaches in mathematics. This new framework reflects the National Council of Teachers of Mathematics Curriculum and Evaluation Standards for School Mathematics.*

- Overall, average mathematics performance scores improved between 1990 and 1996 for all students in grades 4, 8, and 12. Similarly, the percentage of students scoring at or above the basic levels also increased during the period at all three grade levels (see supplemental tables 2-1 and 2-2).
- Improvement in mathematics performance scores varies by state. Of the 38 jurisdictions that participated in the 4<sup>th</sup>-grade assessment in 1992 and 1996, 15 jurisdictions showed significant improvements in the mathematics scores of public school students during that period. Of the 36 jurisdictions that participated in the 8<sup>th</sup>-grade assessment, 13 showed significant improvements in student scores between 1992 and 1996. The remaining jurisdictions showed either decreases or no change (see supplemental table 2-3).
- Average scores for white students have remained higher than those for black and Hispanic students at all three grade levels; the gaps in scores between black or Hispanic and white students also remained similar between 1990 and 1996.
- While the mathematics scores for males and females were similar in the 4<sup>th</sup> and 8<sup>th</sup> grades, males outscored females in the 12<sup>th</sup> grade in 1990 and 1992. In 1996, scores for 12<sup>th</sup>-grade males and females were similar.

### Average mathematics performance (scale score), by grade and selected student characteristics: 1990, 1992, and 1996

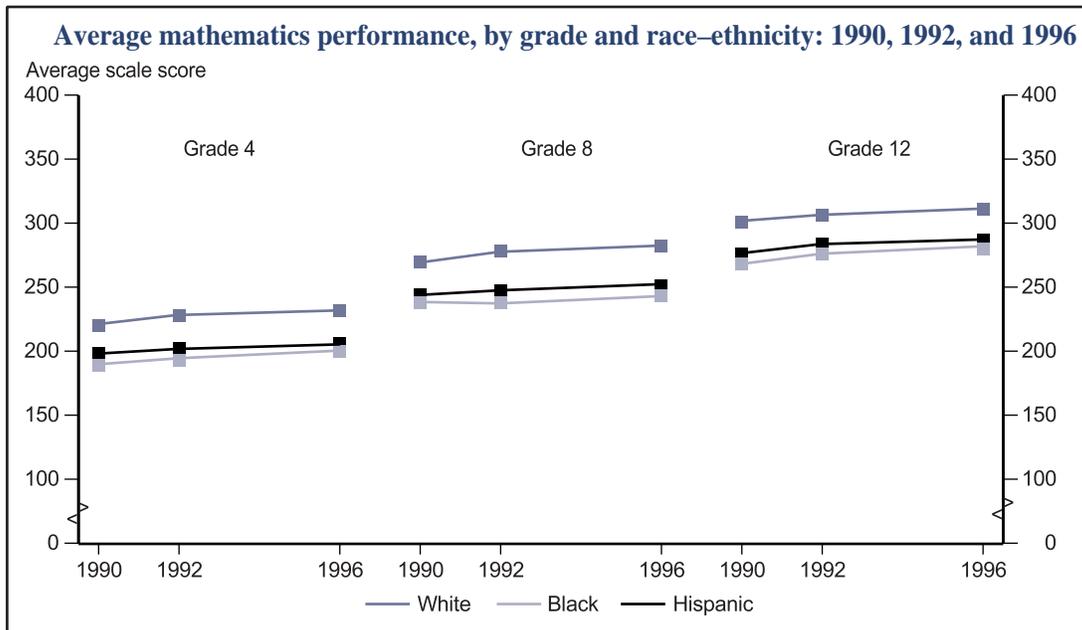
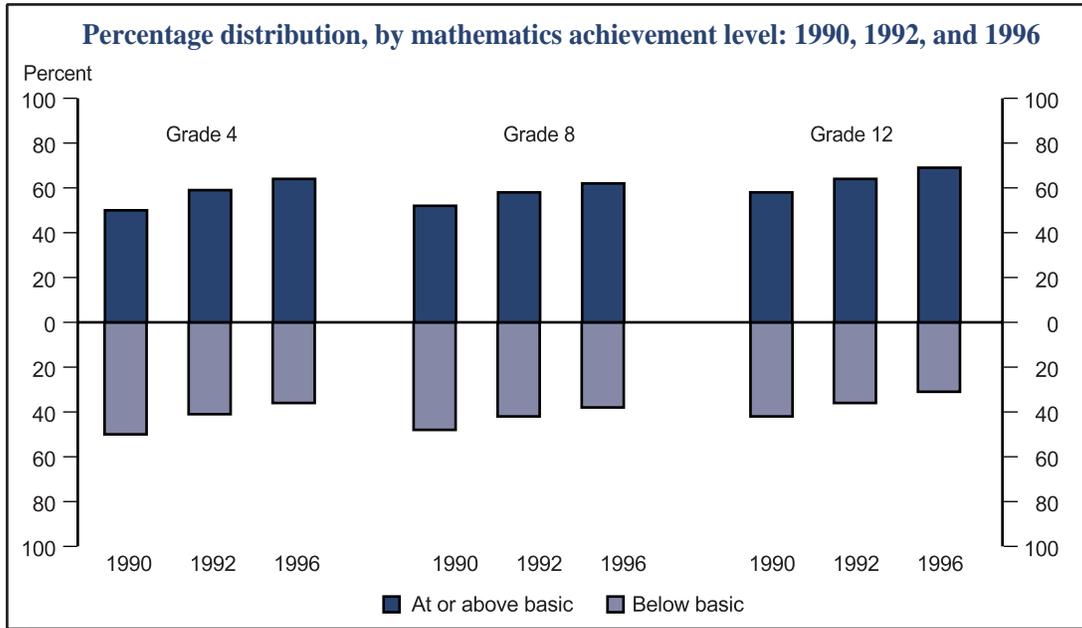
| Selected student characteristics   | Grade 4    |            |            | Grade 8    |            |            | Grade 12   |            |            |
|------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                    | 1990       | 1992       | 1996       | 1990       | 1992       | 1996       | 1990       | 1992       | 1996       |
| <b>Total</b>                       | <b>213</b> | <b>220</b> | <b>224</b> | <b>263</b> | <b>268</b> | <b>272</b> | <b>294</b> | <b>300</b> | <b>304</b> |
| Sex                                |            |            |            |            |            |            |            |            |            |
| Male                               | 214        | 221        | 226        | 263        | 268        | 272        | 297        | 301        | 305        |
| Female                             | 213        | 219        | 222        | 262        | 269        | 272        | 292        | 298        | 303        |
| Race-ethnicity                     |            |            |            |            |            |            |            |            |            |
| White                              | 220        | 228        | 232        | 270        | 278        | 282        | 301        | 306        | 311        |
| Black                              | 189        | 193        | 200        | 238        | 238        | 243        | 268        | 276        | 280        |
| Hispanic                           | 198        | 202        | 206        | 244        | 247        | 251        | 276        | 284        | 287        |
| Asian/Pacific Islander             | 228        | 232        | 232        | 279        | 289        | 274        | 311        | 316        | 319        |
| American Indian/<br>Alaskan Native | 208        | 211        | 216        | 246        | 255        | 264        | —          | —          | 297        |
| Parents' highest education level   |            |            |            |            |            |            |            |            |            |
| Less than high school              | 202        | 205        | 205        | 242        | 249        | 254        | 272        | 279        | 282        |
| Graduated high school              | 209        | 215        | 219        | 255        | 257        | 261        | 283        | 288        | 294        |
| Some education after high school   | 222        | 225        | 232        | 268        | 271        | 279        | 297        | 299        | 302        |
| Graduated college                  | 221        | 227        | 232        | 274        | 281        | 282        | 306        | 311        | 314        |
| Type of school                     |            |            |            |            |            |            |            |            |            |
| Public                             | 212        | 219        | 222        | 262        | 267        | 271        | 294        | 297        | 303        |
| Nonpublic                          | 224        | 228        | 237        | 272        | 281        | 284        | 300        | 314        | 315        |

— Too few sample observations for a reliable estimate.

NOTE: The mathematics performance scale has a range of 0 to 500. See supplemental table 2-1 for detailed explanations of levels.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *NAEP 1996 Mathematics Report Card for the Nation and the States: Findings from the National Assessment of Educational Progress, 1997*.

### Mathematics performance of 4<sup>th</sup>-, 8<sup>th</sup>-, and 12<sup>th</sup>-grade students



NOTE: The mathematics performance scale has a range of 0 to 500. See supplemental table 2-1 for detailed explanations of levels.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *NAEP 1996 Mathematics Report Card for the Nation and the States: Findings from the National Assessment of Educational Progress, 1997*.

## International comparisons of student performance in mathematics and science

*The technical and scientific skills of a nation's work force are a significant component of its economic competitiveness. The Third International Mathematics and Science Study (TIMSS) assessed the mathematics and science performance of students around the world. By comparing the mathematics and science achievement of students in countries around the world, it is possible to monitor the progress of the United States toward the National Education Goal of being first in the world in mathematics and science achievement.*

- Fourth-graders in the United States scored above the 26-nation average in both mathematics and science. In science, only students in Korea outperformed U.S. 4<sup>th</sup>-graders, while in mathematics, U.S. 4<sup>th</sup>-graders outperformed their peers in 12 countries and scored below their peers in 7 countries (see supplemental table 3-1).
  - Eighth-graders in the United States scored above the 41-nation average in science and below the international average in mathematics. In science, U.S. 8<sup>th</sup>-graders outperformed their peers in 15 countries and scored below their peers in 9 countries. In mathematics, 8<sup>th</sup>-graders in 20 countries outperformed 8<sup>th</sup>-graders in the United States.
- Eighth-graders in the United States had higher mathematics scores than their peers in 7 countries (see supplemental table 3-2).
- Compared with students in their last year of secondary school, U. S. 12<sup>th</sup>-graders scored below the 21-nation average in both mathematics and science. In science, U.S. 12<sup>th</sup>-graders scored below students in the final year of secondary school in 11 countries and outperformed students in the final year of secondary school in 2 countries. In mathematics, U. S. students scored below students in the final year of secondary school in 14 countries and outperformed students in the final year of secondary school in 2 countries.

### Average mathematics and science performance scores of students in the final year of secondary school, by sex and country: 1995

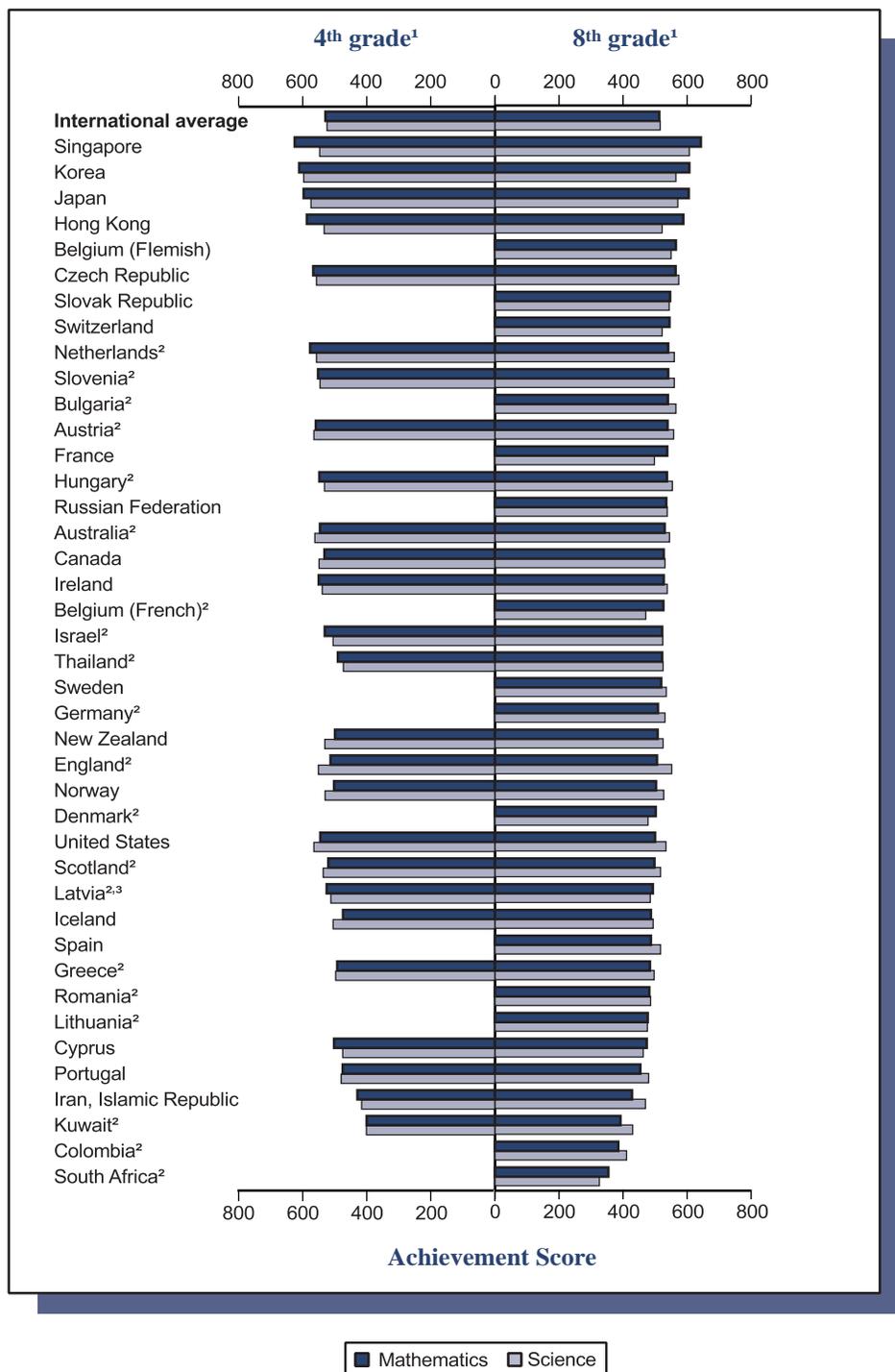
| Country                      | Mathematics |            |            | Science    |            |            |
|------------------------------|-------------|------------|------------|------------|------------|------------|
|                              | Overall     | Male       | Female     | Overall    | Male       | Female     |
| <b>International average</b> | <b>500</b>  | <b>518</b> | <b>485</b> | <b>500</b> | <b>521</b> | <b>482</b> |
| Netherlands*                 | 560         | 585        | 533        | 558        | 582        | 532        |
| Sweden                       | 552         | 573        | 531        | 559        | 585        | 534        |
| Denmark*                     | 547         | 575        | 523        | 509        | 532        | 490        |
| Switzerland                  | 540         | 555        | 522        | 523        | 540        | 500        |
| Iceland*                     | 534         | 558        | 514        | 549        | 572        | 530        |
| Norway*                      | 528         | 555        | 501        | 544        | 574        | 513        |
| France*                      | 523         | 544        | 506        | 487        | 508        | 468        |
| Australia*                   | 522         | 540        | 510        | 527        | 547        | 513        |
| New Zealand                  | 522         | 536        | 507        | 529        | 543        | 515        |
| Canada*                      | 519         | 537        | 504        | 532        | 550        | 518        |
| Austria*                     | 518         | 545        | 503        | 520        | 554        | 501        |
| Slovenia*                    | 512         | 535        | 490        | 517        | 541        | 494        |
| Germany*                     | 495         | 509        | 480        | 497        | 514        | 478        |
| Hungary                      | 483         | 485        | 481        | 471        | 484        | 455        |
| Italy*                       | 476         | 490        | 464        | 475        | 495        | 458        |
| Russian Federation*          | 471         | 488        | 460        | 481        | 510        | 463        |
| Lithuania*                   | 469         | 485        | 461        | 461        | 481        | 450        |
| Czech Republic               | 466         | 488        | 443        | 487        | 512        | 460        |
| United States*               | 461         | 466        | 456        | 480        | 492        | 469        |
| Cyprus*                      | 446         | 454        | 439        | 448        | 459        | 439        |
| South Africa*                | 356         | 365        | 348        | 349        | 367        | 333        |

\* Country did not satisfy one or more of the sampling or other guidelines. See the supplemental note to this indicator for detailed explanations.

NOTE: Nations are sorted from highest to lowest by average mathematics score.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Pursuing Excellence: A Study of U.S. Twelfth-Grade Mathematics and Science Achievement in International Context*, 1998.

## Average mathematics and science performance scores, by grade and country: 1995



<sup>1</sup> Fourth or 8<sup>th</sup> grade in most nations.

<sup>2</sup> Country did not satisfy one or more of the sampling or other guidelines for either the 4<sup>th</sup>- or 8<sup>th</sup>-grade assessment. See the supplemental note to this indicator for detailed explanations.

<sup>3</sup> Latvian-speaking schools.

NOTE: Nations are sorted from highest to lowest average mathematics scores for 8<sup>th</sup> grade. Only 26 nations participated at the 4<sup>th</sup>-grade level of the 41 nations participating at the 8<sup>th</sup>-grade level.

SOURCE: International Association for the Evaluation of Educational Achievement, TIMSS International Study Center, *Mathematics Achievement in the Primary School Years, Science Achievement in the Primary School Years, IEA's Third International Mathematics and Science Study, 1997; Mathematics Achievement in the Middle School Years, Science Achievement in the Middle School Years, IEA's Third International Mathematics and Science Study, 1996.*

## Trends in the reading performance of 9-, 13-, and 17-year-olds

*Reading ability is essential to students' educational progress. Since the early 1970s, the National Assessment of Educational Progress (NAEP) has assessed the trends in students' reading performance. These trends provide a picture of how student performance in reading has changed over time, specifically among students of different ages and racial-ethnic groups.*

- For 9- and 13-year-olds, average reading scores improved slightly between 1971 and 1980 and showed little or no change between 1980 and 1996. Scores for 17-year-olds have remained relatively consistent since 1971.
- Females outscored males in reading performance across all age groups.
- During these periods, reading scores of black and Hispanic students were lower than those of white students for all age groups. However, the black-white score gap, in particular, changed over time. For all age groups, the gap decreased between 1971 and 1988, yet showed no significant change between 1988 and 1996 for 9- and 17-year-olds and increased for 13-year-olds.

### Average reading performance (scale score), by sex and age: 1971-96

| Year | Total |        |        | Male  |        |        | Female |        |        |
|------|-------|--------|--------|-------|--------|--------|--------|--------|--------|
|      | Age 9 | Age 13 | Age 17 | Age 9 | Age 13 | Age 17 | Age 9  | Age 13 | Age 17 |
| 1971 | 208   | 255    | 285    | 201   | 250    | 279    | 214    | 261    | 291    |
| 1975 | 210   | 256    | 286    | 204   | 250    | 280    | 216    | 262    | 291    |
| 1980 | 215   | 259    | 286    | 210   | 254    | 282    | 220    | 263    | 289    |
| 1984 | 211   | 257    | 289    | 208   | 253    | 284    | 214    | 262    | 294    |
| 1988 | 212   | 258    | 290    | 208   | 252    | 286    | 216    | 263    | 294    |
| 1990 | 209   | 257    | 290    | 204   | 251    | 284    | 215    | 263    | 297    |
| 1992 | 211   | 260    | 290    | 206   | 254    | 284    | 215    | 265    | 296    |
| 1994 | 211   | 258    | 288    | 207   | 251    | 282    | 215    | 266    | 295    |
| 1996 | 212   | 259    | 287    | 207   | 253    | 280    | 218    | 265    | 294    |

### Average reading performance (scale score), by race-ethnicity and age: 1971-96

| Year | White |        |        | Black |        |        | Hispanic |        |        |
|------|-------|--------|--------|-------|--------|--------|----------|--------|--------|
|      | Age 9 | Age 13 | Age 17 | Age 9 | Age 13 | Age 17 | Age 9    | Age 13 | Age 17 |
| 1971 | 214   | 261    | 291    | 170   | 222    | 239    | —        | —      | —      |
| 1975 | 217   | 262    | 293    | 181   | 226    | 241    | 183      | 232    | 252    |
| 1980 | 221   | 264    | 293    | 189   | 233    | 243    | 190      | 237    | 261    |
| 1984 | 218   | 263    | 295    | 186   | 236    | 264    | 187      | 240    | 268    |
| 1988 | 218   | 261    | 295    | 189   | 243    | 274    | 194      | 240    | 271    |
| 1990 | 217   | 262    | 297    | 182   | 242    | 267    | 189      | 238    | 275    |
| 1992 | 218   | 266    | 297    | 185   | 238    | 261    | 192      | 239    | 271    |
| 1994 | 218   | 265    | 296    | 185   | 234    | 266    | 186      | 235    | 263    |
| 1996 | 220   | 267    | 294    | 190   | 236    | 265    | 194      | 240    | 265    |

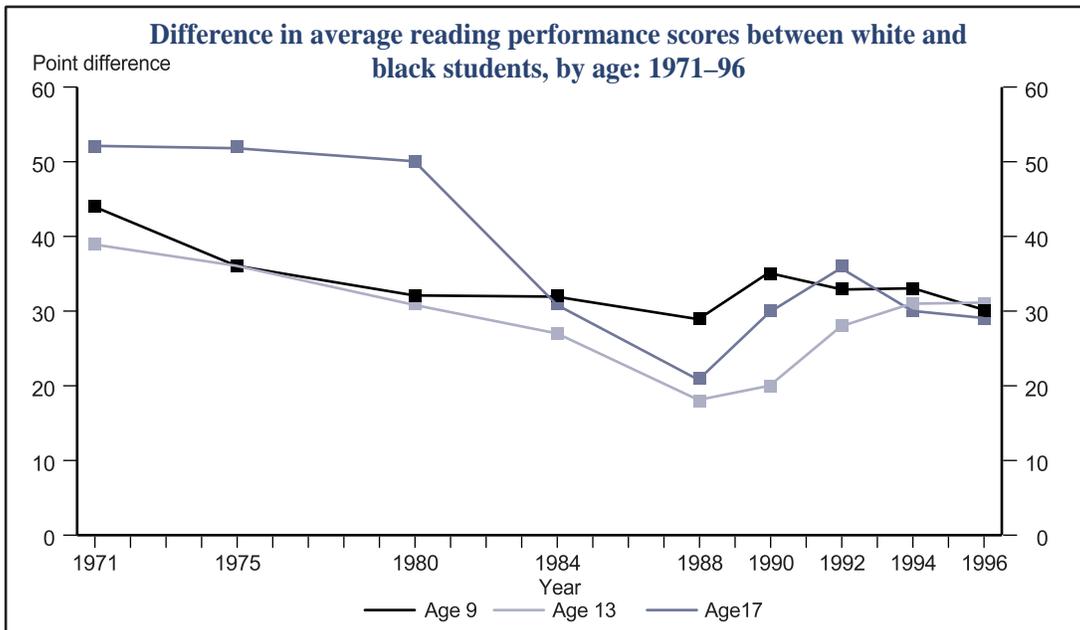
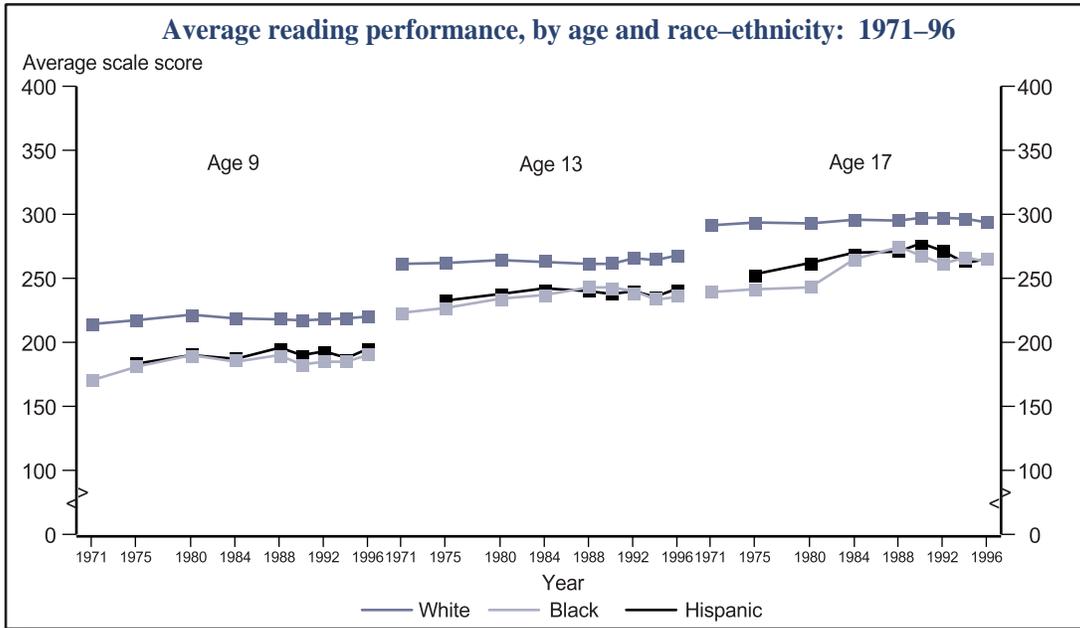
— Not available.

NOTE: The reading performance scale has a range from 0 to 500. See supplemental table 4-1 for detailed explanations of levels. See the supplemental note to *Indicator 5* for a description of the differences between the main NAEP reading assessment, on which *Indicator 5* is

based, and the long-term trend NAEP assessment, on which this indicator is based.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *NAEP 1996 Trends in Academic Progress*, revised 1998.

### Trends in reading performance



NOTE: The reading performance scale has a range from 0 to 500. See supplemental table 4-1 for detailed explanations of levels. See the supplemental note to *Indicator 5* for a description of the differences between the main NAEP reading assessment, on which *Indicator 5* is based, and the long-term trend NAEP assessment, on which this indicator is based.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *NAEP 1996 Trends in Academic Progress*, revised 1998.

## Reading performance of 4<sup>th</sup>-, 8<sup>th</sup>-, and 12<sup>th</sup>-grade students

Since the early 1970s, the National Assessment of Educational Progress (NAEP) has assessed long-term trends in basic reading competencies. Beginning in 1992, and continuing in 1994 and 1998, a new “main NAEP” reading assessment was administered to reflect changing instructional practices in classrooms and standards of learning based on current curriculum frameworks. The data used in this indicator come from this new assessment, the purpose of which is to assess reading for literacy experience, reading to gain information, and reading to perform a task.

- Between 1992 and 1998, average reading performance scores remained relatively stable for 4<sup>th</sup>-grade students and increased slightly for 8<sup>th</sup>-grade students. The reading performance scores for 12<sup>th</sup>-grade students decreased between 1992 and 1994, but rose again in 1998. For both 8<sup>th</sup>- and 12<sup>th</sup>-grade students, the total percentage of students scoring below the basic level decreased between 1994 and 1998, while for 4<sup>th</sup>-grade students, the percentage scoring below this level remained the same (see supplemental tables 5-1 and 5-2).
- In all three years, female students outperformed male students in reading performance at the 4<sup>th</sup>-, 8<sup>th</sup>-, and 12<sup>th</sup>-grade levels.
- Average reading scores for white students were higher than those for black and Hispanic students at all three grade levels for all three years. The gap in scores between black and white students remained similar between 1992 and 1998 for all grades.
- Reading scores also varied by type of school and location. In all three years, on average, students attending nonpublic schools consistently scored higher than students attending public schools at the 4<sup>th</sup>-, 8<sup>th</sup>-, and 12<sup>th</sup>-grade levels. In 1998, 4<sup>th</sup>- and 8<sup>th</sup>-grade students in schools located in central cities generally scored lower than their peers in urban fringe or rural locations, while at the 12<sup>th</sup>-grade level, scores were generally the same for students in different types of locations.

### Average reading performance (scale score), by grade and selected student characteristics: 1992, 1994, and 1998

| Selected student characteristics   | Grade 4    |            |            | Grade 8    |            |            | Grade 12   |            |            |
|------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                    | 1992       | 1994       | 1998       | 1992       | 1994       | 1998       | 1992       | 1994       | 1998       |
| <b>Total</b>                       | <b>217</b> | <b>214</b> | <b>217</b> | <b>260</b> | <b>260</b> | <b>264</b> | <b>292</b> | <b>287</b> | <b>291</b> |
| Sex                                |            |            |            |            |            |            |            |            |            |
| Male                               | 213        | 209        | 214        | 254        | 252        | 257        | 287        | 280        | 283        |
| Female                             | 221        | 220        | 220        | 267        | 267        | 270        | 297        | 294        | 298        |
| Race-ethnicity                     |            |            |            |            |            |            |            |            |            |
| White                              | 225        | 224        | 227        | 267        | 268        | 272        | 298        | 294        | 298        |
| Black                              | 193        | 187        | 194        | 238        | 237        | 243        | 273        | 265        | 270        |
| Hispanic                           | 201        | 191        | 196        | 241        | 240        | 244        | 278        | 270        | 275        |
| Asian/Pacific Islander             | 214        | 229        | 225        | 270        | 268        | 271        | 292        | 280        | 289        |
| American Indian/<br>Alaskan Native | 207        | 201        | 202        | 251        | 251        | 248        | —          | 275        | 276        |
| Type of school                     |            |            |            |            |            |            |            |            |            |
| Public                             | 215        | 212        | 215        | 258        | 257        | 261        | 290        | 286        | 289        |
| Nonpublic                          | 232        | 231        | 233        | 278        | 279        | 281        | 308        | 301        | 303        |
| Type of location                   |            |            |            |            |            |            |            |            |            |
| Central city                       | 210        | 207        | 211        | 253        | 257        | 258        | 290        | 288        | 290        |
| Urban fringe/<br>large town        | 221        | 221        | 222        | 265        | 262        | 268        | 294        | 289        | 293        |
| Rural/small town                   | 219        | 214        | 219        | 261        | 259        | 264        | 291        | 285        | 289        |

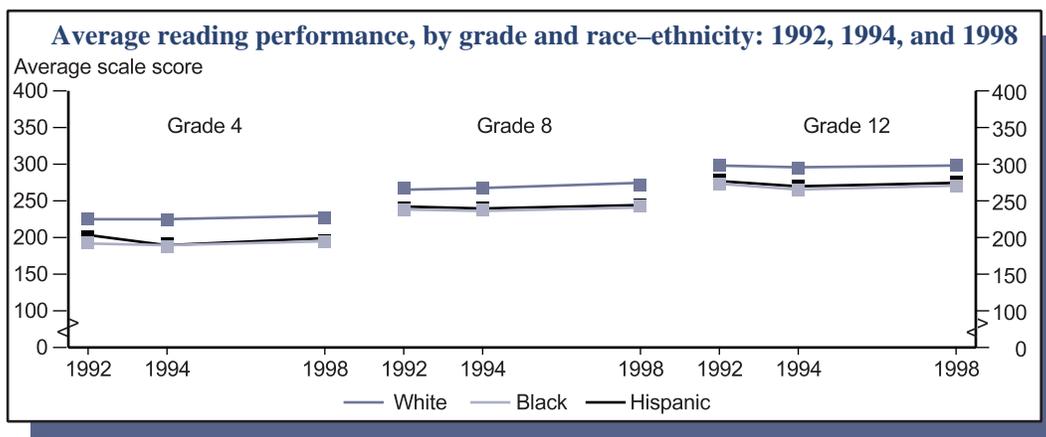
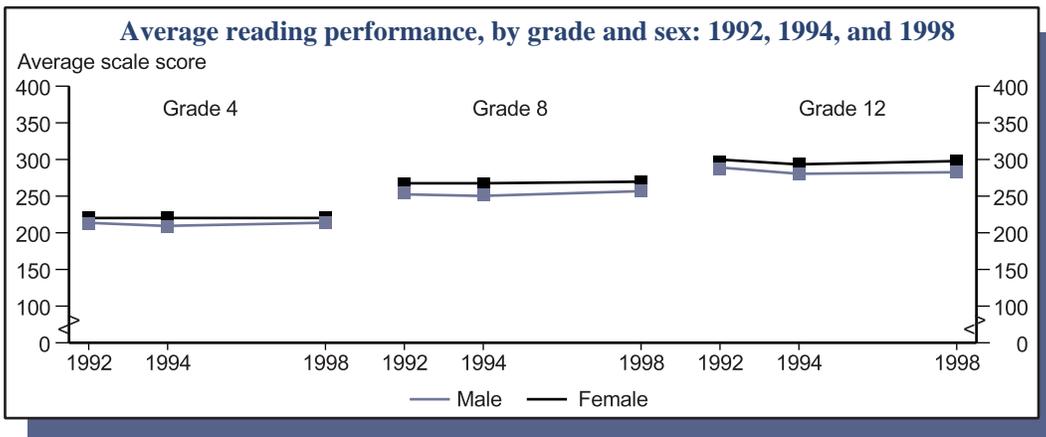
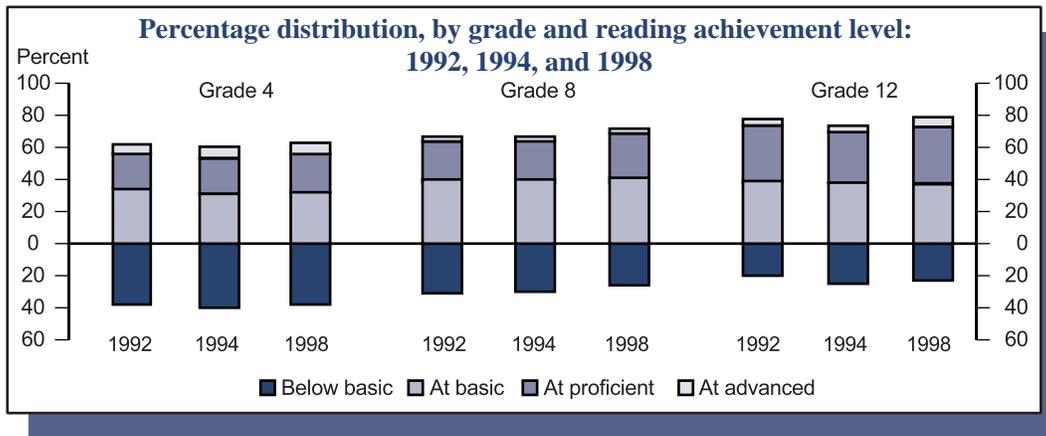
— Not available.

NOTE: The reading performance scale has a range from 0 to 500. See supplemental table 5-1 for detailed explanations of levels. See the supplemental note to this indicator for a description of the differences between the main NAEP reading assessment, on which this indicator is

based, and the long-term trend NAEP assessment, on which *Indicator 4* is based.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *NAEP 1998 Reading, A Report Card for the Nation and the States, 1999*.

### Average reading performance



NOTE: The reading performance scale has a range from 0 to 500. See supplemental table 5-1 for detailed explanations of levels.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *NAEP 1998 Reading, A Report Card for the Nation and the States, 1999*.

## Trends in the writing performance of 4<sup>th</sup>-, 8<sup>th</sup>-, and 11<sup>th</sup>-grade students

*Effective writing skills are important in all stages of life. In business, as well as in school, individuals often must convey complex ideas and information in a clear, succinct manner. In the business, good writing skills are essential for accurately communicating information, influencing others, and documenting tasks. In school, inadequate writing skills can inhibit achievement across the curriculum, while good writing can help students analyze information and convey ideas.*

- Average writing performance scores remained relatively stable for 4<sup>th</sup>-grade students between 1984 and 1996. In contrast, scores for 8<sup>th</sup>-grade students declined between 1984 and 1990, increased in 1992, and then dropped back to their original level. The average writing scale score for 11<sup>th</sup>-grade students was slightly lower in 1996 than in 1984.
- In general, females outscored males in writing performance at all grade levels since 1984.
- Scores for black and Hispanic students remained relatively unchanged since 1984 at all grade levels. Although scores dropped slightly for white 11<sup>th</sup>-grade students between 1984 and 1996, white students continued to outscore black and Hispanic students at all grade levels.
- In 1996, 83 percent of 11<sup>th</sup>-grade students could write beginning, focused, clear responses (level 250); 31 percent were generally able to write complete, sufficient responses (level 300); and 2 percent provided effective, coherent responses (level 350; see supplemental tables 6-1 and 6-2).
- In 1996, average writing scale scores for 4<sup>th</sup>-grade students ranged from 142 at the 5<sup>th</sup> percentile to 268 at the 95<sup>th</sup> percentile. At the 8<sup>th</sup>-grade level, the median score (50<sup>th</sup> percentile) was 264, indicating that the highest scoring 4<sup>th</sup>-grade students achieved approximately the same performance as the average 8<sup>th</sup>-grade student (see supplemental table 6-3).

### Average writing performance (scale score), by sex and grade: 1984–96

| Year | Total   |         |          | Male    |         |          | Female  |         |          |
|------|---------|---------|----------|---------|---------|----------|---------|---------|----------|
|      | Grade 4 | Grade 8 | Grade 11 | Grade 4 | Grade 8 | Grade 11 | Grade 4 | Grade 8 | Grade 11 |
| 1984 | 204     | 267     | 290      | 201     | 258     | 281      | 208     | 276     | 299      |
| 1988 | 206     | 264     | 291      | 199     | 254     | 282      | 213     | 274     | 299      |
| 1990 | 202     | 257     | 287      | 195     | 246     | 276      | 209     | 268     | 298      |
| 1992 | 207     | 274     | 287      | 198     | 264     | 279      | 216     | 285     | 296      |
| 1994 | 205     | 265     | 285      | 196     | 254     | 276      | 214     | 278     | 293      |
| 1996 | 207     | 264     | 283      | 200     | 251     | 275      | 214     | 276     | 292      |

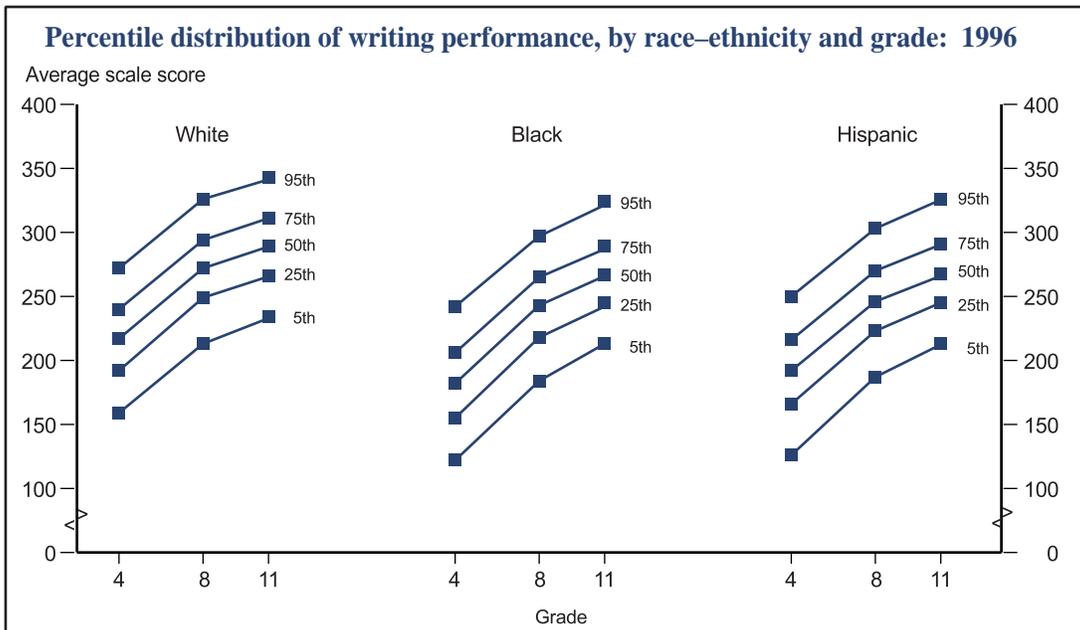
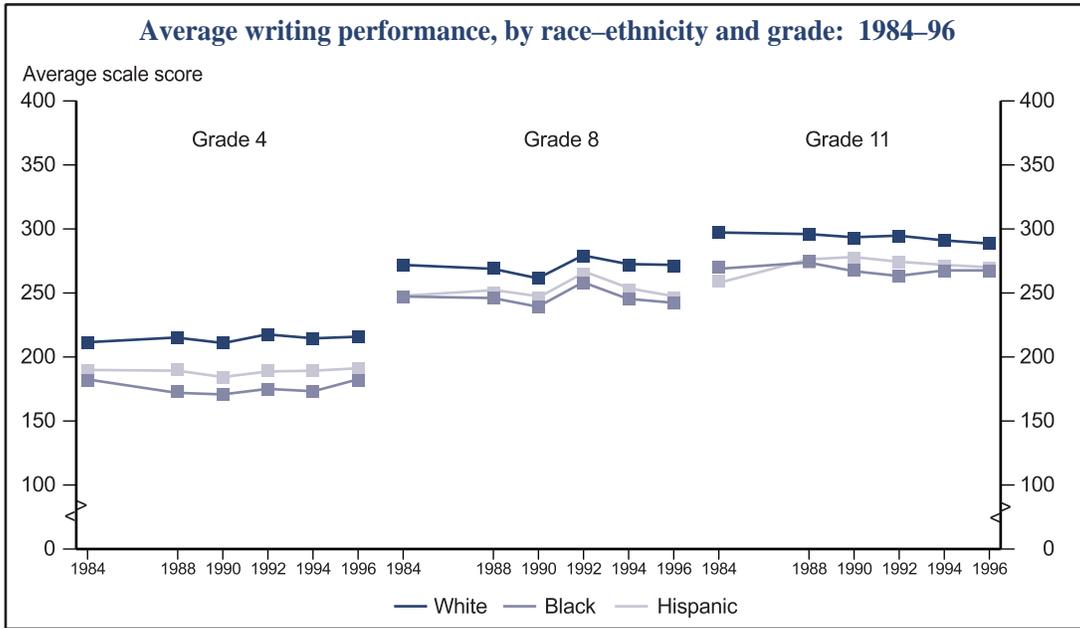
### Average writing performance (scale score), by race-ethnicity and grade: 1984–96

| Year | White   |         |          | Black   |         |          | Hispanic |         |          |
|------|---------|---------|----------|---------|---------|----------|----------|---------|----------|
|      | Grade 4 | Grade 8 | Grade 11 | Grade 4 | Grade 8 | Grade 11 | Grade 4  | Grade 8 | Grade 11 |
| 1984 | 211     | 272     | 297      | 182     | 247     | 270      | 189      | 247     | 259      |
| 1988 | 215     | 269     | 296      | 173     | 246     | 275      | 190      | 250     | 274      |
| 1990 | 211     | 262     | 293      | 171     | 239     | 268      | 184      | 246     | 277      |
| 1992 | 217     | 279     | 294      | 175     | 258     | 263      | 189      | 265     | 274      |
| 1994 | 214     | 272     | 291      | 173     | 245     | 267      | 189      | 252     | 271      |
| 1996 | 216     | 271     | 289      | 182     | 242     | 267      | 191      | 246     | 269      |

NOTE: The writing performance scale has a range from 0 to 500. See supplemental table 6-1 for detailed explanations of levels.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *NAEP 1996 Trends in Academic Progress*, revised 1998.

### Average writing performance



NOTE: The writing performance scale has a range from 0 to 500. See supplemental table 6-1 for detailed explanations of levels.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *NAEP 1996 Trends in Academic Progress*, revised 1998.

## Arts performance of 8<sup>th</sup>-grade students

*Gaining experience in the visual arts, music, and theatre are all key components of a child's development and education. Through exposure to the arts, students are given opportunities to be creative, disciplined, and persistent; to develop skills; and to demonstrate these new skills to their teachers, parents, and peers. The purpose of the 1997 National Assessment of Educational Progress (NAEP) Arts Education Assessment was to provide a comprehensive picture of the arts performance of 8<sup>th</sup>-grade students, assessing the extent to which students are skilled in creating, performing, and responding to the visual arts, music, and theatre.*

- In 1997, 8<sup>th</sup>-grade students' performance in the arts varied by certain student background characteristics. For example, females consistently outscored males in all categories of the NAEP arts assessment. Among racial-ethnic groups, whites outperformed blacks and Hispanics on all scales except for the creating score in music. In addition, students whose parents were college graduates scored higher on all arts assessment scales than those whose parents' highest level of education was a high school diploma or less.
- There appear to be no consistent relationships between performance in the arts and many characteristics of an arts education, such as frequency of instruction, curriculum availability, or staff certification. However, the type of space and facilities in which the arts were taught in schools was related to arts performance. Students in schools that taught music in rooms specifically dedicated to the subject scored higher in music creating and performing than their peers who took music in schools with no dedicated space for instruction (see supplemental table 7-1).

### Average music, theatre, and visual arts performance percentage scores and scale scores of 8<sup>th</sup>-grade students, by selected student characteristics: 1997

| Selected student characteristics | Music                    |                            |                    | Theatre*                            |                    | Visual arts              |                    |
|----------------------------------|--------------------------|----------------------------|--------------------|-------------------------------------|--------------------|--------------------------|--------------------|
|                                  | Creating (0-100 percent) | Performing (0-100 percent) | Responding (0-300) | Creating/performing (0-100 percent) | Responding (0-300) | Creating (0-100 percent) | Responding (0-300) |
| <b>Total</b>                     | <b>34</b>                | <b>34</b>                  | <b>150</b>         | <b>49</b>                           | <b>150</b>         | <b>43</b>                | <b>150</b>         |
| Sex                              |                          |                            |                    |                                     |                    |                          |                    |
| Male                             | 32                       | 27                         | 140                | 46                                  | 140                | 42                       | 146                |
| Female                           | 37                       | 40                         | 160                | 52                                  | 158                | 45                       | 154                |
| Race-ethnicity                   |                          |                            |                    |                                     |                    |                          |                    |
| White                            | 36                       | 36                         | 158                | 52                                  | 159                | 46                       | 159                |
| Black                            | 34                       | 30                         | 130                | 39                                  | 120                | 37                       | 124                |
| Hispanic                         | 29                       | 24                         | 127                | 44                                  | 139                | 38                       | 128                |
| Asian                            | 31                       | —                          | 152                | —                                   | —                  | 45                       | 153                |
| Type of school                   |                          |                            |                    |                                     |                    |                          |                    |
| Public                           | 34                       | 34                         | 149                | 48                                  | 146                | 43                       | 148                |
| Nonpublic                        | 37                       | 33                         | 158                | —                                   | —                  | 44                       | 167                |
| Parents' highest education level |                          |                            |                    |                                     |                    |                          |                    |
| Did not finish high school       | 24                       | 21                         | 129                | 42                                  | 131                | 36                       | 125                |
| Graduated high school            | 29                       | 29                         | 139                | 42                                  | 130                | 41                       | 138                |
| Some education after high school | 35                       | 34                         | 150                | 49                                  | 153                | 44                       | 153                |
| Graduated college                | 39                       | 39                         | 159                | 52                                  | 157                | 46                       | 158                |

— Too few sample observations for a reliable estimate.

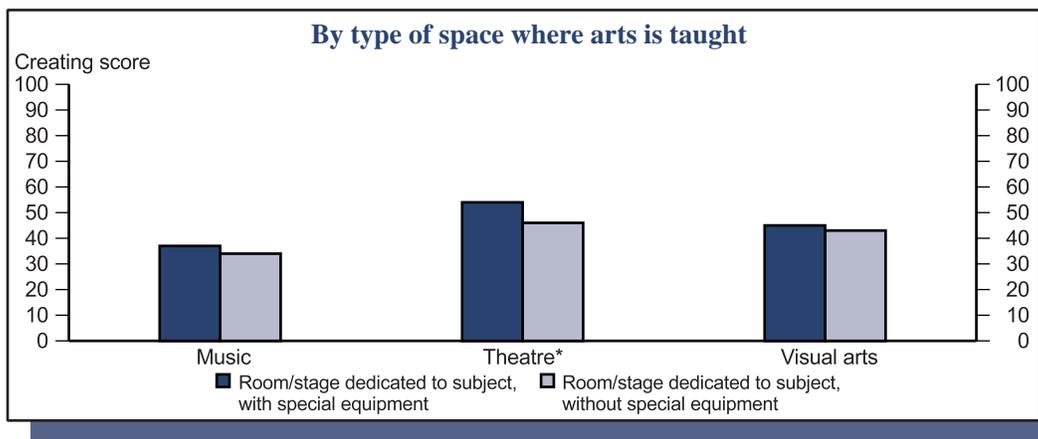
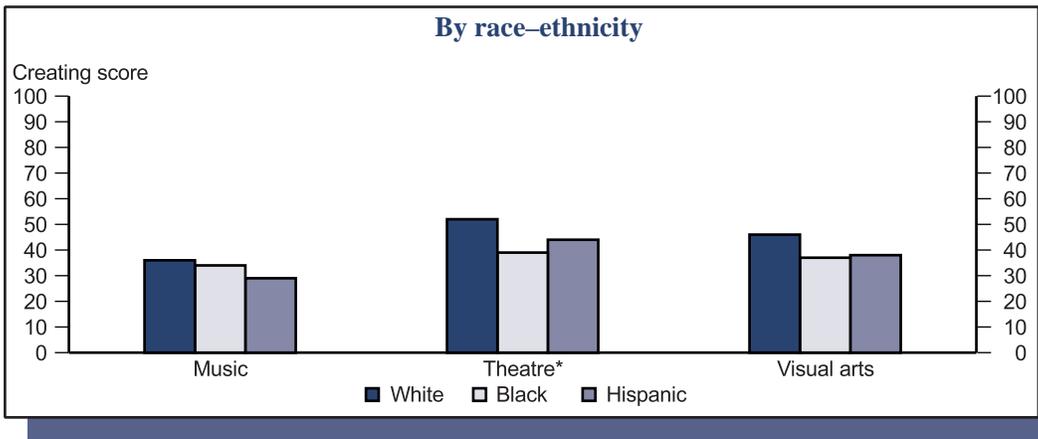
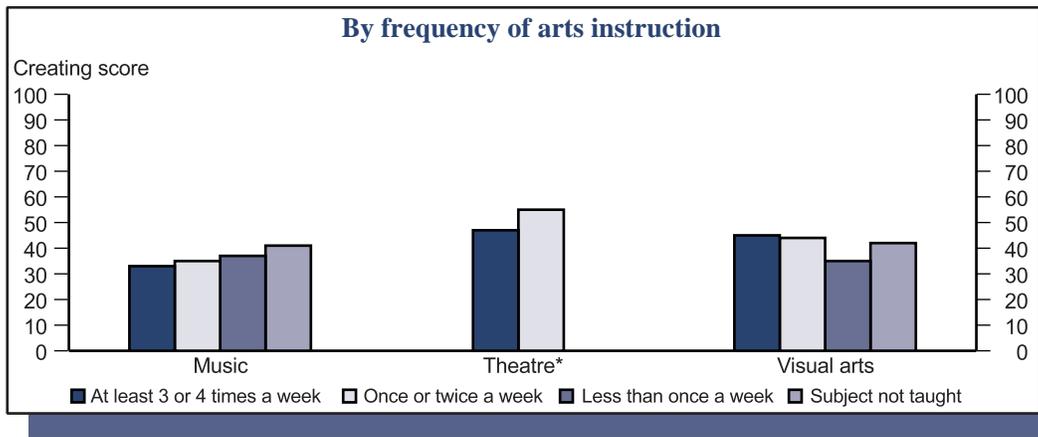
\* The theatre assessment was administered to a targeted sample of students in schools with theatre instructional programs who had taken at least 30 hours of theatre classes.

NOTE: Students were assessed in the arts on three separate scales: Responding, Creating, and Performing. Because sampling and scoring procedures varied by arts subject and arts performance type,

comparisons cannot be made across assessments. See the supplemental note to this indicator for a detailed explanation of the design of the NAEP Arts Education Assessment, including definitions for "Responding," "Creating," and "Performing."

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *The NAEP 1997 Arts Report Card*, 1998.

### Average music, theatre, and visual arts creating score of 8<sup>th</sup>-grade students, by selected instructional characteristics: 1997



\* The theatre assessment was administered to a targeted sample of students in schools with theatre instructional programs. For measuring the frequency of arts instruction, there were too few sample observations for a reliable estimate of "less than once a week" and "subject not taught." The "creating" scale for theatre is defined as creating/performing.

NOTE: Students were assessed in the arts on three separate scales: Responding, Creating, and Performing. Because sampling and scoring procedures varied by arts subject and arts proficiency type, comparisons

cannot be made across assessments. See the supplemental note to this indicator for a detailed explanation regarding the design of the NAEP Arts Education Assessment, including definitions for "Responding," "Creating," and "Performing."

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *The NAEP 1997 Arts Report Card*, 1998.

## International comparisons of adult literacy

*Literacy is viewed as one of the fundamental tools necessary for successful economic performance in industrialized societies. The International Adult Literacy Survey (IALS) assessed adult literacy in 12 countries. The five literacy levels expressed along three scales—prose, document, and quantitative—measure a range of literacy, from the basic ability to locate information within simple text to the ability to understand and use printed information in daily activities, at home, at work, and in the community. As society becomes more complex and demands for literacy in the job market continue to change, concern about adults' ability to use written information to function in society continues to increase.*

- Approximately one-fifth of adults in the United States scored at or above level 4 on the prose, document, and quantitative literacy scales. Among the 11 other countries that participated in the IALS, the only countries exceeding the United States in the percentage of adults scoring at the highest levels of literacy were Sweden (on all three scales) and Canada (on the document scale).
- One-quarter or less of adults in the United States performed at level 1 on any of the three scales. Only Poland had a greater percentage of adults scoring at this lowest literacy level. Canada, Ireland, New Zealand, and the United Kingdom had similar percentages of adults scoring at the lowest level of literacy, but Germany, the Netherlands, and Sweden had lower percentages on all three scales.
- The proportion of U. S. adults scoring at level 3 or higher on the document scale increased at each level of education—from 17 percent for those with less than a high school education to 80 percent for those with a college degree. In all countries except Poland, at least three-quarters of adults who had a college education scored at level 3 or above (see supplemental table 8-1).
- Adults in the United States who had not completed a high school program were no more likely than their counterparts in other countries with similar education levels to perform at level 3 or above on the document scale. At the college level, only Belgium had a higher percentage of college graduates scoring at or above level 3 than did the United States, and only Poland had a smaller percentage (see supplemental table 8-1).

### Percentage distribution of adults ages 16–65 scoring at each literacy level, by literacy scale and country: 1994 and 1995

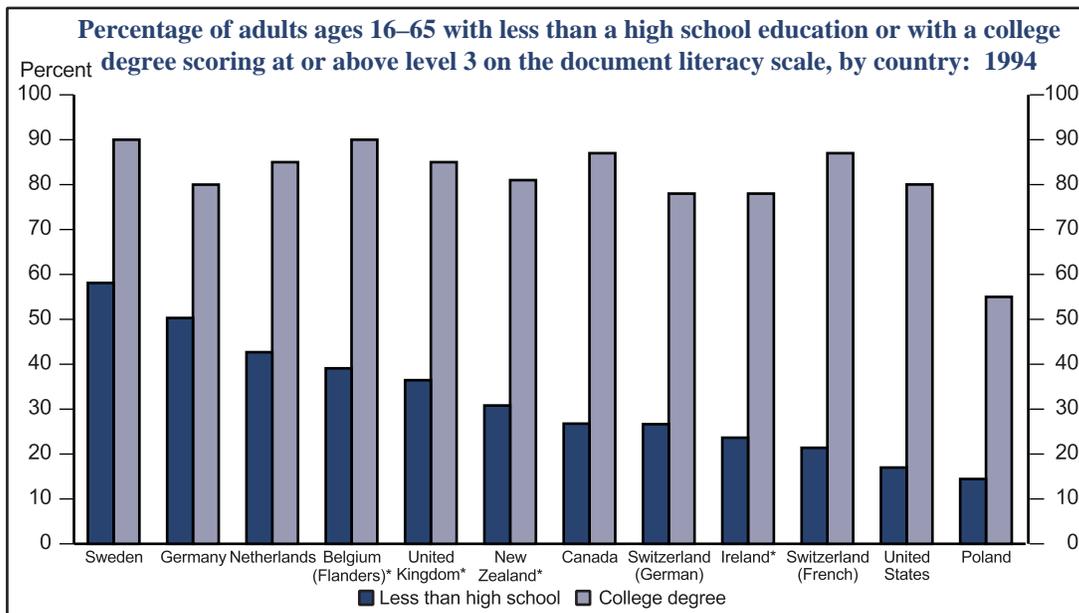
| Country              | Prose scale |         |         |           | Document scale |         |         |           | Quantitative scale |         |         |           |
|----------------------|-------------|---------|---------|-----------|----------------|---------|---------|-----------|--------------------|---------|---------|-----------|
|                      | Level 1     | Level 2 | Level 3 | Level 4/5 | Level 1        | Level 2 | Level 3 | Level 4/5 | Level 1            | Level 2 | Level 3 | Level 4/5 |
| Belgium (Flanders)*  | 18.6        | 29.0    | 37.4    | 15.0      | 15.0           | 25.7    | 41.5    | 17.5      | 16.5               | 23.3    | 37.0    | 23.2      |
| Canada               | 16.6        | 24.8    | 36.4    | 22.3      | 17.9           | 23.7    | 32.7    | 25.7      | 16.6               | 25.6    | 34.7    | 23.1      |
| Germany              | 13.8        | 35.3    | 37.3    | 13.6      | 9.6            | 32.0    | 39.5    | 18.9      | 7.0                | 26.1    | 43.6    | 23.4      |
| Ireland*             | 22.6        | 30.6    | 33.7    | 13.2      | 25.6           | 32.0    | 31.5    | 10.9      | 24.9               | 28.8    | 30.3    | 15.9      |
| Netherlands          | 10.4        | 29.4    | 44.7    | 15.5      | 10.3           | 25.5    | 44.5    | 19.7      | 10.0               | 25.7    | 44.1    | 20.3      |
| New Zealand*         | 18.2        | 28.5    | 34.5    | 18.8      | 21.1           | 29.6    | 32.5    | 16.8      | 20.3               | 28.9    | 33.9    | 16.9      |
| Poland               | 42.7        | 34.3    | 19.2    | 3.7       | 45.4           | 30.3    | 18.5    | 5.8       | 39.0               | 30.6    | 23.2    | 7.2       |
| Sweden               | 7.2         | 20.7    | 39.8    | 32.2      | 6.3            | 19.2    | 38.8    | 35.7      | 6.6                | 19.1    | 38.4    | 35.9      |
| Switzerland (French) | 18.5        | 34.3    | 37.7    | 9.6       | 16.4           | 29.6    | 37.6    | 16.3      | 12.8               | 25.4    | 42.7    | 19.1      |
| Switzerland (German) | 19.5        | 34.2    | 37.1    | 9.3       | 18.4           | 27.5    | 36.9    | 17.3      | 14.1               | 25.0    | 41.9    | 19.0      |
| United Kingdom*      | 21.6        | 30.1    | 32.6    | 15.7      | 23.1           | 27.6    | 30.5    | 18.8      | 23.4               | 27.6    | 30.5    | 18.5      |
| United States        | 20.8        | 24.4    | 32.8    | 22.0      | 23.6           | 25.0    | 31.5    | 19.9      | 21.0               | 24.0    | 31.6    | 23.5      |

\* Data are for 1995.

NOTE: The individuals who performed at level 1 demonstrated the lowest literacy proficiency, while those at level 5 displayed the highest literacy proficiency. See the supplemental note to this indicator for a description of the literacy scales and levels. Details may not add to 100.0 due to rounding.

SOURCE: Organisation for Economic Co-operation and Development, *International Adult Literacy Survey*, unpublished tabulations, 1994, 1995.

### International comparisons of adult literacy



**Countries with a lesser, equal, or greater percentage of adults scoring at or above level 4 compared with the United States, by literacy domain**

| Literacy domain      |                      |                      |
|----------------------|----------------------|----------------------|
| Prose                | Document             | Quantitative         |
| Sweden               | Sweden               | Sweden               |
| Canada               | Canada               | <b>United States</b> |
| <b>United States</b> | <b>United States</b> | Germany              |
| New Zealand          | Netherlands          | Belgium              |
| United Kingdom       | Germany              | Canada               |
| Netherlands          | United Kingdom       | Netherlands          |
| Belgium              | Belgium              | Switzerland (F)      |
| Germany              | Switzerland (G)      | Switzerland (G)      |
| Ireland              | New Zealand          | United Kingdom       |
| Switzerland (F)      | Switzerland (F)      | New Zealand          |
| Switzerland (G)      | Ireland              | Ireland              |
| Poland               | Poland               | Poland               |

NOTE: Countries that are shaded do not differ significantly from the United States. Countries appearing above the shaded area had a higher percentage of adults in levels 4 and 5 than the United States, and countries appearing below the shaded area had a lower percentage.

**Countries with a lesser, equal, or greater percentage of adults scoring at level 1 compared with the United States, by literacy domain**

| Literacy domain      |                      |                      |
|----------------------|----------------------|----------------------|
| Prose                | Document             | Quantitative         |
| Sweden               | Sweden               | Sweden               |
| Netherlands          | Germany              | Germany              |
| Germany              | Netherlands          | Netherlands          |
| Canada               | Belgium              | Switzerland (F)      |
| New Zealand          | Switzerland (F)      | Switzerland (G)      |
| Switzerland (F)      | Switzerland (G)      | <b>Belgium</b>       |
| Belgium              | Canada               | Canada               |
| Switzerland (G)      | New Zealand          | New Zealand          |
| <b>United States</b> | United Kingdom       | <b>United States</b> |
| United Kingdom       | <b>United States</b> | United Kingdom       |
| Ireland              | Ireland              | Ireland              |
| Poland               | Poland               | Poland               |

NOTE: Countries that are shaded do not differ significantly from the United States. Countries appearing above the shaded area had a lower percentage of adults in level 1 than the United States, and countries appearing below the shaded area had a higher percentage.

\* Data are for 1995.

NOTE: The individuals who performed at level 1 demonstrated the lowest literacy proficiency, while those at level 5 displayed the highest literacy proficiency. See the supplemental note to this indicator for a description of the literacy scales and scores.

SOURCE: Organisation for Economic Co-operation and Development, *International Adult Literacy Survey*, unpublished tabulations, 1994, 1995.

## Citizenship skills

*In democratic societies, citizens are generally expected to be reasonably knowledgeable about how government operates; to be interested in and aware of politics; to be able to participate in government; to believe that they can influence what the government does; and to be tolerant of different opinions. Good citizenship must be developed and nurtured, and schools are expected to play a role in this process.*

- In 1996, 20 percent of students in grades 9–12 were able to answer four or five (out of five) political knowledge questions correctly. Less than half read national news weekly (41 percent) or watched or listened to news daily (40 percent), and over half claimed to understand politics (55 percent) or would tolerate a public library's carrying a controversial book (57 percent). However, large percentages of students were confident in their political participatory skills such as writing to government (93 percent) and speaking publicly (82 percent), and 88 percent indicated that they thought that people should be allowed to speak against religion or church.
- Parents knew more about politics than did students and were more likely than students to pay attention to politics and to claim that they understand politics. However, students were more likely than parents to believe that their family has a say in what government does.
- Compared with students in grades 9–10, students in grades 11–12 were more likely to be knowledgeable about politics, to read the national news every week, to be confident of their political participatory skills, to claim to understand politics, and to tolerate diversity.
- Regular participants in community service (35 hours or more during the school year) had higher levels of citizenship skills than did students who did not participate. Compared with students who did not participate in community service, regular participants were more likely to answer four or five political knowledge questions correctly, to pay attention to politics through reading, to trust their political participatory skills, and to be politically efficacious (see supplemental tables 9-1 and 9-2).

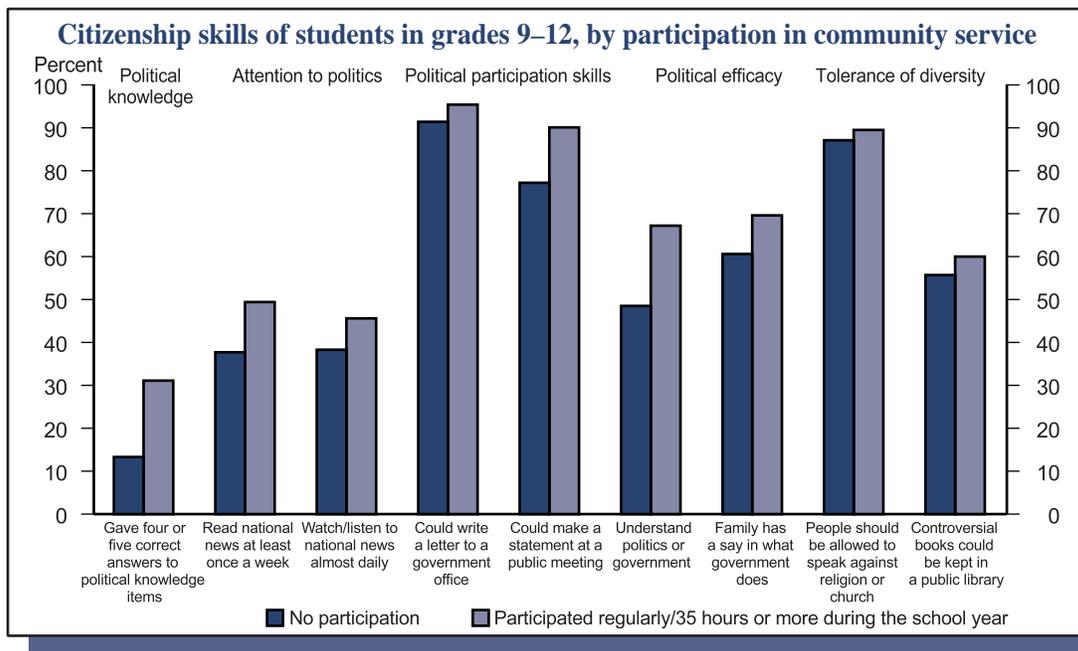
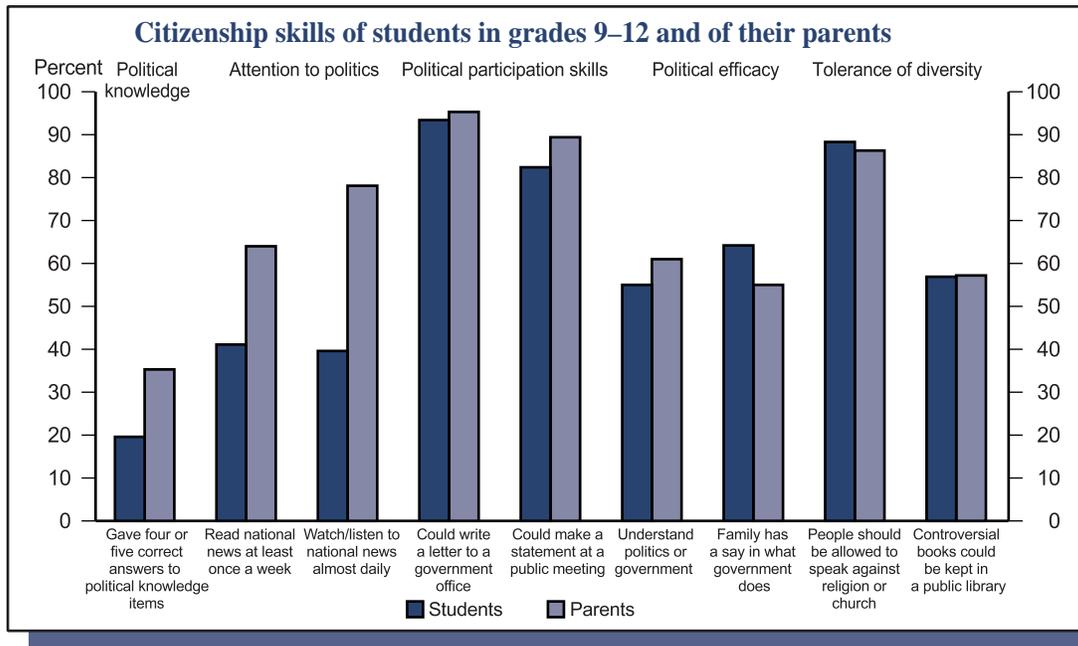
### Percentage of students and parents with various citizenship skills, by grade level (students): 1996

| Citizenship skill  | Students |             |              | Parents |
|--|----------|-------------|--------------|---------|
|  | Total    | Grades 9–10 | Grades 11–12 |         |
| Political knowledge (correct answers out of five)            |          |             |              |         |
| None or one  | 49.1     | 58.8        | 38.5         | 31.7    |
| Two or three   | 31.3     | 28.7        | 34.2         | 33.0    |
| Four or five   | 19.6     | 12.5        | 27.3         | 35.3    |
| Attention to politics  |          |             |              |         |
| Read national news at least once a week                      | 41.1     | 37.6        | 44.9         | 64.0    |
| Watch/listen to national news almost daily                   | 39.6     | 40.7        | 38.4         | 78.1    |
| Participation skills   |          |             |              |         |
| I could write a letter to a government office                | 93.4     | 91.9        | 94.9         | 95.3    |
| I could make a statement at a public meeting                 | 82.4     | 79.2        | 86.0         | 89.4    |
| Political efficacy   |          |             |              |         |
| I understand politics or government                          | 55.0     | 49.6        | 61.0         | 61.0    |
| My family has a say in what government does                  | 64.2     | 63.7        | 64.8         | 55.0    |
| Tolerance of diversity                                       |          |             |              |         |
| People should be allowed to speak against religion or church | 88.3     | 86.4        | 90.3         | 86.3    |
| Controversial books could be kept in a public library        | 56.9     | 51.3        | 63.1         | 57.2    |

NOTE: Details may not add to 100.0 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Spring 1996 (Youth Civic Involvement Component and Parent and Family Involvement in Education and Civic Involvement Component).

### Citizenship skills



SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Spring 1996 (Youth Civic Involvement Component and Parent and Family Involvement in Education and Civic Involvement Component).

## Employment of noncollege youth

*The transition from high school to work can be difficult. Without prior job experience or specialized training, school leavers may have difficulty finding jobs. Comparing the employment rates of high school completers with those of dropouts indicates the employment advantage noncollege high school completers have over high school dropouts.*

- In 1997, 67 percent of recent high school completers not enrolled in college were employed, compared with 45 percent of recent high school dropouts.
- Since 1972, the employment rates for both recent high school completers not enrolled in college and recent high school dropouts have declined, on average, by approximately 0.3 percentage points per year. These declines were greater for males than for females (see supplemental table 10-1).
- Since 1972, the employment rates for black recent high school dropouts have been 25 percentage points lower than the rates for their white counterparts, on average. In 1997, the employment rate for black recent high school dropouts was 17 percent.
- Between 1960 and 1997, the gap in employment rates between male and female recent high school completers narrowed (see supplemental table 10-1).

### Employment rates for recent high school completers not enrolled in college and for recent high school dropouts, by race-ethnicity: October 1972-97

| October | Recent high school completers<br>not enrolled in college |       |       |                       | Recent high school dropouts |       |       |                       |
|---------|--|-------|-------|-----------------------|-----------------------------|-------|-------|-----------------------|
|         | Total <sup>1</sup>                                       | White | Black | Hispanic <sup>2</sup> | Total <sup>1</sup>          | White | Black | Hispanic <sup>2</sup> |
| 1972    | 70.1   | 73.5  | 48.3  | ( <sup>2</sup> )      | 46.8                        | 47.0  | 42.8  | ( <sup>2</sup> )      |
| 1974    | 69.1   | 72.9  | 46.0  | 56.2                  | 49.3                        | 53.9  | 36.2  | 49.9                  |
| 1976    | 68.8   | 73.1  | 38.6  | 65.3                  | 44.8                        | 49.6  | 20.9  | 52.7                  |
| 1978    | 74.9   | 79.0  | 45.8  | 67.8                  | 51.2                        | 54.2  | 22.3  | 56.1                  |
| 1980    | 68.9   | 74.6  | 34.7  | 62.3                  | 44.6                        | 51.2  | 20.9  | 52.2                  |
| 1982    | 60.4   | 68.4  | 29.3  | 56.6                  | 38.0                        | 44.6  | 16.2  | 45.5                  |
| 1984    | 64.0   | 70.7  | 44.8  | 55.4                  | 44.0                        | 51.4  | 24.2  | 41.0                  |
| 1986    | 65.2   | 71.5  | 41.1  | 53.7                  | 48.0                        | 50.4  | 31.5  | 41.0                  |
| 1988    | 71.9   | 78.2  | 55.8  | 53.6                  | 43.6                        | 47.6  | 17.6  | 44.7                  |
| 1989    | 71.7   | 77.6  | 53.7  | 54.6                  | 46.7                        | 57.6  | 26.4  | 42.1                  |
| 1990    | 67.8   | 75.0  | 45.2  | 56.3                  | 46.3                        | 56.3  | 30.9  | 39.9                  |
| 1991    | 59.6   | 67.0  | 32.3  | 57.9                  | 36.8                        | 38.6  | 24.7  | 36.2                  |
| 1992    | 62.7   | 71.9  | 37.0  | 53.2                  | 36.2                        | 43.1  | —     | 41.4                  |
| 1993    | 64.2   | 71.8  | 42.3  | 47.7                  | 46.9                        | 52.6  | 27.1  | 34.5                  |
| 1994    | 64.2   | 73.1  | 38.0  | 43.7                  | 42.9                        | 51.7  | 34.1  | 41.2                  |
| 1995    | 63.1   | 71.4  | 51.5  | 43.0                  | 47.7                        | 51.6  | 33.5  | 43.9                  |
| 1996    | 59.0   | 68.5  | 41.7  | 45.1                  | 42.3                        | 45.3  | 21.5  | 54.5                  |
| 1997    | 66.9   | 73.8  | 53.3  | ( <sup>2</sup> )      | 44.9                        | 48.8  | 17.4  | ( <sup>2</sup> )      |

— Too few sample observations for a reliable estimate.

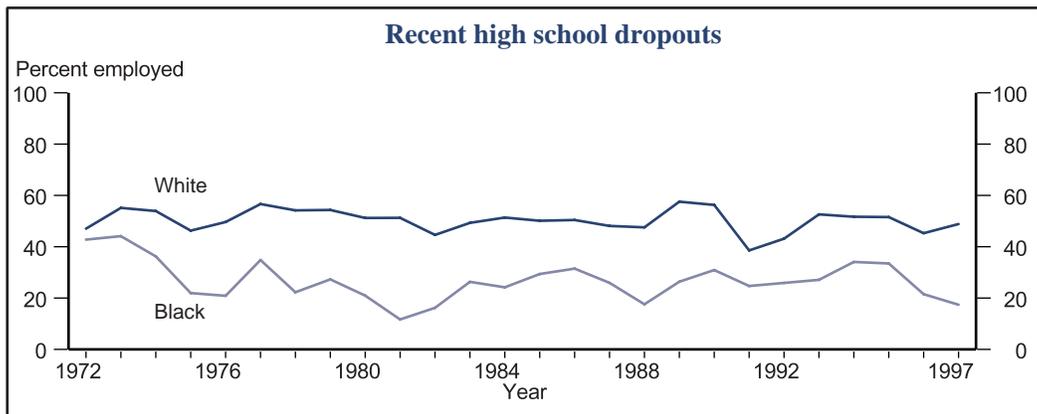
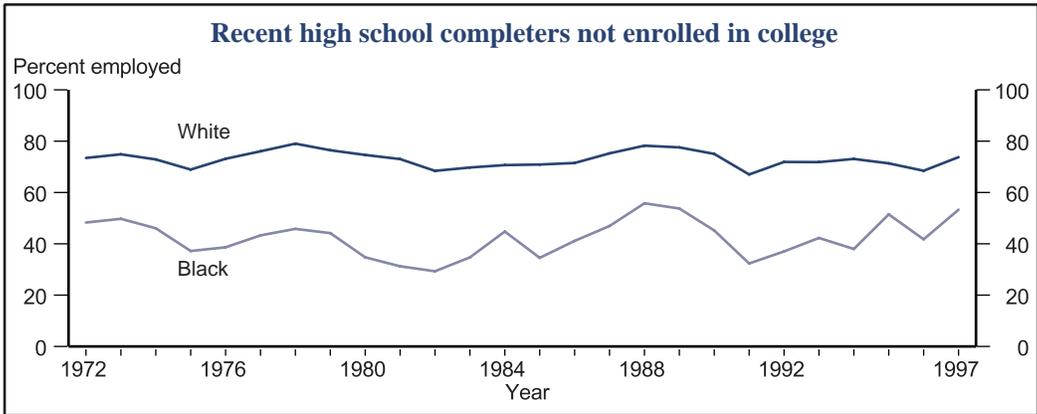
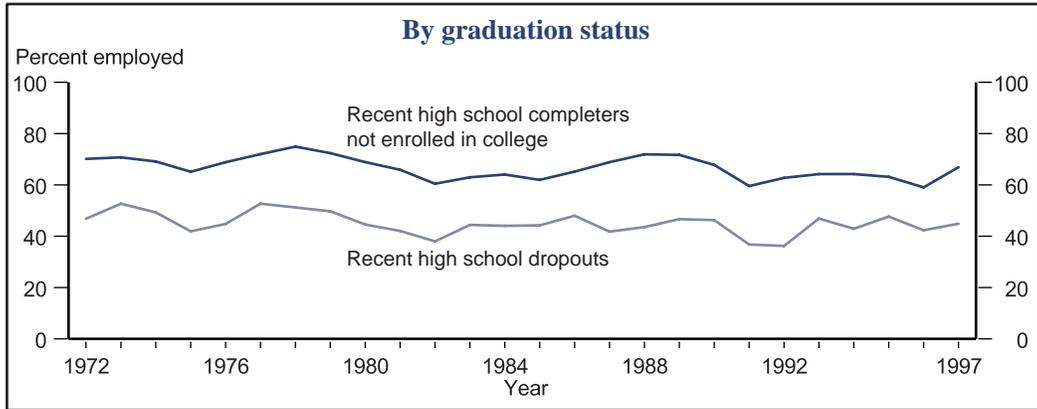
<sup>1</sup> Included in the totals but not shown separately are members of other racial-ethnic groups.

<sup>2</sup> Due to the small sample sizes for the Hispanic category, 3-year averages were calculated. For example, the 3-year average for 1996 is the average percentage of recent high school completers not enrolled in college or recent school dropouts in 1995, 1996, and 1997. Thus, 3-year averages cannot be calculated for 1972 and 1997.

NOTE: Recent high school completers are individuals ages 16-24 who completed high school during the survey year. Recent high school dropouts are individuals ages 16-24 who had not completed high school, were not enrolled during the survey month, and were in school 12 months earlier. In 1994, the survey instrument for the Current Population Survey (CPS) was changed and weights were adjusted. See the supplemental note to *Indicator 51* for further discussion.

SOURCE: U.S. Department of Commerce, Bureau of the Census, October Current Population Surveys.

### Employment rates for recent high school completers not enrolled in college and for recent school dropouts: October 1972-97



NOTE: Recent high school completers are individuals ages 16-24 who completed high school during the survey year. Recent high school dropouts are individuals ages 16-24 who had not completed high school, were not enrolled during the survey month, and were in school 12 months earlier. In 1994, the survey instrument for the CPS was changed and

weights were adjusted. In 1992, there were too few sample observations for a reliable estimate of black recent school dropouts. See the supplemental note to *Indicator 51* for further discussion.

SOURCE: U.S. Department of Commerce, Bureau of the Census, October Current Population Surveys.

## Employment of young adults, by educational attainment

*Many factors affect employment rates among adults. Some factors influence the willingness of employers to offer jobs to individuals with different levels of education at the going wage rate, whereas others influence the willingness of individuals to take jobs at this wage rate. The percentage of young adults who are employed is an indication of both the skill levels required by employers and the advantages employment offers to individuals relative to other pursuits.*

- The employment rate of male and female 25- to 34-year-olds was generally higher among those individuals with a higher level of education between 1971 and 1998. For example, in 1998, males and females ages 25–34 with a bachelor’s degree or higher were more likely to be employed than their peers who had lower levels of educational attainment.
- Between 1971 and 1998, the employment rate of males ages 25–34 decreased for those who had not finished high school and those with a high school diploma or GED, and remained relatively constant for those with some college and those with a bachelor’s degree or higher.
- Between 1971 and 1998, the employment rate of females ages 25–34 increased across all education levels. However, the rate of increase for females who did not complete high school was lower than the rate of increase for females who attained higher levels of education.

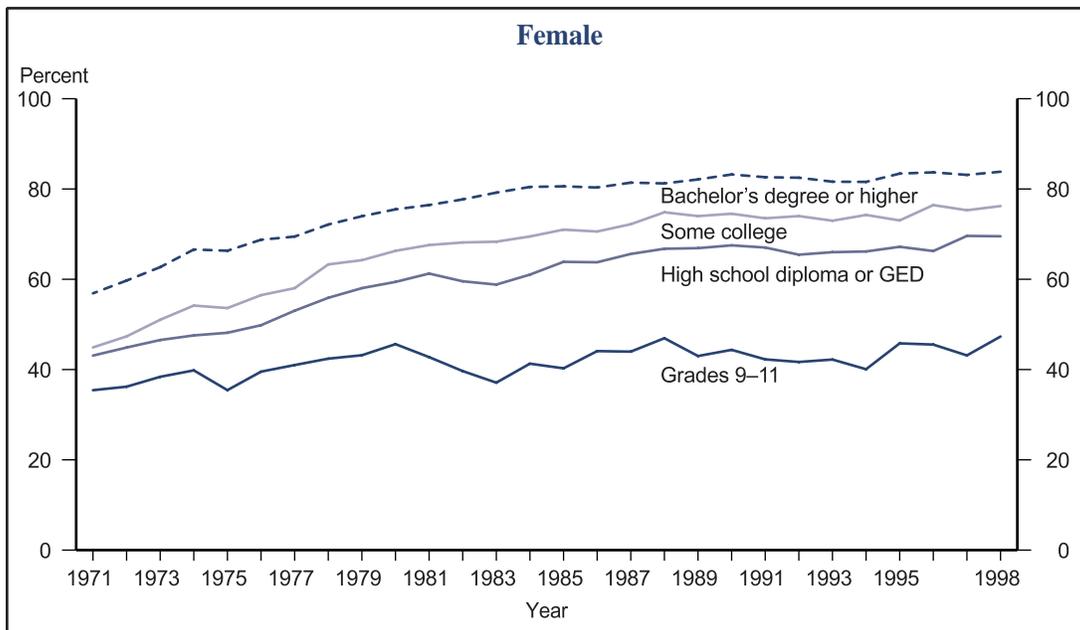
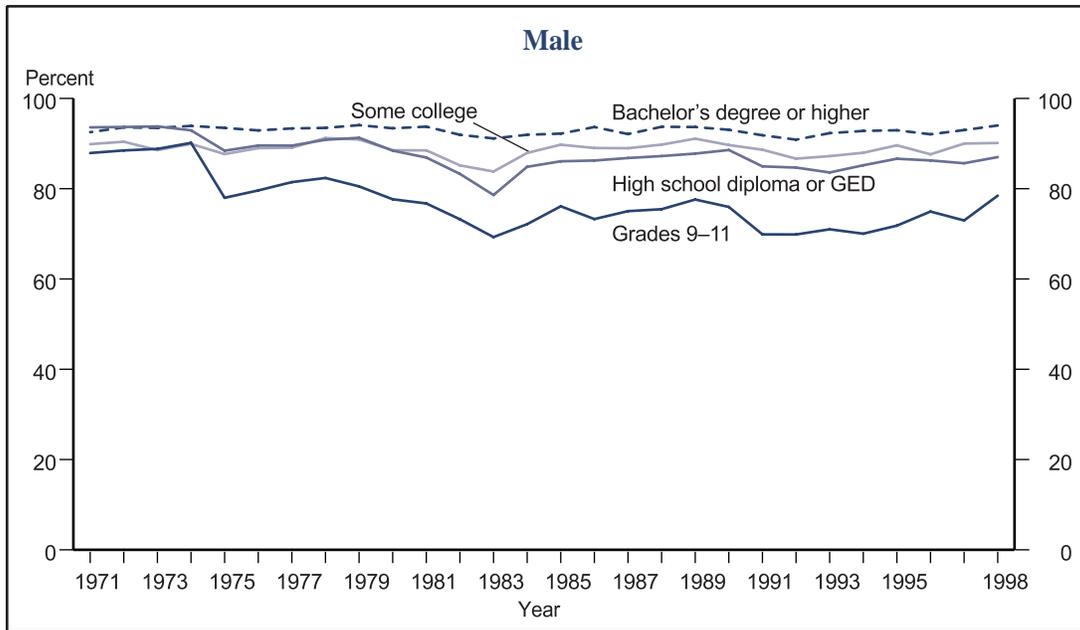
### Employment rate of 25- to 34-year-olds, by sex and educational attainment: March 1971–98

|            | Male        |                            |              |                             | Female      |                            |              |                             |
|------------|-------------|----------------------------|--------------|-----------------------------|-------------|----------------------------|--------------|-----------------------------|
|            | Grades 9–11 | High school diploma or GED | Some college | Bachelor’s degree or higher | Grades 9–11 | High school diploma or GED | Some college | Bachelor’s degree or higher |
| March 1971 | 87.9        | 93.6                       | 89.9         | 92.5                        | 35.4        | 43.1                       | 44.9         | 56.9                        |
| 1973       | 88.8        | 93.8                       | 88.5         | 93.5                        | 38.4        | 46.5                       | 51.0         | 62.7                        |
| 1975       | 78.0        | 88.4                       | 87.7         | 93.5                        | 35.4        | 48.1                       | 53.6         | 66.3                        |
| 1977       | 81.5        | 89.5                       | 89.1         | 93.3                        | 41.0        | 53.0                       | 58.0         | 69.5                        |
| 1979       | 80.5        | 91.3                       | 90.9         | 94.1                        | 43.2        | 58.0                       | 64.2         | 74.0                        |
| 1981       | 76.7        | 86.9                       | 88.5         | 93.7                        | 42.7        | 61.3                       | 67.6         | 76.4                        |
| 1983       | 69.3        | 78.6                       | 83.8         | 91.1                        | 37.1        | 58.8                       | 68.3         | 79.2                        |
| 1985       | 76.1        | 86.1                       | 89.7         | 92.2                        | 40.3        | 63.9                       | 71.0         | 80.6                        |
| 1987       | 75.0        | 86.8                       | 89.0         | 92.1                        | 44.0        | 65.6                       | 72.2         | 81.4                        |
| 1989       | 77.6        | 87.8                       | 91.1         | 93.7                        | 43.0        | 66.9                       | 74.0         | 82.1                        |
| 1990       | 76.0        | 88.6                       | 89.7         | 93.0                        | 44.4        | 67.5                       | 74.5         | 83.2                        |
| 1991       | 69.9        | 84.9                       | 88.6         | 91.8                        | 42.3        | 67.0                       | 73.5         | 82.6                        |
| 1992       | 69.9        | 84.7                       | 86.7         | 90.9                        | 41.7        | 65.4                       | 74.0         | 82.5                        |
| 1993       | 71.0        | 83.6                       | 87.2         | 92.3                        | 42.2        | 66.0                       | 73.0         | 81.6                        |
| 1994       | 70.0        | 85.2                       | 88.0         | 92.8                        | 40.1        | 66.2                       | 74.3         | 81.6                        |
| 1995       | 71.8        | 86.6                       | 89.6         | 92.9                        | 45.8        | 67.2                       | 73.0         | 83.4                        |
| 1996       | 74.9        | 86.3                       | 87.6         | 92.1                        | 45.5        | 66.3                       | 76.4         | 83.7                        |
| 1997       | 73.0        | 85.6                       | 90.0         | 93.0                        | 43.1        | 69.6                       | 75.3         | 83.1                        |
| 1998       | 78.5        | 87.0                       | 90.1         | 94.0                        | 47.3        | 69.5                       | 76.2         | 83.8                        |

NOTE: The Current Population Survey (CPS) questions used to obtain educational attainment were changed in 1992. See the supplemental note to *Indicator 59* for further discussion. The employment rate represents the number of employed individuals as a percentage of the total population.

SOURCE: U.S. Department of Commerce, Bureau of the Census, March Current Population Surveys.

### Employment rate of 25- to 34-year-olds, by sex and educational attainment: March 1971-98



NOTE: The Current Population Survey (CPS) questions used to obtain educational attainment were changed in 1992. See the supplemental note to *Indicator 59* for further discussion. The employment rate represents the number of employed individuals as a percentage of the total population.

SOURCE: U.S. Department of Commerce, Bureau of the Census, March Current Population Surveys.

## Annual earnings of young adults, by educational attainment

*Many factors influence wages and salaries, including employer's perceptions of the productivity and availability of workers with different levels of education and prevailing economic conditions. The ratio of annual earnings of high school dropouts or college graduates to the annual earnings of high school completers measures the earnings disadvantage of not finishing high school and the earnings advantage of completing college.*

- In 1997, the median annual earnings of young adults ages 25–34 who had not completed high school were substantially lower than those of their counterparts who had done so (29 and 37 percent lower for males and females, respectively). Young adults who had completed a bachelor's degree or higher earned substantially more than those who had earned no more than a high school diploma or GED (50 and 91 percent more for males and females, respectively).
- Between 1980 and 1997, the earnings of those with a bachelor's degree or higher rose faster than the earnings of those who had completed only high school for both both males and females.
- Gaps in earnings between males and females decline with increasing levels of education: as educational attainment increases, the ratio of median annual earnings of male to female wage and salary workers decreases. However, the association between education and the male/female earnings gap has lessened over time. That is, earnings of women achieved greater parity with the earnings of men in recent years, regardless of level of educational attainment (see supplemental table 12-1).

**Ratio<sup>1</sup> of median annual earnings of all wage and salary workers ages 25–34 whose highest education level was grades 9–11, some college, or a bachelor's degree or higher, compared with those with a high school diploma or GED, by sex: 1970–97**

| Year              | Grades 9–11 |        | Some college |        | Bachelor's degree or higher |        |
|-------------------|-------------|--------|--------------|--------|-----------------------------|--------|
|                   | Male        | Female | Male         | Female | Male                        | Female |
| 1970 <sup>2</sup> | 0.83        | 0.59   | 1.09         | 1.20   | 1.24                        | 1.82   |
| 1972 <sup>2</sup> | 0.79        | 0.63   | 1.01         | 1.18   | 1.18                        | 1.79   |
| 1974              | 0.81        | 0.62   | 1.02         | 1.19   | 1.14                        | 1.74   |
| 1976              | 0.78        | 0.61   | 1.03         | 1.14   | 1.19                        | 1.58   |
| 1978              | 0.77        | 0.54   | 1.05         | 1.17   | 1.18                        | 1.55   |
| 1980              | 0.73        | 0.65   | 1.04         | 1.24   | 1.19                        | 1.52   |
| 1982              | 0.71        | 0.66   | 1.12         | 1.21   | 1.34                        | 1.63   |
| 1984              | 0.63        | 0.56   | 1.15         | 1.21   | 1.36                        | 1.61   |
| 1986              | 0.69        | 0.65   | 1.18         | 1.21   | 1.50                        | 1.78   |
| 1988              | 0.68        | 0.56   | 1.10         | 1.31   | 1.42                        | 1.81   |
| 1990              | 0.71        | 0.58   | 1.14         | 1.34   | 1.48                        | 1.92   |
| 1991              | 0.64        | 0.64   | 1.14         | 1.32   | 1.53                        | 1.90   |
| 1992              | 0.68        | 0.76   | 1.13         | 1.34   | 1.60                        | 2.00   |
| 1993              | 0.67        | 0.59   | 1.12         | 1.31   | 1.57                        | 1.99   |
| 1994 <sup>2</sup> | 0.67        | 0.58   | 1.14         | 1.20   | 1.52                        | 1.86   |
| 1995 <sup>2</sup> | 0.74        | 0.61   | 1.11         | 1.28   | 1.55                        | 1.91   |
| 1996 <sup>2</sup> | 0.69        | 0.64   | 1.14         | 1.27   | 1.56                        | 1.88   |
| 1997              | 0.71        | 0.63   | 1.11         | 1.22   | 1.50                        | 1.91   |

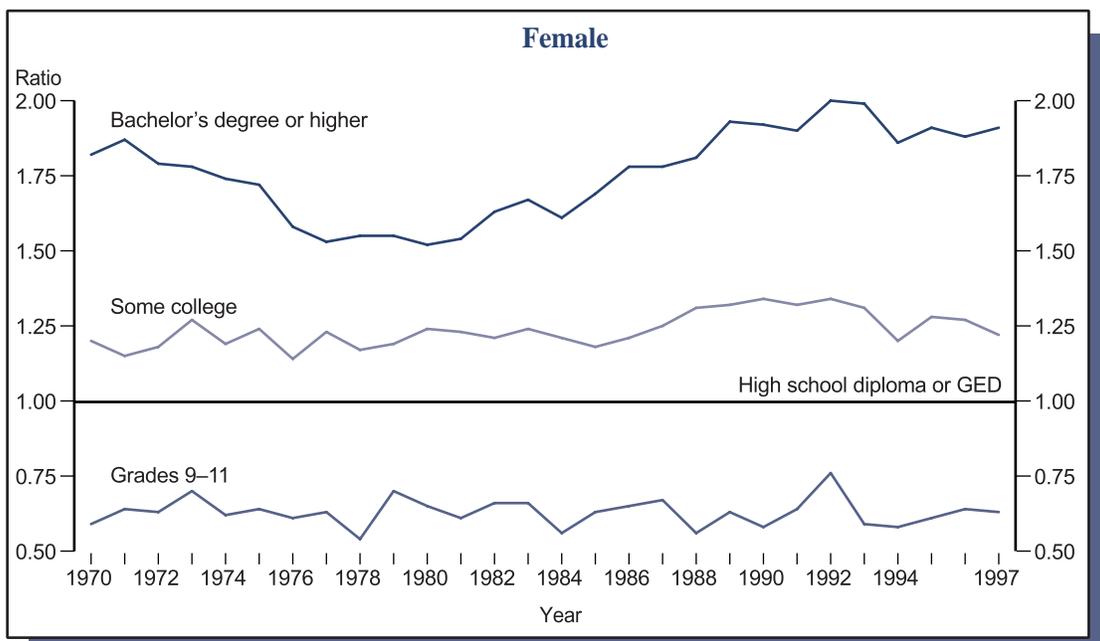
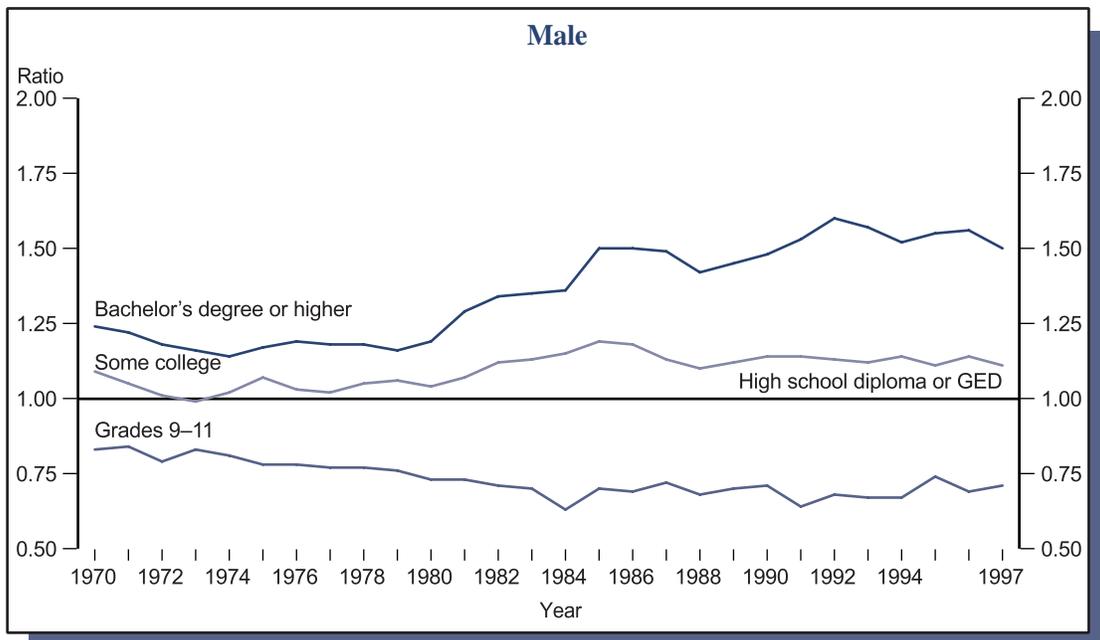
<sup>1</sup> This ratio is most useful when compared with 1.0. For example, the ratio of 1.50 in 1997 for males whose highest education level was a bachelor's degree or higher means that they earned 50 percent more than males who had a high school diploma or GED. The ratio of 0.71 in 1997 for males whose highest education level was grades 9–11 means that they earned 29 percent less than males who had a high school diploma or GED.

<sup>2</sup> Data revised from previously published figures.

NOTE: The Current Population Survey (CPS) questions used to obtain educational attainment were changed in 1992. See the supplemental note to *Indicator 59* for further discussion. In 1994, the survey instrument for the CPS was changed and weights were adjusted. See the supplemental note to *Indicator 51* for further discussion.

SOURCE: U.S. Department of Commerce, Bureau of the Census, March Current Population Surveys.

**Ratio\* of median annual earnings of all wage and salary workers ages 25–34 whose highest education level was grades 9–11, some college, or a bachelor’s degree or higher, compared with those with a high school diploma or GED, by sex: 1970–97**



\* This ratio is most useful when compared with 1.0. For example, the ratio of 1.50 in 1997 for males whose highest education level was a bachelor’s degree or higher means that they earned 50 percent more than males who had a high school diploma or GED. The ratio of 0.71 in 1997 for males whose highest education level was grades 9–11 means that they earned 29 percent less than males who had a high school diploma or GED. Data for 1994, 1995, and 1996 are revised from previously published figures.

NOTE: The Current Population Survey (CPS) questions used to obtain educational attainment were changed in 1992. See the supplemental note to *Indicator 59* for further discussion. In 1994, the survey instrument for the CPS was changed and weights were adjusted. See the supplemental note to *Indicator 51* for further discussion.

SOURCE: U.S. Department of Commerce, Bureau of the Census, March Current Population Surveys.

## Educational outcomes and employment status 4 years after college graduation

*Some bachelor's degree recipients go directly into the labor force, while others pursue further education, often combining school and work. A snapshot of labor market status and educational outcomes of college graduates 4 years after graduation illustrates graduates' paths to employment and further schooling. It also provides an opportunity to see the extent to which these paths are related to borrowing for undergraduate education.*

- In 1997, the majority (79 percent) of 1992–93 graduates were neither enrolled in an advanced degree program nor had attained an advanced degree. Ten percent had attained an advanced degree and were not enrolled in school; another 10 percent were enrolled and had not attained an advanced degree; and 1 percent were enrolled and had attained an advanced degree.
- College graduates with parents who had an advanced degree were more likely than students whose parents had a bachelor's degree or less to have attained an advanced degree or to be enrolled in school in 1997.
- Graduates who used federal loans to finance their undergraduate education were slightly less likely than those who had not used these loans to have attained an advanced degree or to be enrolled in school in 1997.
- By 1997, most 1992–93 bachelor's degree recipients were employed: 76 percent were working and not enrolled in school and another 13 percent were combining school and work. Five percent were enrolled but not working, and 6 percent were neither working nor enrolled (see supplemental table 13-1).

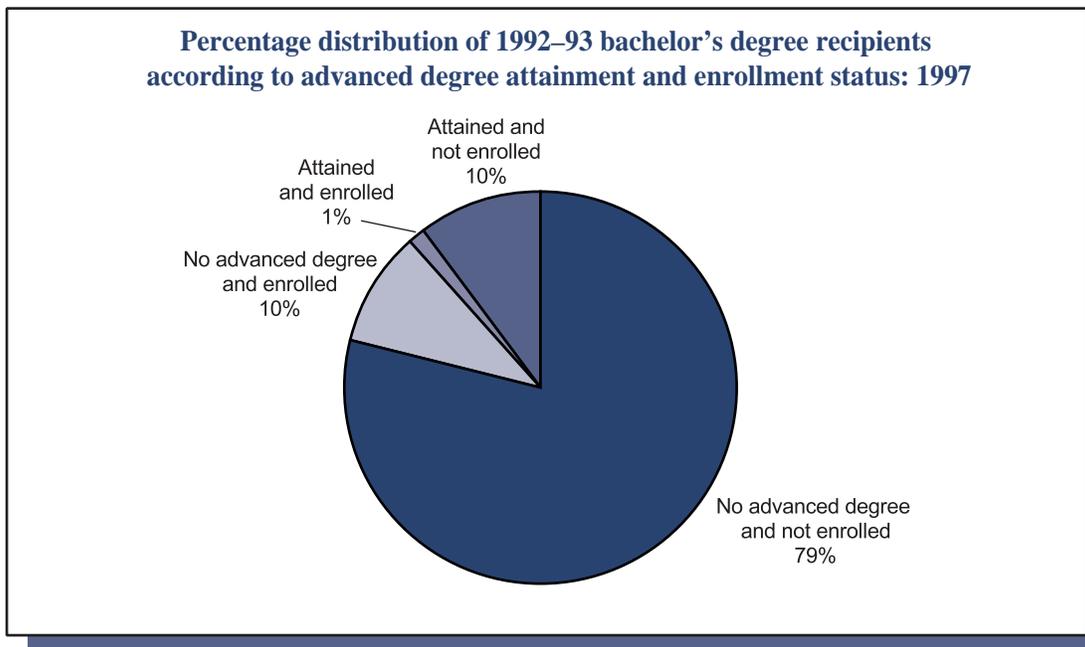
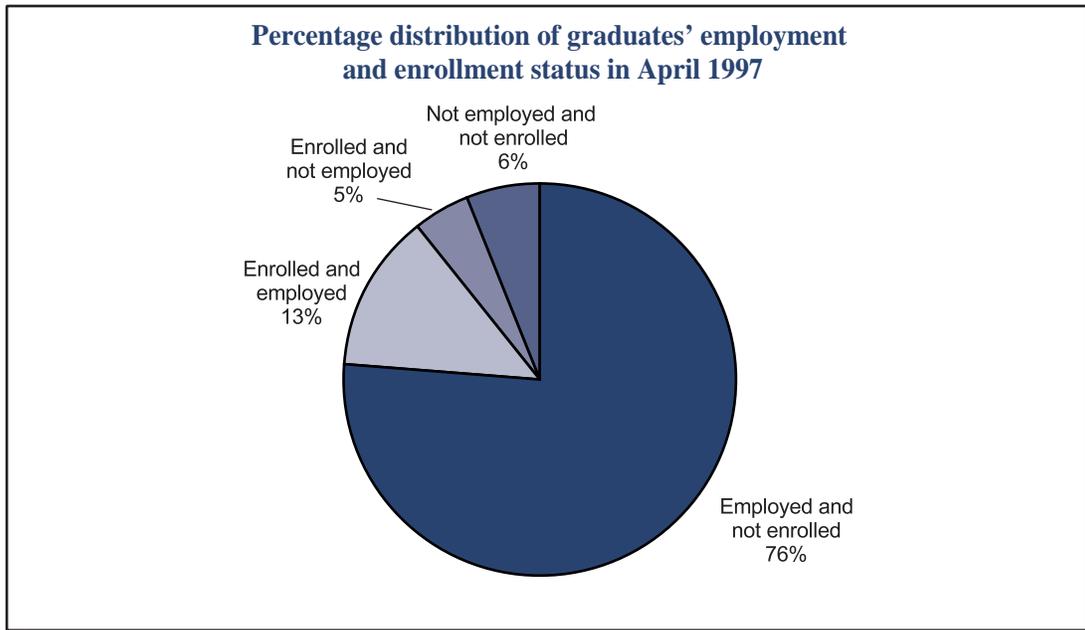
### Percentage distribution of 1992–93 bachelor's degree recipients\* according to enrollment status in April 1997, by parents' educational attainment and undergraduate borrowing status

| Parents' educational attainment and undergraduate borrowing status | No advanced degree, not enrolled | Attained advanced degree or currently enrolled |                              |                        |                       |
|--|----------------------------------|--|------------------------------|------------------------|-----------------------|
|  |                                  | Total  | No advanced degree, enrolled | Attained, not enrolled | Attained and enrolled |
| <b>Total</b>   | <b>78.9</b>                      | <b>21.1</b>                                    | <b>9.5</b>                   | <b>10.2</b>            | <b>1.4</b>            |
| Parents' educational attainment                                    |                                  |  |                              |                        |                       |
| Less than high school  | 84.9                             | 15.1   | 5.4                          | 8.6                    | 1.1                   |
| High school diploma or equivalency credential                      | 84.0                             | 16.0   | 7.6                          | 7.7                    | 0.7                   |
| Some postsecondary education                                       | 81.6                             | 18.4   | 7.3                          | 9.8                    | 1.3                   |
| Bachelor's degree  | 78.3                             | 21.7   | 10.8                         | 9.5                    | 1.4                   |
| Advanced degree  | 70.6                             | 29.4   | 12.4                         | 14.7                   | 2.3                   |
| Undergraduate borrowing status (federal loans)                     |                                  |  |                              |                        |                       |
| Did not borrow   | 78.0                             | 22.0   | 9.8                          | 10.6                   | 1.6                   |
| Borrowed   | 80.8                             | 19.2   | 9.1                          | 9.0                    | 1.1                   |
| Less than \$1,000  | 77.8                             | 22.2   | 17.4                         | 3.9                    | 0.9                   |
| \$1,000–4,999  | 81.1                             | 18.9   | 8.9                          | 8.8                    | 1.2                   |
| \$5,000–9,999  | 82.1                             | 17.9   | 8.2                          | 9.0                    | 0.7                   |
| \$10,000–19,999  | 80.3                             | 19.7   | 9.4                          | 9.1                    | 1.2                   |
| \$20,000 or more   | 77.3                             | 22.7   | 7.0                          | 13.1                   | 2.6                   |

\* Bachelor's degrees were earned between July 1992 and June 1993.  
NOTE: Details may not add to 100.0 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study, Second Follow-up (B&B:93/97), Data Analysis System.

### Employment and enrollment among 1992–93 bachelor’s degree recipients\* in April 1997



\* Bachelor’s degrees were earned between July 1992 and June 1993.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study, Second Follow-up (B&B:93/97), Data Analysis System.

