

CHAPTER 6

International Comparisons of Education

This chapter offers a broad perspective on education across the nations of the world. It also provides an international context for examining the condition of education in the United States. In the early 1990s, the National Center for Education Statistics (NCES) expanded its role in collecting international data by serving as the national research center for the International Association for the Evaluation of Educational Achievement (IEA) Reading Literacy Study. In addition, NCES has provided funding for international research studies comparing mathematics and science education, including the Third International Mathematics and Science Study (TIMSS) and the Second International Assessment of Educational Progress. NCES is also cooperating with international agencies in the compilation of statistics and the development of education indicators.

Some of the data in this chapter were drawn from materials prepared by the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the Institute of International Education, the Organization for Economic Cooperation and Development (OECD), and the International Assessment of Educational Progress (IAEP). The basic summary data on enrollments, teachers, enrollment ratios, and finances were synthesized from information appearing in *Education at a Glance* published by OECD. Even though OECD tabulations are very carefully prepared, international data users should be cautioned about the many problems of definition and reporting involved in the collection of data about the educational systems in the world. This chapter provides information from TIMSS, carried out IEA. Data were collected for the two adjacent grades containing the most 9-year-olds (Population 1) and the two adjacent grades containing the most 13-year-olds (Population 2). Data are reported for the higher grade for each population, which was 4th grade in most nations for Population 1 and 8th grade in most nations for Population 2. The mathematics and science performance of 8th grade students in 41 countries, and 4th grade students in 26 countries, was studied through assessments administered during 1994–95. The mathematics and science performance of students at the end of secondary schooling (12th grade in the U.S.) was also assessed at the same time in 21 countries.

The role that the United States plays in the world of higher education is illuminated by data on foreign students enrolled in U.S. institutions of higher education. These data from the Institute of International Education provide information on the number of foreign students and their countries of origin.

Further information on survey methodologies is in the “Guide to Sources” in the appendix and in the publications cited in the source notes.

Population

The percent of young people in a population can influence the proportion of national income spent per student. Countries with a greater proportion of young people must set aside larger proportions of domestic product for their education. Among the OECD countries, Turkey had the largest percentage of young people ages 5 to 13—at 20 percent in 1996. The closest followers were Ireland at 17 percent, and Iceland and the Russian Federation at 16 percent. Countries with relatively small numbers of persons in this age group included Italy at 10 percent, and Denmark, Germany, Japan, and Spain at 11 percent. The proportion of 5- to 13-year-olds in the U.S. was 15 percent, which was higher than most other OECD countries (table 397).

Enrollments

In 1996, over 1 billion students were enrolled in schools around the world. Of these students, 662 million were in elementary-level programs, 382 million were in secondary programs, and 84 million were in higher education programs (table 399). Between 1980 and 1996, enrollment changes varied from region to region. Elementary enrollment changes ranged from increases of 58 percent in Africa and 28 percent in Central and South America to a 9 percent decrease in Europe. Enrollment increases at the secondary level generally outpaced increases at the primary (elementary) level, especially in Africa (124 percent), Oceania (82 percent), Asia (56 percent), and Central and South America (55 percent). Secondary-level enrollment increased in Europe by 11 percent, and Northern America (U.S., Canada, and Greenland) by 2 percent (table 399).

Pupil/teacher ratios in elementary and secondary schools vary from country to country. Developed countries with relatively low pupil/teacher ratios at the elementary level in 1996 were Italy and Denmark, both at 11.2. Countries with relatively high ratios included Ireland (22.6), New Zealand (22.0) and the United Kingdom (21.3) (table 401). At the post-secondary level, developing areas of the world had substantial increases in enrollment between 1980 and 1996. Postsecondary enrollment rose by 181 percent in Africa and by 128 percent in Asia. Postsecondary enrollment in Oceania and Central and South America increased by 189 percent and 78 percent, respectively, followed by Europe at 30 percent and Northern America at 19 percent. These increases are due to growth in the postsecondary attendance rates and increased population (tables 399 and 400).

Postsecondary enrollment varied among countries partially due to differing definitions of postsecondary education and at what age it begins. In 1996, among the OECD countries, Canada reported the largest proportion of 18- to 21-year-olds enrolled in postsecondary education at 41 percent, followed by Belgium (40 percent), France (36 percent), the United States (35 percent), Ireland (31 percent), and New Zealand (29 percent). For the 22 to 25 age group, Finland's enrollment rate was highest at 29 percent, with Norway following at 25 percent, Denmark at 24 percent, Canada at 22, and the U.S. at 22 (table 398).

In 1997–98 there were 481,000 foreign students studying at U.S. colleges and universities. Approximately 58 percent of these students were from Asian countries (table 420).

Achievement

TIMSS is the largest, most comprehensive comparative study of education that has ever been undertaken, testing a half million students. The study was designed to focus on students at different stages in school: midway through elementary school (3rd or 4th grade in most countries), midway through lower secondary school (7th or 8th grade in most countries), and at the end of upper secondary school. Results from the fourth and eighth grade levels were released in late 1996 and 1997, respectively. Findings for students at the end of secondary school were released in early 1998.

The results of the 1994–95 TIMSS show U.S. 4th graders performing above the international average in both mathematics and science, and showing a stronger standing relative to other countries than 8th and 12th graders in both subjects. In addition, U.S. students perform better in science overall than in

mathematics compared to their international counterparts at the 4th and 8th grade levels.

Mathematics

In the 1994–95 TIMSS assessment in mathematics, U.S. 4th graders scored above the international average of the 26 countries that participated. Fourth graders performed below students in 7 countries, not significantly different from students in 6 countries, and above students in 12 countries. U.S. 4th graders scored below Japan, not significantly different from Canada, and above England (table 409). U.S. 8th graders scored below the international average of the 41 countries that were tested. In mathematics, U.S. 8th graders scored below their counterparts in 20 countries, including top performer Singapore, but not significantly different from England and Germany (table 403). U.S. 12th graders performed below the international average, and among the lowest of the 21 TIMSS countries on the assessment of mathematics general knowledge. U.S. students were outperformed by those in 14 countries, outperformed students in 2 countries, and were not significantly different from those in 4 countries (Table 411).

Science

U.S. 4th graders performed above the international average of the 26 countries assessing fourth grade students in science. Only Korea scored above the U.S., with U.S. 4th graders outperforming 19 other countries, including England and Canada. The remaining countries' scores, including Japan's, were not significantly different from those of U.S. fourth grade students (table 410). U.S. 8th graders compared more favorably with other countries in science than in mathematics, scoring above the international average of 41 countries. U.S. 8th grade students scored below their peers in nine countries, not significantly different from 16 countries, including Canada, England, and Germany, and outperformed students in 15 nations (table 405). U.S. 12th graders performed below the international average and among the lowest scoring of the 21 TIMSS countries on the assessment of general science knowledge. U.S. students were outperformed by students in 11 countries, outperformed students in 2 countries, and did not score significantly different from students in 7 countries (table 412).

U.S. 4th grade students were above the international average in all four science content areas studied by TIMSS. Among the five science content areas assessed at the 8th grade level in TIMSS, U.S. students performed above the international average in earth science, life science, and environmental issues, and no different from the international average in chemistry and physics (table 410).

Degrees

Ratios of bachelor's degrees conferred per hundred persons at the typical year of graduation in 1996 ranged from 9 in Switzerland and 11 in Austria to 36 in Australia and 35 percent in the United States. In 1996, women had higher bachelor's degree ratios than men in 14 out of 19 countries reporting data (table 415).

Countries pay careful attention to the percent of graduates in the fields of mathematics and science. Regarding the percent of undergraduate degrees awarded in science fields (including natural sciences, mathematics and computer science, and engineering), OECD countries reported rates from 15 to 36 percent for 1996. Finland and Germany were over 30 percent, while Norway, Portugal, the Netherlands, the United States, Canada, Spain Denmark, and Italy were 20 percent or less (table 416). The proportion of graduate degrees awarded in science fields also ranged widely across countries in 1996. Among the countries with the highest proportions were Switzerland (40 percent), Austria and Germany (39 percent), and Norway (38 percent). Among the countries with the lowest proportions were Denmark (12 percent), the United States and Australia (14 percent), New

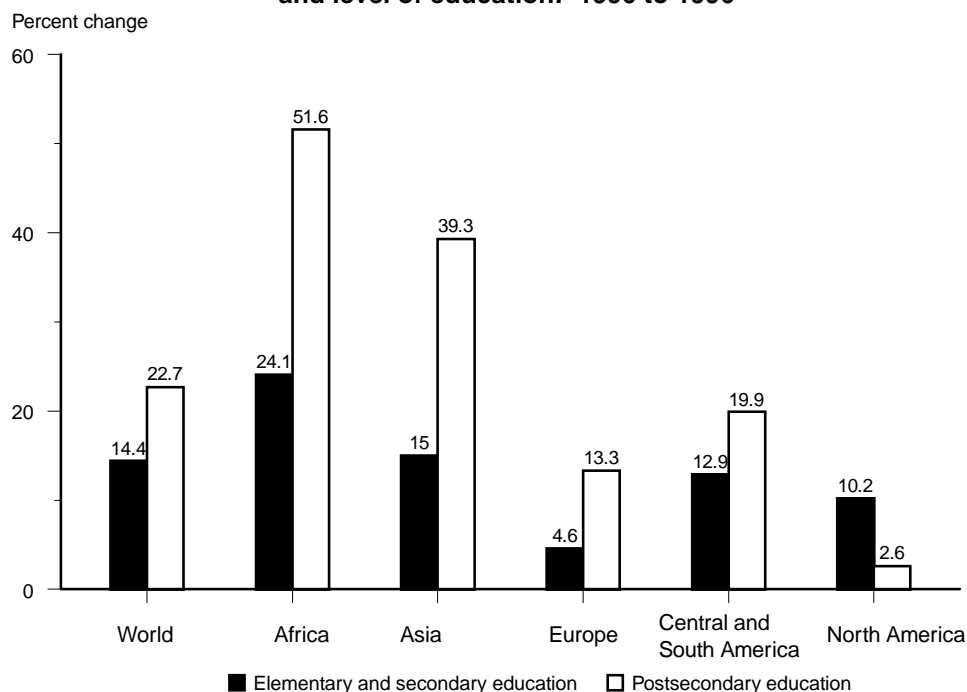
Zealand (17 percent), and the Netherlands (19 percent) (table 417).

Finances

In general, higher income countries spend more public funds per student than lower income countries. At the primary level of education, Luxembourg, Norway, Switzerland, Denmark, Sweden, and the United States ranked at the upper end of public per pupil expenditures in 1995. For primary education per student, Norway spent about \$7,639 per student, Switzerland spent \$5,760, Denmark spent 5,560, Sweden spent \$5,004 and the United States spent \$4,772 per student. At the secondary level, Luxembourg, Iceland, Switzerland, and the United States had expenditures over \$6,000 per student. The governments of Switzerland, Sweden, Germany, Netherlands, and the United States spent relatively large amounts per student in higher education. Switzerland spent \$14,460, Sweden spent \$11,488, Germany spent \$8,309, Netherlands spent \$8,056 and the United States spent \$7,813 (table 418).

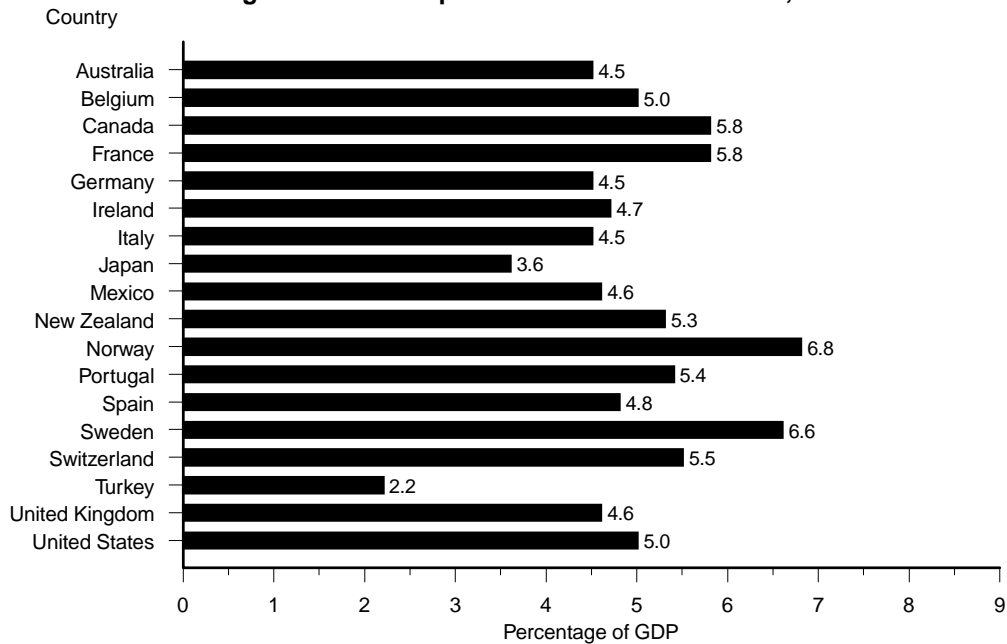
A comparison of public expenditures on education as a percent of gross domestic product (GDP) in OECD countries shows that national investment in education in 1995 ranged from 2.2 percent of GDP in Turkey to 6.8 percent in Norway (table 419).

Figure 28.-Percent change in enrollment, by area of the world and level of education: 1990 to 1996



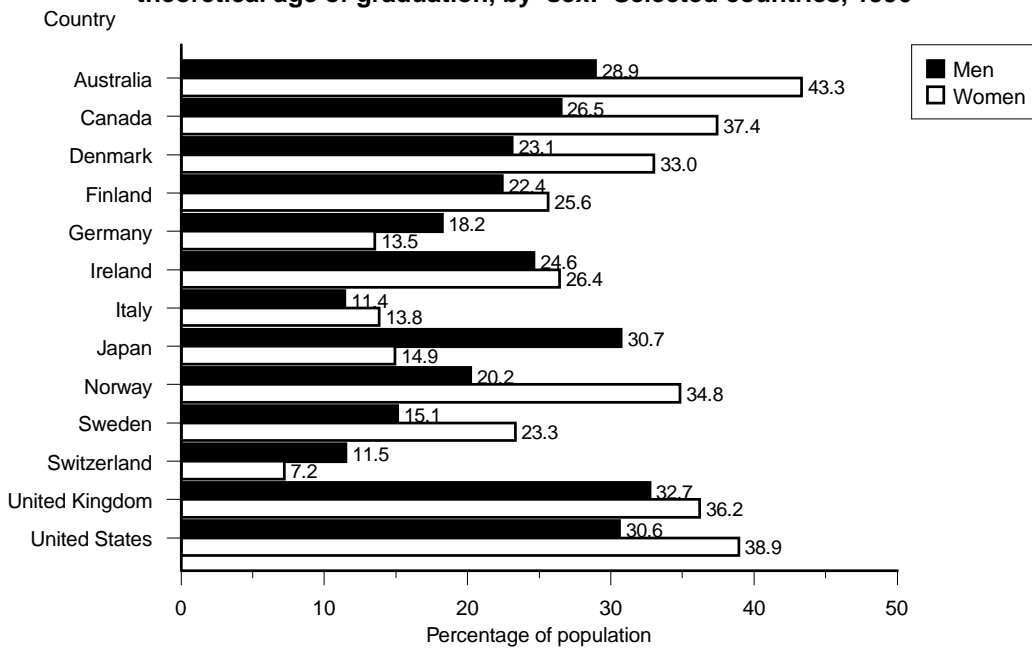
SOURCE: United Nations Educational, Scientific, and Cultural Organization, Paris, *Statistical Yearbook*, various years.

Figure 29.-Public expenditures for education as a percentage of the gross domestic product: Selected countries, 1995



SOURCE: Organization for Economic Cooperation and Development, unpublished data.

Figure 30.-Bachelor's degree recipients as a percentage of population of the theoretical age of graduation, by sex: Selected countries, 1996



SOURCE: Organization for Economic Cooperation and Development, unpublished data.

Figure 31.-Average mathematics performance of other countries compared with the United States: 1995

| Fourth grade (in most nations) | | | End of secondary education | | |
|---|-------------|------------------------|---|-------------|------------|
| Average scores significantly higher than the United States | | | Average scores significantly higher than the United States | | |
| Singapore | | | (Netherlands) | (Norway) | (Austria) |
| Korea | | | Sweden | (France) | (Slovenia) |
| Japan | | | (Denmark) | New Zealand | (Germany) |
| Hong Kong | | | Switzerland | (Australia) | Hungary |
| (Netherlands) | | | (Iceland) | (Canada) | |
| Czech Republic | | | | | |
| (Austria) | | | | | |
| Average scores not significantly different from the United States | | | Average scores not significantly different from the United States | | |
| (Slovenia) | Canada | | (Italy) | | |
| Ireland | (Israel) | | (Russian Federation) | | |
| (Hungary) | | | (Lithuania) | | |
| (Australia) | | | Czech Republic | | |
| Average scores significantly lower than the United States | | | Average scores significantly lower than the United States | | |
| (Latvia) | Norway | Portugal | (Cyprus) | | |
| Scotland | New Zealand | Iceland | (South Africa) | | |
| England | Greece | Iran, Islamic Republic | | | |
| Cyprus | (Thailand) | (Kuwait) | | | |

NOTE.-Nations not meeting international guidelines are shown in parentheses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Pursuing Excellence: A Study of U.S. Fourth-Grade Mathematics and Science Achievement in International Context*, 1997 and *Pursuing Excellence: A Study of U.S. Twelfth-Grade Mathematics and Science Achievement in International Context*, 1998.

Figure 32.-Average science performance of other countries compared with the United States: 1995

| Fourth grade (in most nations) | | | End of secondary education | | |
|---|-------------|------------------------|---|-------------|------------|
| Average scores significantly higher than the United States | | | Average scores significantly higher than the United States | | |
| Korea | | | Sweden | (Canada) | (Austria) |
| | | | (Netherlands) | New Zealand | (Slovenia) |
| | | | (Iceland) | (Australia) | (Denmark) |
| | | | (Norway) | Switzerland | |
| Average scores not significantly different from the United States | | | Average scores not significantly different from the United States | | |
| Japan | | | (Germany) | (Italy) | |
| (Austria) | | | (France) | Hungary | |
| (Australia) | | | Czech Republic | (Lithuania) | |
| (Netherlands) | | | (Russian Federation) | | |
| Czech Republic | | | | | |
| Average scores significantly lower than the United States | | | Average scores significantly lower than the United States | | |
| England | Hong Kong | Iceland | (Cyprus) | | |
| Canada | (Hungary) | Greece | (South Africa) | | |
| Singapore | New Zealand | Portugal | | | |
| (Slovenia) | Norway | Cyprus | | | |
| Ireland | (Latvia) | (Thailand) | | | |
| Scotland | (Israel) | Iran, Islamic Republic | | | |
| | | (Kuwait) | | | |

NOTE.-Nations not meeting international guidelines are shown in parentheses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Pursuing Excellence: A Study of U.S. Fourth-Grade Mathematics and Science Achievement in International Context*, 1997 and *Pursuing Excellence: A Study of U.S. Twelfth-Grade Mathematics and Science Achievement in International Context*, 1998.

Table 397.—School-age populations as a percent of total population: Selected countries, 1985, 1990, 1995, and 1996

| Country | 5- to 13-year-olds as a percent of total population | | | | 14- to 17-year-olds as a percent of total population | | | |
|----------------------------|---|------|------|-------------------|--|------|------|-------------------|
| | 1985 | 1990 | 1995 | 1996 ¹ | 1985 | 1990 | 1995 | 1996 ² |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Australia | 14.5 | 13.1 | 12.9 | 14.0 | 6.6 | 6.4 | 5.6 | 7.0 |
| Belgium | 11.4 | 10.9 | 10.7 | 12.0 | 5.8 | 5.1 | 4.9 | 6.0 |
| Canada | 12.8 | 12.4 | 12.2 | 13.0 | 6.1 | 5.5 | 5.4 | 7.0 |
| Czech Republic | — | — | 11.6 | 13.0 | — | — | 6.5 | 8.0 |
| Denmark | 12.0 | 10.1 | 9.7 | 11.0 | 5.8 | 5.7 | 4.7 | 6.0 |
| Finland | 11.5 | 11.8 | 11.4 | 13.0 | 5.6 | 4.9 | 5.1 | 6.0 |
| France | 12.8 | 12.1 | 12.0 | 13.0 | 6.2 | 5.8 | 5.3 | 7.0 |
| Germany ³ | 9.1 | 8.7 | 10.0 | 11.0 | 6.1 | 4.1 | 4.3 | 5.0 |
| Greece | — | — | 10.7 | 12.0 | — | 5.5 | 5.8 | 7.0 |
| Iceland | 15.7 | 15.0 | 14.3 | 16.0 | 6.7 | 6.8 | 6.4 | 8.0 |
| Ireland | 17.9 | 17.5 | 15.2 | 17.0 | 7.7 | 8.0 | 7.8 | 9.0 |
| Italy | 12.7 | 10.3 | 9.1 | 10.0 | 6.5 | 6.0 | 4.8 | 6.0 |
| Japan | 14.0 | 11.8 | 10.2 | 11.0 | 6.2 | 6.5 | 5.4 | 7.0 |
| Korea | — | — | 14.5 | 15.0 | — | — | 7.1 | 9.0 |
| Luxembourg | 10.2 | 10.1 | 10.5 | 12.0 | 5.5 | 4.4 | 4.4 | 5.0 |
| Netherlands | 12.0 | 10.7 | 10.8 | 12.0 | 6.8 | 5.4 | 4.8 | 6.0 |
| New Zealand | 15.3 | 13.5 | 13.5 | 15.0 | 7.5 | 6.7 | 5.7 | 7.0 |
| Norway | 12.5 | 11.0 | 11.2 | 13.0 | 6.4 | 5.8 | 4.9 | 6.0 |
| Portugal | 15.3 | 14.3 | 10.9 | 12.0 | 6.9 | 6.8 | 6.1 | 8.0 |
| Russian Federation | — | — | 14.3 | 16.0 | — | — | 5.8 | 7.0 |
| Spain | 15.0 | 12.9 | 10.2 | 11.0 | 6.8 | 6.8 | 6.2 | 8.0 |
| Sweden | 11.3 | 10.2 | 10.8 | 12.0 | 5.4 | 5.2 | 4.6 | 6.0 |
| Switzerland | 10.6 | 10.1 | 10.4 | 12.0 | 5.8 | 4.8 | 4.5 | 6.0 |
| Turkey | 20.6 | 20.6 | 19.7 | 20.0 | 8.7 | 8.9 | 8.8 | 11.0 |
| United Kingdom | 11.4 | 11.1 | 11.6 | 13.0 | 6.3 | 5.2 | 4.8 | 6.0 |
| United States | 12.6 | 12.8 | 13.0 | 15.0 | 6.2 | 5.4 | 5.5 | 7.0 |

¹ 1996 data are for the 5-14 year old population.² 1996 data are for the 15-19 year old population.³ Data for 1985 are for the former West Germany.

—Data not available.

SOURCE: Organization for Economic Cooperation and Development, *Education at a Glance*, various years; and unpublished data. (This table was prepared August 1999.)**Table 398.—Percent of population enrolled in secondary and postsecondary institutions, by age group: Selected countries, 1985, 1990, and 1996**

| Country | Secondary schools, 16 years old ¹ | | | Secondary schools, 17 years old ¹ | | | Postsecondary institutions | | | | | | | | |
|----------------------------------|--|------|-------|--|------|------|----------------------------|------|------|--------------------|------|------|--------------------|------|------|
| | 1985 | 1990 | 1996 | 1985 | 1990 | 1996 | 18 to 21 years old | | | 22 to 25 years old | | | 26 to 29 years old | | |
| | | | | | | | 1985 | 1990 | 1996 | 1985 | 1990 | 1996 | 1985 | 1990 | 1996 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Belgium | 90.0 | — | 100.0 | 80.9 | — | 97.0 | 24.5 | — | 39.6 | 7.2 | — | 15.4 | 1.5 | — | 4.0 |
| Canada | — | — | 91.0 | — | — | 69.0 | — | — | 40.5 | — | — | 21.9 | — | — | 9.1 |
| Denmark | 31.2 | 34.6 | 93.0 | 69.3 | 73.1 | 82.0 | 7.4 | 7.4 | 8.5 | 16.3 | 17.9 | 23.5 | 8.2 | 9.3 | 12.1 |
| Finland | 74.6 | 89.7 | 93.0 | 80.5 | 81.7 | 92.0 | 9.3 | 13.6 | 18.2 | 17.3 | 20.7 | 28.8 | 7.9 | 10.2 | 13.6 |
| France | 67.0 | 68.2 | 96.0 | 72.4 | 79.7 | 90.0 | 19.3 | 24.6 | 36.0 | 10.0 | 11.8 | 18.6 | 4.3 | 3.9 | 4.4 |
| Germany ² | 52.3 | 46.5 | 97.0 | 82.7 | 81.2 | 92.0 | 8.8 | 8.5 | 10.8 | — | 15.9 | 17.2 | 8.9 | 10.3 | 11.8 |
| Ireland | — | 79.2 | 89.0 | — | 68.0 | 71.0 | — | 20.5 | 31.4 | — | — | — | — | — | — |
| Japan | — | 93.5 | 98.0 | — | 88.6 | 95.0 | — | — | — | — | — | — | — | — | — |
| Netherlands | 41.7 | 45.0 | 98.0 | 55.6 | 58.5 | 90.0 | 14.4 | 17.9 | 24.0 | 11.9 | 13.4 | 19.2 | 5.7 | 4.7 | 5.4 |
| New Zealand | — | 79.9 | 98.0 | — | 57.2 | 77.0 | — | 20.7 | 29.4 | — | 14.8 | 13.8 | — | — | 7.1 |
| Norway | 83.4 | 90.4 | 94.0 | 76.1 | 82.6 | 93.0 | 8.6 | 13.5 | 19.0 | 13.9 | 17.4 | 24.8 | 6.2 | 7.5 | 10.5 |
| Portugal | 18.0 | — | 77.0 | 22.3 | — | 71.0 | 5.9 | — | 19.3 | 5.4 | — | 16.0 | 2.3 | — | 6.1 |
| Spain | 58.2 | 70.6 | 83.0 | 50.9 | 62.1 | 76.0 | 15.0 | 21.3 | 27.3 | 10.7 | 13.5 | 19.8 | 4.0 | 4.5 | 6.2 |
| Sweden | 86.7 | 83.1 | 97.0 | 82.4 | 84.6 | 96.0 | 7.8 | 8.7 | 13.7 | 11.3 | 11.4 | 17.9 | 6.5 | 6.1 | 8.0 |
| Switzerland | 58.1 | 61.9 | 86.0 | 78.8 | 81.7 | 82.0 | 5.7 | 6.4 | 7.6 | 10.6 | 12.1 | 15.3 | 5.2 | 6.4 | 7.4 |
| Turkey | 20.5 | 27.3 | — | 12.7 | 17.3 | — | — | 7.3 | — | — | 4.3 | — | — | 2.2 | — |
| United Kingdom | 67.0 | 75.6 | 82.0 | 45.9 | 57.4 | 72.0 | 15.0 | 16.1 | 26.9 | 7.4 | 10.6 | 9.4 | — | — | 4.8 |
| United States ³ | 83.6 | 84.8 | 86.0 | 78.1 | 78.4 | 79.0 | 33.2 | 35.6 | 34.6 | 14.6 | 17.3 | 21.5 | 8.2 | 8.6 | 11.1 |

¹ Includes full-time and part-time enrollment.² Data for 1985 are for the former West Germany.³ Postsecondary includes higher education only.

—Data not available.

NOTE.—Increased enrollment rates in some countries may be due to more complete reporting.

SOURCE: Organization for Economic Cooperation and Development, *Education at a Glance*, various years; and unpublished data. (This table was prepared August 1999.)

Table 399.—Estimated population, school enrollment, and teachers in major areas of the world: 1980, 1990, 1995, and 1996

| Item | World total ¹ | Major areas of the world | | | | | |
|---|--------------------------|--------------------------|-------------------|---------------------|--|-------------------------------|----------------------|
| | | Africa ² | Asia ³ | Europe ⁴ | Central and South America ⁵ | Northern America ⁵ | Oceania ⁶ |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1980 | | | | | | | |
| Population, all ages, ⁷ in thousands | 4,447,090 | 475,714 | 2,641,312 | 693,075 | 359,307 | 255,109 | 22,573 |
| Enrollment, all levels, in thousands | 857,052 | 78,029 | 495,087 | 131,762 | 87,315 | 60,043 | 4,815 |
| First (primary) level ⁸ | 541,444 | 62,128 | 336,068 | 52,471 | 65,414 | 22,611 | 2,752 |
| Second level ⁹ | 264,521 | 14,360 | 144,753 | 62,876 | 16,972 | 23,913 | 1,647 |
| Third level ¹⁰ | 51,087 | 1,541 | 14,266 | 16,416 | 4,930 | 13,518 | 416 |
| Teachers, all levels, in thousands | 38,263 | 2,341 | 19,616 | 8,224 | 3,731 | 4,079 | 272 |
| First (primary) level ⁸ | 19,046 | 1,663 | 10,874 | 2,541 | 2,260 | 1,580 | 129 |
| Second level ⁹ | 15,368 | 584 | 7,524 | 4,385 | 1,083 | 1,679 | 112 |
| Third level ¹⁰ | 3,848 | 94 | 1,218 | 1,297 | 388 | 820 | 31 |
| Public expenditures on education, in millions of U.S. dollars | \$516,400 | \$22,900 | \$93,800 | \$200,600 | \$33,500 | \$155,100 | \$10,400 |
| As a percent of gross national product | 4.8 | 5.3 | 4.0 | ¹¹ 5.1 | 3.8 | 5.2 | 5.6 |
| 1990 | | | | | | | |
| Population, all ages, ⁷ in thousands | 5,281,986 | 629,389 | 3,184,342 | 722,109 | 437,822 | 282,020 | 26,304 |
| Enrollment, all levels, in thousands | 980,993 | 107,813 | 569,907 | 131,159 | 104,910 | 62,008 | 5,197 |
| First (primary) level ⁸ | 596,791 | 80,585 | 364,204 | 48,968 | 75,504 | 24,811 | 2,720 |
| Second level ⁹ | 315,555 | 24,373 | 182,321 | 63,364 | 22,079 | 21,569 | 1,849 |
| Third level ¹⁰ | 68,647 | 2,855 | 23,382 | 18,828 | 7,326 | 15,629 | 628 |
| Teachers, all levels, in thousands | 47,083 | 3,791 | 24,441 | 9,354 | 5,165 | 4,001 | 331 |
| First (primary) level ⁸ | 22,593 | 2,390 | 12,691 | 2,780 | 3,006 | 1,582 | 143 |
| Second level ⁹ | 19,352 | 1,241 | 9,932 | 5,065 | 1,519 | 1,449 | 146 |
| Third level ¹⁰ | 5,138 | 160 | 1,818 | 1,509 | 640 | 969 | 41 |
| Public expenditures on education, in millions of U.S. dollars | \$986,500 | \$25,700 | \$199,800 | \$367,500 | \$44,600 | \$330,300 | \$18,600 |
| As a percent of gross national product | 4.8 | 5.6 | 3.7 | ¹¹ 5.1 | 4.1 | 5.4 | 5.6 |
| 1995 | | | | | | | |
| Population, all ages, ⁷ in thousands | 5,686,775 | 719,497 | 3,437,791 | 728,034 | 476,641 | 296,644 | 28,168 |
| Enrollment, all levels, in thousands | 1,105,367 | 130,308 | 646,855 | 137,836 | 116,672 | 66,511 | 7,186 |
| First (primary) level ⁸ | 650,876 | 95,667 | 395,725 | 47,367 | 82,490 | 26,500 | 3,127 |
| Second level ⁹ | 373,200 | 30,698 | 220,333 | 69,453 | 25,841 | 23,984 | 2,891 |
| Third level ¹⁰ | 81,291 | 3,944 | 30,796 | 21,016 | 8,342 | 16,026 | 1,167 |
| Teachers, all levels, in thousands | 52,081 | 4,474 | 26,977 | 10,104 | 5,816 | 4,269 | 439 |
| First (primary) level ⁸ | 24,340 | 2,802 | 13,515 | 2,848 | 3,366 | 1,649 | 161 |
| Second level ⁹ | 21,759 | 1,468 | 11,283 | 5,561 | 1,703 | 1,528 | 217 |
| Third level ¹⁰ | 5,981 | 205 | 2,180 | 1,696 | 747 | 1,092 | 61 |
| 1996 | | | | | | | |
| Population, all ages, ⁷ in thousands | 5,767,443 | 738,740 | 3,488,028 | 728,561 | 484,309 | 299,250 | 28,555 |
| Enrollment, all levels, in thousands | 1,127,901 | 134,610 | 661,015 | 138,812 | 118,993 | 67,119 | 7,353 |
| First (primary) level ⁸ | 661,750 | 98,061 | 402,264 | 47,619 | 83,920 | 26,737 | 3,150 |
| Second level ⁹ | 381,890 | 32,222 | 226,169 | 69,853 | 26,291 | 24,356 | 3,000 |
| Third level ¹⁰ | 84,261 | 4,327 | 32,582 | 21,339 | 8,781 | 16,028 | 1,204 |
| Teachers, all levels, in thousands | 52,270 | 4,649 | 27,190 | 9,742 | 5,937 | 4,306 | 446 |
| First (primary) level ⁸ | 24,641 | 2,890 | 13,635 | 2,866 | 3,428 | 1,661 | 161 |
| Second level ⁹ | 21,535 | 1,537 | 11,327 | 5,173 | 1,722 | 1,552 | 223 |
| Third level ¹⁰ | 6,093 | 222 | 2,228 | 1,703 | 787 | 1,092 | 61 |

¹ Enrollment and teacher data exclude the Democratic People's Republic of Korea.² Excludes Rodrigues and other small islands.³ Includes 5 countries of the former U.S.S.R., the Democratic People's Republic of Korea, Arab states, and both the Asian and the European portions of Turkey.⁴ Includes all countries of the former U.S.S.R. except Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, and Turkmenistan.⁵ Northern America includes Bermuda, Canada, Greenland, St. Pierre and Miquelon, and the United States of America. Hawaii is included in Northern America rather than Oceania. Central and South America includes Latin America and the Caribbean.⁶ Includes American Samoa, Australia, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, New Zealand, Niue, Norfolk Island, Pacific Islands, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and the Republic of Vanuatu.⁷ Estimate of midyear population.⁸ First level enrollment generally consists of elementary school, grades 1-6.⁹ Second level enrollment includes general education, teacher training (at the second level), and technical and vocational education. This level generally corresponds to secondary education in the United States, grades 7-12.¹⁰ Third level enrollment includes college and university enrollment, and technical and vocational education beyond the high school level. There is considerable variation in reporting from country to country.¹¹ This figure is for Europe, not including the former U.S.S.R.

NOTE.—Because of rounding, details may not add to totals.

SOURCE: United Nations Educational, Scientific, and Cultural Organization, Paris, 1998 *Statistical Yearbook*. (This table was prepared August 1999.)

Table 401.—Pupils per teacher in public and private elementary and secondary schools, by level of education: Selected countries, 1985 to 1996

| Country | Elementary | | | | | Junior high schools (lower secondary) | | | | | Senior high schools (upper secondary) | | | | |
|----------------------------|-------------------|-------------------|-------------------|------|------|--|------|------|------|------|--|------|-------------------|------|------|
| | 1985 | 1990 | 1992 | 1994 | 1996 | 1985 | 1990 | 1992 | 1994 | 1996 | 1985 | 1990 | 1992 | 1994 | 1996 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Australia | ¹ 13.8 | — | ² 18.4 | 18.5 | 18.1 | — | — | — | — | — | 3.2 | — | — | — | — |
| Austria | 11.3 | 11.6 | 12.2 | 11.9 | 12.7 | 9.2 | 7.7 | 7.7 | 8.3 | 9.2 | 15.2 | 12.4 | 11.6 | 7.8 | 8.5 |
| Belgium | — | — | 13.7 | 13.3 | — | — | — | — | — | — | — | — | — | — | — |
| Canada | 18.1 | 17.1 | — | 16.5 | 17.0 | 16.0 | 15.5 | — | 19.1 | 20.0 | 16.0 | 15.3 | — | 19.1 | 19.5 |
| Denmark | 12.7 | 11.2 | ³ 10.9 | 11.0 | 11.2 | 10.2 | 9.3 | 9.1 | 9.0 | 10.1 | 14.8 | 13.3 | ³ 10.4 | 9.1 | 12.1 |
| France | — | — | ⁴ 20.4 | 19.6 | 19.5 | — | — | — | — | — | — | — | — | — | — |
| Germany ⁵ | 20.7 | 20.3 | ⁶ 19.6 | 20.5 | 20.9 | 16.9 | 14.6 | 14.6 | 15.7 | 16.0 | 23.7 | 21.0 | ⁶ 19.0 | 12.0 | 13.1 |
| Ireland | — | — | 25.6 | 24.3 | 22.6 | — | — | — | — | — | 7.2 | 8.3 | — | — | — |
| Italy | 12.8 | 10.7 | 10.9 | 10.2 | 11.2 | 9.6 | 8.5 | 9.0 | 8.0 | 10.8 | 10.8 | 10.7 | 8.8 | 8.9 | 9.8 |
| Japan | — | ¹ 20.8 | ⁷ 19.8 | 19.2 | 19.7 | — | 18.6 | 16.8 | 16.2 | 16.2 | — | 16.2 | ⁷ 16.4 | 15.8 | 15.6 |
| Netherlands | 20.2 | 19.2 | ⁸ 23.6 | 22.4 | 20.0 | 12.7 | 12.4 | — | 16.9 | — | — | — | — | 16.5 | — |
| New Zealand | 20.1 | 19.1 | 18.5 | 20.2 | 22.0 | — | — | — | 16.7 | 18.1 | — | — | — | 13.2 | 14.1 |
| Norway | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Portugal | — | — | — | 12.2 | — | — | — | — | — | — | — | — | — | — | — |
| Spain | 26.8 | 21.2 | 21.2 | 19.2 | 18.0 | 21.4 | 18.8 | 17.6 | 18.2 | 17.8 | 15.3 | 14.8 | 15.9 | 14.8 | 14.2 |
| Sweden | 11.6 | 10.6 | 11.9 | 12.5 | 12.7 | 10.8 | 10.2 | 10.6 | 10.9 | 12.2 | 13.1 | 11.9 | 16.0 | 14.6 | 15.2 |
| Turkey | 31.1 | 30.6 | 29.3 | 27.4 | — | 41.3 | 48.4 | 47.5 | 45.6 | — | 11.0 | 12.1 | 13.2 | 14.1 | — |
| United Kingdom | 19.7 | 22.0 | 20.8 | 20.7 | 21.3 | — | 18.5 | 15.9 | 16.9 | 16.0 | 11.1 | 13.9 | ⁹ 14.8 | 15.1 | 15.3 |
| United States | 17.0 | 15.6 | — | — | 16.9 | 16.5 | 15.9 | 16.8 | — | 17.5 | 16.2 | 15.8 | 15.0 | — | 14.7 |

¹ Public schools only.² Teachers include principals, deputy principals and senior teachers mainly involved in administrative tasks.³ Full-time and part-time teachers are estimates. Distribution by school level (elementary and junior high levels) is also an estimate. Kindergartens are classified as public institutions.⁴ The number of full-time equivalent teachers does not take into account the additional hours given by teachers. In public secondary education institutions, an increase of 6.6 percent of total full-time equivalents would be observed if the additional hours were taken into account. The number of teachers in independent private secondary education institutions are entirely estimates. About 18 percent of all the pedagogical and support staff, and about 7 percent of all the staff employed in education have been estimated.⁵ Data for 1985 are for the former West Germany.⁶ Most components are estimates.⁷ Principals and vice-principals are included. Full-time equivalents of part-time teachers are not included.⁸ Excludes direction staff.⁹ Some teachers at lower secondary education are included in upper secondary education.

—Data not available.

SOURCE: Organization for Economic Cooperation and Development, *Education at a Glance*, various years; and unpublished data. (This table was prepared August 1999.)**Table 402.—Geography proficiency of 13-year-olds in educational systems participating in the International Assessment of Educational Progress: 1991**

| Country | Average percent correct | | | |
|------------------------------------|----------------------------------|--|---------------------------------------|---------------------------------------|
| | All geography items ¹ | Geographic skills and tools ² | Physical geography items ³ | Cultural geography items ⁴ |
| 1 | 2 | 3 | 4 | 5 |
| Hungary | 69.8 (0.6) | 76.3 (0.5) | 67.8 (0.7) | 65.0 (0.7) |
| Slovenia | 65.3 (0.6) | 67.9 (0.5) | 63.6 (0.7) | 64.3 (0.9) |
| Canada ⁵ | 63.0 (0.5) | 69.5 (0.4) | 61.0 (0.6) | 58.2 (0.6) |
| Former U.S.S.R. ⁶ | 62.6 (1.1) | 72.2 (0.9) | 61.2 (1.0) | 53.4 (1.8) |
| United States ⁷ | 61.9 (0.8) | 69.4 (0.6) | 58.3 (1.0) | 58.1 (1.0) |
| Spain ⁸ | 60.1 (0.7) | 62.4 (0.9) | 58.9 (0.7) | 58.9 (1.1) |
| Korea | 59.7 (0.5) | 67.8 (0.5) | 52.1 (0.7) | 60.3 (0.6) |
| Ireland | 58.5 (0.6) | 62.7 (0.6) | 59.5 (0.8) | 52.3 (0.8) |
| Scotland ⁷ | 58.3 (0.6) | 66.2 (0.5) | 57.1 (0.8) | 50.6 (0.8) |

¹ All 24 geography items.² Eight items testing ability to use maps, charts, and globes.³ Nine items testing knowledge of location of physical features and concepts of climate.⁴ Seven items testing knowledge of cultural entities and interactions between people and their environment.⁵ Eight provinces.⁶ Schools in 14 republics where instruction is in Russian.⁷ Combined school and student participation rate below 80 percent but at least 70 percent.⁸ Schools where instruction is in Spanish, in all regions except Cataluna.

NOTE.—Standard errors appear in parentheses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, International Assessment of Educational Progress, *Learning About The World*, 1992. (This table was prepared May 1993.)

Table 404.—Instructional practices and time spent teaching mathematics in 8th-grade, by country: 1994–95

| Country | Percent of students whose teachers report using each organizational approach "most or every lesson" | | | | | | Average number of hours mathematics is taught weekly to mathematics classes | | | | | | | |
|--|---|--|--|---|--|---|---|------------|-------------------------------------|------------|-------------------------------------|------------|-----------------|------------|
| | Work together as a class and students respond to one another | Work together as a class and teacher teaches whole class | Work individually with assistance from teacher | Work individually without assistance from teacher | Work in pairs or groups with assistance from teacher | Work in pairs or groups without assistance from teacher | Less than 2 hours | | At least 2, but less than 3.5 hours | | At least 3.5, but less than 5 hours | | 5 hours or more | |
| | | | | | | | Percent | Mean score | Percent | Mean score | Percent | Mean score | Percent | Mean score |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Australia ¹ | ² 14 | ² 46 | ² 64 | ² 27 | ² 25 | ² 9 | ² 5 (1.7) | 528 (19.5) | 50 (3.7) | 518 (6.2) | 44 (3.7) | 552 (7.6) | 1 (0.7) | — |
| Austria ¹ | ² 6 | ² 52 | ² 51 | ² 23 | ² 19 | ² 7 | ² 0 (0.0) | — | 99 (0.1) | 549 (4.1) | 1 (0.1) | — | 0 (0.0) | — |
| Belgium (Flemish) | 10 | 59 | 57 | 36 | 6 | 5 | ³ 0 (0.0) | — | 50 (4.4) | 572 (5.6) | 50 (4.4) | 603 (5.4) | 0 (0.0) | — |
| Belgium (French) ¹ | ³ 7 | ³ 38 | ³ 55 | ³ 29 | ³ 11 | ³ 5 | ³ 0 (0.0) | — | 3 (1.8) | 486 (12.9) | 83 (4.2) | 544 (4.7) | 14 (3.8) | 564 (10.0) |
| Bulgaria ¹ | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Canada | ² 12 | 37 | 57 | ² 25 | ² 28 | ² 14 | 3 (1.2) | 528 (11.8) | 31 (3.8) | 521 (5.0) | 50 (3.6) | 537 (4.3) | 17 (3.1) | 520 (10.2) |
| Colombia ¹ | 25 | 41 | 55 | ² 19 | 44 | ² 22 | ² 4 (2.0) | 389 (8.2) | 25 (5.5) | 367 (8.8) | 58 (5.4) | 397 (3.9) | 13 (3.3) | 390 (8.2) |
| Cyprus | ² 13 | ² 61 | ² 73 | ² 23 | ² 26 | ² 9 | — | — | — | — | — | — | — | — |
| Czech Republic | 5 | 47 | 72 | 42 | 13 | 8 | 1 (0.9) | — | 6 (2.0) | 587 (17.2) | 90 (2.7) | 561 (5.1) | 3 (1.6) | 535 (10.2) |
| Denmark ¹ | 5 | 41 | 74 | 16 | 18 | 4 | — | — | — | — | — | — | — | — |
| England ¹ | ³ 19 | ³ 46 | ³ 57 | ³ 25 | ³ 14 | ³ 8 | — | — | — | — | — | — | — | — |
| France | 11 | 48 | 56 | 26 | 17 | 4 | ² 2 (1.4) | — | 10 (3.2) | 532 (13.4) | 87 (3.3) | 539 (3.9) | 2 (1.3) | — |
| Germany ¹ | ³ 23 | ³ 70 | ³ 54 | ³ 15 | ³ 20 | ³ 9 | ³ 2 (1.5) | — | 85 (3.1) | 523 (5.3) | 12 (2.9) | 463 (13.3) | 1 (0.9) | — |
| Greece ¹ | 4 | 58 | 60 | 18 | 14 | 3 | 4 (1.7) | 459 (10.8) | 88 (2.8) | 486 (3.5) | 3 (1.6) | 459 (12.3) | 4 (1.6) | 480 (8.9) |
| Hong Kong | 11 | 37 | 62 | 17 | 9 | 4 | 5 (2.4) | 612 (47.4) | 26 (5.2) | 590 (19.5) | 63 (5.8) | 590 (7.6) | 6 (2.9) | 567 (30.1) |
| Hungary | 11 | 60 | 65 | 22 | 7 | 1 | 0 (0.0) | — | 75 (3.6) | 538 (3.9) | 23 (3.6) | 536 (7.0) | 1 (1.0) | — |
| Iceland | ² 2 | ² 39 | ² 82 | ² 38 | ² 32 | ² 17 | ² 0 (0.0) | — | 90 (2.9) | 492 (5.3) | 8 (2.9) | 467 (3.5) | 1 (0.2) | — |
| Iran, Islamic Republic | 33 | 66 | 55 | 8 | 42 | 10 | — | — | — | — | — | — | — | — |
| Ireland | ² 7 | 67 | 47 | 37 | ² 9 | ² 6 | ² 1 (0.7) | — | 86 (3.7) | 524 (6.4) | 12 (3.4) | 555 (15.2) | 1 (1.1) | — |
| Israel ¹ | ² 70 | ² 65 | ² 35 | ² 68 | ² 51 | ² 62 | ² 6 (4.1) | 523 (13.7) | 41 (8.0) | 520 (12.7) | 47 (8.1) | 514 (9.2) | 6 (3.7) | 579 (22.6) |
| Japan | 22 | 78 | 27 | 15 | 7 | 1 | 4 (1.8) | 607 (24.3) | 91 (2.3) | 602 (2.7) | 4 (1.4) | 649 (18.5) | 0 (0.5) | — |
| Korea | 39 | 89 | 41 | 30 | 12 | 11 | 1 (0.7) | — | 90 (3.0) | 610 (2.8) | 5 (1.8) | 608 (13.8) | 5 (2.3) | 604 (19.5) |
| Kuwait ¹ | 3 | 34 | 48 | 14 | 7 | 5 | 2 (1.6) | — | 21 (6.5) | 396 (6.8) | 76 (6.6) | 391 (2.3) | 1 (1.0) | — |
| Latvia (Latvian-speaking schools) ¹ | 24 | 86 | 90 | ² 55 | 28 | ² 11 | 1 (0.5) | — | 30 (4.8) | 491 (5.8) | 62 (5.3) | 492 (4.3) | 8 (2.6) | 489 (15.0) |
| Lithuania ¹ | 10 | 55 | 72 | 25 | 32 | 10 | 1 (0.8) | — | 61 (4.1) | 482 (5.0) | 29 (3.9) | 481 (7.5) | 9 (2.3) | 448 (13.8) |
| Netherlands ¹ | 7 | 56 | 65 | 38 | 49 | 34 | 3 (1.9) | 529 (54.2) | 97 (1.9) | 542 (8.1) | 0 (0.0) | — | 0 (0.0) | — |
| New Zealand | 19 | 52 | 63 | 28 | 25 | 14 | 5 (1.8) | 484 (11.6) | 42 (4.3) | 514 (7.1) | 50 (4.3) | 507 (6.4) | 3 (1.5) | 503 (27.3) |
| Norway | ² 17 | ² 58 | ² 71 | 44 | ² 36 | ² 6 | ² 7 (2.6) | 502 (5.0) | 80 (3.9) | 508 (3.1) | 8 (2.8) | 502 (7.7) | 5 (2.1) | 513 (7.7) |
| Portugal | 10 | 67 | 69 | 5 | 50 | 4 | 1 (0.8) | — | 89 (2.9) | 455 (2.7) | 10 (2.8) | 452 (7.8) | 0 (0.0) | — |
| Romania ¹ | 12 | 86 | 56 | 19 | 18 | 3 | 8 (2.6) | 497 (17.6) | 80 (3.4) | 481 (5.0) | 9 (2.5) | 482 (12.4) | 2 (0.6) | — |
| Russian Federation | 6 | 66 | 65 | 37 | 22 | 13 | 0 (0.0) | — | 17 (3.6) | 519 (8.6) | 70 (5.6) | 533 (5.1) | 14 (4.8) | 567 (18.0) |
| Scotland ¹ | ² 5 | ² 34 | ² 62 | ² 28 | ² 7 | ² 3 | 5 (2.0) | 473 (14.7) | 35 (4.4) | 500 (11.6) | 60 (4.6) | 494 (7.1) | 0 (0.0) | — |
| Singapore | 15 | 61 | 48 | 27 | 20 | 6 | 0 (0.0) | — | 52 (4.7) | 654 (6.9) | 48 (4.7) | 633 (7.6) | 0 (0.0) | — |
| Slovak Republic | 35 | 47 | 50 | 31 | 8 | 7 | 0 (0.0) | — | 2 (1.3) | — | 86 (3.0) | 544 (3.2) | 11 (2.9) | 561 (11.0) |
| Slovenia ¹ | ² 11 | ² 60 | ² 87 | ² 34 | ² 40 | ² 11 | ² 0 (0.0) | — | 87 (3.4) | 542 (4.0) | 12 (3.3) | 525 (9.5) | 1 (0.8) | — |
| South Africa ¹ | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Spain | ² 15 | ² 68 | ² 58 | ² 24 | ² 15 | ² 10 | ² 2 (1.1) | — | 28 (4.0) | 480 (5.5) | 62 (4.7) | 490 (3.6) | 8 (2.6) | 494 (9.2) |
| Sweden | ² 24 | ² 50 | ² 72 | ² 1 | ² 43 | ² 5 | ² 3 (1.2) | 506 (24.2) | 97 (1.3) | 520 (3.2) | 0 (0.4) | — | 0 (0.3) | — |
| Switzerland ¹ | ³ 4 | ³ 48 | ³ 61 | ³ 25 | ³ 35 | ³ 20 | ³ 2 (1.4) | — | 14 (3.4) | 520 (17.8) | 71 (3.5) | 557 (6.5) | 13 (3.0) | 566 (12.4) |
| Thailand ¹ | ² 19 | ³ 58 | ² 41 | ² 18 | ² 22 | ² 5 | — | — | — | — | — | — | — | — |
| United States | ² 22 | ² 49 | ² 50 | ² 19 | ² 26 | ² 12 | ³ 8 (1.4) | 492 (26.2) | 24 (3.4) | 501 (9.9) | 58 (4.4) | 507 (5.4) | 11 (2.8) | 498 (10.0) |

¹ Countries not meeting all International Association for the Evaluation of Educational Achievement's sampling specifications.

² Teacher response data available for 70 to 84 percent of students.

³ Teacher response data available for 50 to 69 percent of students.

—Data not available or not applicable.

NOTE.—Data are for 8th grade or equivalent in most countries. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Mathematics Achievement in the Middle School Years: IEA's Third International Mathematics and Science Study*, 1997, by Albert E. Beaton et al. Copyright © 1996 Boston College, Chestnut Hill, MA. (This table was prepared June 1997.)

Table 405.—Average 8th-grade science scores by content areas, and average time spent studying out of school, by country: 1994–95

| Country | Average percent correct by content area | | | | | | Distribution of daily out-of-school study time in all subjects, with mean science scores | | | | | | | |
|--|---|-----------------|-----------------|-----------------|-----------------|--|--|------------|-----------------------------------|------------|--------------|------------|-------------------|------------|
| | Overall science scores | Earth science | Life science | Physics | Chemistry | Environmental issues and the nature of science | Less than 1 hour | | At least 1, but less than 2 hours | | 2 to 3 hours | | More than 3 hours | |
| | | | | | | | Percent | Mean score | Percent | Mean score | Percent | Mean score | Percent | Mean score |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| International average percent correct | 56 (0.1) | 55 (0.1) | 59 (0.1) | 55 (0.1) | 51 (0.2) | 53 (0.2) | — — | — — | — — | — — | — — | — — | — — | — — |
| Australia ¹ | 60 (0.7) | 57 (0.8) | 63 (0.8) | 60 (0.7) | 54 (0.9) | 62 (1.0) | 15 (0.9) | 505 (6.9) | 46 (1.0) | 556 (4.1) | 22 (0.6) | 557 (4.9) | 17 (0.7) | 546 (5.0) |
| Austria ¹ | 61 (0.7) | 62 (0.8) | 65 (0.7) | 62 (0.7) | 58 (1.1) | 55 (0.9) | 9 (0.8) | 551 (9.9) | 46 (1.3) | 563 (4.8) | 21 (0.9) | 561 (5.0) | 24 (1.2) | 553 (4.8) |
| Belgium (Flemish) | 60 (1.1) | 62 (1.2) | 64 (1.1) | 61 (1.1) | 51 (1.3) | 58 (1.5) | 2 (0.4) | — — | 25 (1.3) | 545 (5.0) | 28 (1.1) | 562 (5.9) | 45 (1.6) | 547 (3.6) |
| Belgium (French) ¹ | 50 (0.7) | 50 (0.9) | 55 (0.9) | 51 (0.7) | 41 (0.8) | 46 (1.0) | 7 (0.8) | 428 (6.9) | 32 (1.0) | 481 (4.7) | 21 (1.3) | 481 (4.5) | 40 (1.5) | 467 (4.0) |
| Bulgaria ¹ | 62 (1.0) | 58 (1.2) | 64 (1.0) | 60 (1.0) | 65 (1.7) | 59 (1.5) | — — | — — | — — | — — | — — | — — | — — | — — |
| Canada | 59 (0.5) | 58 (0.6) | 62 (0.6) | 59 (0.4) | 52 (0.7) | 61 (0.7) | 14 (1.2) | 524 (6.1) | 47 (1.1) | 541 (2.8) | 18 (0.7) | 531 (3.9) | 21 (1.1) | 517 (3.6) |
| Colombia ¹ | 39 (0.8) | 37 (0.8) | 44 (0.9) | 37 (0.8) | 32 (1.0) | 40 (1.1) | 2 (0.4) | — — | 17 (1.1) | 421 (5.3) | 20 (1.2) | 422 (4.9) | 61 (1.9) | 413 (5.8) |
| Cyprus | 47 (0.4) | 46 (0.6) | 49 (0.5) | 46 (0.4) | 45 (0.6) | 46 (0.8) | 9 (0.5) | 430 (7.0) | 19 (0.7) | 468 (4.4) | 26 (0.8) | 475 (3.4) | 46 (0.9) | 466 (2.9) |
| Czech Republic | 64 (0.8) | 63 (1.2) | 69 (0.8) | 64 (0.7) | 60 (1.2) | 59 (1.1) | 13 (1.1) | 558 (9.0) | 57 (1.1) | 579 (3.9) | 17 (0.9) | 582 (7.2) | 13 (0.8) | 560 (6.4) |
| Denmark ¹ | 51 (0.6) | 49 (0.7) | 56 (0.7) | 53 (0.7) | 41 (0.8) | 47 (1.0) | 39 (1.6) | 494 (4.4) | 39 (1.4) | 479 (4.1) | 13 (0.8) | 459 (5.5) | 9 (0.7) | 457 (6.8) |
| England ¹ | 61 (0.6) | 59 (0.8) | 64 (0.8) | 62 (0.6) | 55 (0.8) | 65 (1.0) | — — | — — | — — | — — | — — | — — | — — | — — |
| France | 54 (0.6) | 55 (0.8) | 56 (0.8) | 54 (0.5) | 47 (0.9) | 53 (0.9) | 8 (0.7) | 481 (6.8) | 33 (1.2) | 497 (3.3) | 28 (1.0) | 506 (4.0) | 31 (1.2) | 499 (3.4) |
| Germany ¹ | 58 (1.0) | 57 (1.0) | 63 (1.1) | 57 (1.0) | 54 (1.3) | 51 (1.3) | 14 (1.1) | 505 (8.2) | 51 (1.2) | 541 (4.6) | 18 (1.0) | 544 (7.0) | 17 (0.9) | 525 (6.5) |
| Greece ¹ | 52 (0.5) | 49 (0.6) | 54 (0.6) | 53 (0.5) | 51 (0.5) | 51 (1.0) | 6 (0.6) | 473 (4.8) | 14 (0.7) | 497 (5.0) | 21 (0.7) | 500 (3.1) | 59 (1.2) | 502 (2.5) |
| Hong Kong | 58 (1.0) | 54 (1.0) | 61 (1.0) | 58 (0.9) | 55 (1.0) | 55 (1.3) | 13 (1.0) | 489 (7.3) | 32 (0.9) | 519 (4.7) | 25 (0.9) | 534 (4.8) | 30 (1.1) | 534 (5.2) |
| Hungary | 61 (0.6) | 60 (0.8) | 65 (0.7) | 60 (0.6) | 60 (0.8) | 53 (0.8) | 4 (0.4) | 519 (10.0) | 33 (1.1) | 553 (4.4) | 22 (0.9) | 557 (5.6) | 41 (1.3) | 557 (3.0) |
| Iceland | 52 (0.9) | 50 (1.2) | 58 (1.0) | 53 (0.9) | 42 (0.8) | 49 (1.0) | 5 (1.0) | 470 (8.7) | 46 (1.7) | 505 (5.6) | 25 (1.3) | 493 (4.5) | 23 (1.4) | 488 (7.5) |
| Iran, Islamic Republic | 47 (0.6) | 45 (0.6) | 49 (0.6) | 48 (0.7) | 52 (0.8) | 39 (1.1) | 1 (0.2) | — — | 5 (0.5) | 476 (6.0) | 12 (1.0) | 479 (5.2) | 82 (1.3) | 471 (2.7) |
| Ireland | 58 (0.9) | 61 (1.0) | 60 (1.1) | 56 (0.8) | 54 (1.0) | 60 (1.1) | 5 (0.6) | 475 (9.0) | 29 (1.0) | 529 (5.4) | 40 (1.1) | 550 (4.7) | 26 (1.2) | 550 (4.9) |
| Israel ¹ | 57 (1.1) | 55 (1.1) | 61 (1.1) | 57 (1.1) | 53 (1.5) | 52 (1.6) | 5 (0.6) | 532 (13.5) | 36 (2.2) | 555 (7.7) | 26 (1.5) | 523 (6.9) | 33 (2.1) | 505 (5.2) |
| Japan | 65 (0.3) | 61 (0.4) | 71 (0.4) | 67 (0.3) | 61 (0.5) | 60 (0.7) | 13 (0.8) | 551 (4.4) | 39 (0.8) | 573 (2.2) | 20 (0.6) | 572 (3.0) | 28 (1.0) | 577 (2.4) |
| Korea | 66 (0.3) | 63 (0.5) | 70 (0.4) | 65 (0.5) | 63 (0.6) | 64 (0.8) | 15 (0.9) | 544 (5.0) | 32 (1.1) | 564 (2.9) | 25 (0.8) | 562 (3.1) | 29 (1.2) | 581 (3.7) |
| Kuwait ¹ | 43 (0.9) | 43 (1.0) | 45 (1.1) | 43 (0.7) | 40 (1.5) | 39 (1.3) | 3 (0.6) | 400 (10.4) | 13 (1.5) | 436 (7.8) | 19 (1.3) | 432 (7.1) | 65 (1.8) | 431 (3.4) |
| Latvia (Latvian-speaking schools) ¹ | 50 (0.6) | 48 (0.8) | 53 (0.7) | 51 (0.7) | 48 (0.8) | 47 (1.0) | 4 (0.5) | 468 (8.5) | 35 (1.1) | 492 (4.1) | 32 (1.2) | 490 (4.1) | 29 (1.2) | 481 (3.0) |
| Lithuania ¹ | 49 (0.7) | 46 (0.9) | 52 (0.9) | 51 (0.7) | 48 (0.9) | 40 (1.0) | 5 (0.6) | 457 (9.1) | 39 (1.4) | 484 (4.5) | 28 (1.0) | 483 (3.8) | 28 (1.4) | 472 (4.7) |
| Netherlands ¹ | 62 (1.0) | 61 (1.4) | 67 (1.4) | 63 (0.9) | 52 (0.9) | 65 (1.6) | 3 (0.9) | 519 (17.1) | 54 (1.7) | 559 (6.1) | 27 (1.7) | 578 (5.4) | 16 (0.8) | 545 (5.7) |
| New Zealand | 58 (0.8) | 56 (0.9) | 60 (1.0) | 58 (0.7) | 53 (1.1) | 59 (1.2) | 12 (0.9) | 488 (7.6) | 51 (1.2) | 536 (4.6) | 21 (1.0) | 537 (5.7) | 17 (0.9) | 516 (5.7) |
| Norway | 58 (0.4) | 61 (0.6) | 61 (0.5) | 57 (0.4) | 49 (0.6) | 55 (0.8) | 6 (0.5) | 501 (7.3) | 50 (1.2) | 533 (2.5) | 24 (0.9) | 536 (3.4) | 21 (0.9) | 516 (3.7) |
| Portugal | 50 (0.6) | 50 (0.7) | 53 (0.6) | 48 (0.5) | 50 (0.9) | 45 (0.8) | 3 (0.3) | 465 (8.8) | 41 (1.1) | 488 (2.9) | 18 (0.7) | 478 (4.1) | 38 (1.2) | 474 (2.8) |
| Romania ¹ | 50 (0.8) | 49 (1.0) | 55 (1.0) | 49 (0.8) | 46 (1.0) | 42 (1.0) | 9 (0.7) | 460 (11.7) | 16 (1.0) | 468 (7.0) | 15 (0.7) | 487 (5.7) | 60 (1.6) | 499 (5.2) |
| Russian Federation | 58 (0.8) | 58 (0.8) | 62 (0.7) | 57 (0.9) | 57 (1.3) | 50 (0.8) | 4 (0.5) | 511 (10.1) | 33 (1.1) | 542 (4.4) | 25 (1.0) | 538 (4.4) | 38 (1.4) | 543 (4.6) |
| Scotland ¹ | 55 (1.0) | 52 (1.0) | 57 (1.1) | 57 (0.8) | 51 (1.3) | 57 (1.4) | 17 (1.4) | 470 (5.3) | 54 (1.2) | 526 (5.1) | 17 (1.0) | 537 (8.5) | 12 (0.8) | 532 (6.5) |
| Singapore | 70 (1.0) | 65 (1.1) | 72 (1.0) | 69 (0.8) | 69 (1.2) | 74 (1.1) | 2 (0.3) | — — | 7 (0.4) | 604 (8.4) | 13 (0.6) | 617 (7.3) | 78 (0.9) | 607 (5.4) |
| Slovak Republic | 59 (0.6) | 60 (0.7) | 60 (0.6) | 61 (0.6) | 57 (0.8) | 53 (0.9) | 6 (0.5) | 551 (7.1) | 46 (0.9) | 552 (3.7) | 25 (0.7) | 541 (3.8) | 23 (1.0) | 536 (4.7) |
| Slovenia ¹ | 62 (0.5) | 64 (0.7) | 65 (0.6) | 61 (0.6) | 56 (0.9) | 59 (0.9) | 5 (0.5) | 559 (9.2) | 36 (1.0) | 580 (3.5) | 21 (0.8) | 557 (3.2) | 37 (1.1) | 544 (3.3) |
| South Africa ¹ | 27 (1.3) | 26 (1.1) | 27 (1.3) | 27 (1.4) | 26 (1.4) | 26 (1.3) | — — | — — | — — | — — | — — | — — | — — | — — |
| Spain | 56 (0.4) | 57 (0.5) | 58 (0.5) | 55 (0.4) | 51 (0.7) | 53 (0.6) | 3 (0.4) | 482 (7.9) | 26 (1.0) | 522 (2.8) | 18 (0.9) | 522 (3.5) | 53 (1.3) | 516 (2.2) |
| Sweden | 59 (0.6) | 62 (0.7) | 63 (0.7) | 57 (0.5) | 56 (0.7) | 52 (0.8) | 7 (0.6) | 520 (6.0) | 55 (1.2) | 544 (3.2) | 17 (0.8) | 539 (4.9) | 21 (0.9) | 523 (4.9) |
| Switzerland ¹ | 56 (0.5) | 58 (0.6) | 59 (0.6) | 58 (0.5) | 50 (0.7) | 51 (0.8) | 4 (0.3) | 500 (8.3) | 44 (1.2) | 530 (3.1) | 19 (0.8) | 526 (6.2) | 33 (1.1) | 514 (3.5) |
| Thailand ¹ | 57 (0.9) | 56 (1.0) | 66 (0.9) | 54 (0.7) | 43 (1.2) | 62 (1.1) | 3 (0.3) | 510 (8.8) | 26 (1.0) | 520 (4.0) | 18 (0.7) | 519 (4.3) | 54 (1.5) | 532 (4.1) |
| United States | 58 (1.0) | 58 (1.0) | 63 (1.1) | 56 (0.8) | 53 (1.2) | 61 (1.0) | 17 (1.1) | 507 (9.5) | 42 (0.9) | 548 (4.1) | 17 (0.7) | 541 (5.2) | 24 (0.8) | 533 (5.7) |

¹ Countries not meeting all International Association for the Evaluation of Educational Achievement's sampling specifications.

—Data not available or not applicable.

NOTE.—Data are for 8th grade or equivalent in most countries. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Science Achievement in the Middle School Years: IEA's Third International Mathematics and Science Study*, 1997, by Albert E. Beaton et al. Copyright © 1996 Boston College, Chestnut Hill, MA. (This table was prepared June 1997.)

Table 406.—Instructional practices and time spent teaching science in 8th-grade, by country: 1994–95

| Country | Percent of students whose teachers report using each organizational approach "most or every lesson" | | | | | | Average number of hours science is taught weekly to science classes | | | | | | | |
|--|---|--|--|---|--|---|---|------------|-------------------------------------|------------|-------------------------------------|------------|-----------------|------------|
| | Work together as a class and students respond to one another | Work together as a class and teacher teaches whole class | Work individually with assistance from teacher | Work individually without assistance from teacher | Work in pairs or groups with assistance from teacher | Work in pairs or groups without assistance from teacher | Less than 2 hours | | At least 2, but less than 3.5 hours | | At least 3.5, but less than 5 hours | | 5 hours or more | |
| | | | | | | | Percent | Mean score | Percent | Mean score | Percent | Mean score | Percent | Mean score |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Australia ¹ | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Austria ¹ | ² 3 | ² 65 | ² 13 | ² 3 | ² 18 | ² 12 | — | — | — | — | — | — | — | — |
| Belgium (Flemish) | ² 11 | ² 62 | ² 19 | ² 6 | ² 13 | ² 7 | — | — | — | — | — | — | — | — |
| Belgium (French) ¹ | ³ 11 | ³ 53 | ³ 24 | ³ 8 | ³ 8 | ³ 4 | — | — | — | — | — | — | — | — |
| Bulgaria ¹ | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Canada | ³ 17 | ² 28 | ² 26 | ² 23 | ² 33 | ³ 24 | ² 11 (2.1) | 512 (8.9) | 69 (3.9) | 540 (3.8) | 11 (2.5) | 528 (5.5) | 8 (2.1) | 517 (10.3) |
| Colombia ¹ | ² 33 | ² 48 | ² 55 | ² 10 | ² 43 | ² 13 | ² 6 (2.3) | 416 (4.5) | 75 (4.2) | 415 (5.6) | 13 (3.2) | 404 (5.5) | 6 (2.4) | 403 (18.6) |
| Cyprus | ³ 3 | ³ 74 | ³ 35 | ³ 3 | ³ 17 | ³ 6 | ⁴ | — | — | — | — | — | — | — |
| Czech Republic | 11 | 70 | ² 46 | 15 | 14 | 4 | — | — | — | — | — | — | — | — |
| Denmark ¹ | ³ 2 | ³ 22 | ³ 25 | ³ 3 | ³ 46 | ³ 13 | — | — | — | — | — | — | — | — |
| England ¹ | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| France | 16 | 57 | 34 | 16 | 27 | 12 | — | — | — | — | — | — | — | — |
| Germany ¹ | ³ 30 | ³ 69 | ³ 28 | ³ 7 | ³ 19 | ³ 5 | — | — | — | — | — | — | — | — |
| Greece ¹ | 3 | 67 | 45 | 10 | 13 | 1 | — | — | — | — | — | — | — | — |
| Hong Kong | 12 | 45 | 35 | 2 | 44 | 13 | 7 (2.3) | 492 (29.9) | 82 (3.9) | 526 (5.3) | 9 (3.3) | 518 (8.6) | 2 (1.6) | — |
| Hungary | 7 | 80 | 54 | 13 | 11 | 2 | — | — | — | — | — | — | — | — |
| Iceland | ³ 1 | ² 35 | ² 30 | ² 9 | ² 16 | ² 6 | — | — | — | — | — | — | — | — |
| Iran, Islamic Republic | 25 | 57 | 36 | 2 | 25 | 11 | — | — | — | — | — | — | — | — |
| Ireland | ³ 7 | ³ 62 | ³ 25 | ³ 6 | ³ 20 | ³ 6 | ³ 4 (1.9) | 578 (16.5) | 94 (2.1) | 540 (6.2) | 2 (0.8) | — | 0 (0.0) | — |
| Israel ¹ | ³ 17 | ² 41 | ² 30 | ² 15 | ² 32 | ² 18 | ³ 19 (7.9) | 547 (19.6) | 77 (7.2) | 520 (9.1) | 4 (3.5) | 529 (0.0) | 0 (0.0) | — |
| Japan | 19 | 79 | 12 | 8 | 12 | 6 | 5 (1.6) | 618 (15.2) | 94 (1.7) | 569 (1.5) | 0 (0.0) | — | 1 (0.6) | — |
| Korea | 34 | 83 | 28 | 8 | 15 | 3 | 43 (2.9) | 569 (3.3) | 51 (3.2) | 561 (3.1) | 1 (0.8) | — | 5 (2.3) | 568 (12.7) |
| Kuwait ¹ | ² 9 | ² 46 | ² 45 | ² 0 | ² 36 | ² 2 | ² 3 (2.6) | 409 (1.9) | 97 (2.6) | 426 (4.4) | 1 (0.5) | — | 0 (0.0) | — |
| Latvia (Latvian-speaking schools) ¹ | ³ 25 | ³ 84 | ³ 59 | ³ 32 | ³ 24 | ³ 8 | — | — | — | — | — | — | — | — |
| Lithuania ¹ | ² 16 | ² 60 | ² 22 | ² 26 | ² 8 | ² 8 | — | — | — | — | — | — | — | — |
| Netherlands ¹ | ² 5 | ² 63 | ² 36 | ² 23 | ² 25 | ² 18 | — | — | — | — | — | — | — | — |
| New Zealand | 15 | 41 | 33 | 26 | 44 | 20 | 1 (0.9) | — | 52 (4.1) | 527 (6.3) | 47 (4.2) | 525 (6.6) | 0 (0.0) | — |
| Norway | ³ 24 | ³ 62 | ³ 23 | ³ 1 | ³ 23 | ³ 4 | ³ 27 (4.9) | 526 (3.0) | 73 (4.9) | 524 (2.6) | 1 (0.6) | — | 0 (0.0) | — |
| Portugal | 14 | 66 | 54 | 3 | 54 | 5 | — | — | — | — | — | — | — | — |
| Romania ¹ | 15 | 86 | 47 | 8 | 27 | ² 2 | — | — | — | — | — | — | — | — |
| Russian Federation | 9 | 68 | 43 | 21 | 13 | 7 | — | — | — | — | — | — | — | — |
| Scotland ¹ | ³ 7 | ³ 22 | ³ 27 | ³ 11 | ³ 56 | ³ 19 | ³ 14 (3.1) | 538 (23.4) | 83 (3.6) | 519 (4.8) | 3 (1.7) | 488 (22.5) | 0 (0.0) | — |
| Singapore | 12 | 59 | 41 | 17 | 40 | 19 | 0 (0.0) | — | 24 (4.4) | 618 (14.6) | 76 (4.4) | 603 (6.0) | 0 (0.0) | — |
| Slovak Republic | ² 48 | ² 64 | ² 45 | ² 15 | ² 3 | ² 1 | — | — | — | — | — | — | — | — |
| Slovenia ¹ | ² 7 | ² 65 | ² 19 | ² 34 | ² 13 | ² 13 | — | — | — | — | — | — | — | — |
| South Africa ¹ | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Spain | ² 14 | ² 65 | ² 46 | ² 14 | ² 18 | ² 7 | ² 5 (2.6) | 532 (2.5) | 84 (3.9) | 518 (2.1) | 11 (3.0) | 502 (9.4) | 1 (0.7) | — |
| Switzerland ¹ | ³ 3 | ³ 56 | ³ 21 | ³ 6 | ³ 30 | ³ 8 | ³ 41 (4.7) | 532 (6.6) | 37 (4.4) | 524 (8.4) | 9 (3.1) | 486 (13.7) | 13 (3.5) | 519 (15.6) |
| Thailand ¹ | ² 16 | ² 38 | ² 33 | ² 10 | ² 32 | ² 11 | — | — | — | — | — | — | — | — |
| United States | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

¹ Countries not meeting all International Association for the Evaluation of Educational Achievement's sampling specifications.

² Teacher response data available for 70 to 84 percent of students.

³ Teacher response available for 50 to 69 percent of students.

—Data not available or not applicable.

NOTE.—Data are for 8th grade or equivalent in most countries. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Science Achievement in the Middle School Years: IEA's Third International Mathematics and Science Study*, 1997, by Albert E. Beaton et al. Copyright © 1996 Boston College, Chestnut Hill, MA. (This table was prepared June 1997.)

Table 407.—Average size of 8th-grade mathematics classes, and frequency teachers assign mathematics homework, by country: 1994–95

| Country | Average size of mathematics classes | | | | Percent of students, by frequency and average length of mathematics assignments | | | | | | |
|--|-------------------------------------|-------------------|-------------------|---------------------|---|--|----------------------|---|----------------------|---|----------------------|
| | 1 to 20 students | 21 to 30 students | 31 to 40 students | 41 or more students | Never assigning homework | Assigning homework less than once a week | | Assigning homework once or twice a week | | Assigning homework 3 or more times a week | |
| | | | | | | 30 minutes or less | More than 30 minutes | 30 minutes or less | More than 30 minutes | 30 minutes or less | More than 30 minutes |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Australia ¹ | ² 13 (2.4) | 71 (3.3) | 16 (2.6) | 1 (0.5) | ² 1 (0.8) | 6 (1.6) | 0 (0.2) | 21 (2.6) | 4 (1.9) | 62 (3.4) | 5 (1.7) |
| Austria ¹ | — | — | — | — | ² 0 (0.0) | 1 (0.5) | 0 (0.0) | 24 (4.4) | 3 (1.4) | 63 (5.0) | 10 (2.1) |
| Belgium (Flemish) | 49 (3.6) | 51 (3.6) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 17 (3.5) | 2 (1.1) | 52 (4.8) | 10 (2.6) | 15 (2.9) | 5 (2.1) |
| Belgium (French) ¹ | ³ 43 (5.3) | 57 (5.3) | 0 (0.0) | 0 (0.0) | 1 (1.2) | 2 (1.4) | 0 (0.0) | 30 (5.1) | 5 (2.2) | 55 (5.5) | 7 (2.8) |
| Bulgaria ¹ | — | — | — | — | — | — | — | — | — | — | — |
| Canada | ² 11 (2.1) | 65 (4.0) | 23 (3.6) | 1 (0.5) | ² 2 (1.1) | 2 (0.9) | 1 (0.7) | 22 (3.4) | 2 (0.9) | 59 (3.7) | 13 (2.7) |
| Colombia ¹ | ² 16 (4.2) | 6 (2.2) | 29 (4.0) | 48 (4.6) | 0 (0.0) | 1 (0.9) | 1 (0.8) | 17 (4.7) | 13 (2.9) | 29 (4.2) | 39 (4.2) |
| Cyprus | 1 (0.0) | 37 (3.9) | 62 (3.9) | 0 (0.0) | ² 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 50 (5.3) | 50 (5.3) |
| Czech Republic | 13 (3.3) | 77 (5.3) | 11 (4.5) | 0 (0.0) | 0 (0.4) | 14 (4.5) | 0 (0.0) | 62 (5.2) | 0 (0.3) | 23 (3.5) | 1 (0.6) |
| Denmark ¹ | ² 49 (4.8) | 51 (4.8) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 4 (1.8) | 0 (0.0) | 42 (4.7) | 3 (1.6) | 49 (5.2) | 2 (1.0) |
| England ¹ | ³ 18 (3.1) | 62 (3.7) | 20 (3.4) | 0 (0.0) | 0 (0.0) | 3 (1.0) | 1 (0.6) | 44 (3.8) | 47 (3.7) | 3 (1.4) | 2 (1.1) |
| France | 11 (2.6) | 86 (2.9) | 3 (1.8) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 2 (0.9) | 7 (2.5) | 4 (1.2) | 77 (3.9) | 10 (2.8) |
| Germany ¹ | ² 25 (4.4) | 72 (4.5) | 3 (1.8) | 0 (0.0) | 1 (1.4) | 1 (1.4) | 0 (0.0) | 22 (4.4) | 0 (0.0) | 73 (5.0) | 3 (1.8) |
| Greece ¹ | 9 (2.3) | 64 (4.4) | 27 (3.9) | 0 (0.0) | 0 (0.0) | 1 (0.9) | 0 (0.0) | 0 (0.0) | 0 (0.2) | 31 (3.4) | 67 (3.5) |
| Hong Kong | 3 (1.9) | 4 (2.2) | 56 (5.7) | 37 (5.9) | 1 (1.4) | 4 (2.2) | 3 (1.8) | 25 (4.7) | 15 (4.1) | 38 (6.0) | 14 (4.1) |
| Hungary | 37 (4.0) | 57 (4.1) | 6 (2.2) | 0 (0.0) | 0 (0.0) | 1 (0.7) | 0 (0.0) | 2 (1.3) | 0 (0.0) | 82 (3.0) | 15 (3.1) |
| Iceland | ² 36 (5.9) | 64 (5.9) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 5 (2.0) | 1 (1.0) | 75 (5.5) | 19 (5.5) |
| Iran, Islamic Republic | ² 1 (0.9) | 26 (4.5) | 54 (5.3) | 19 (4.4) | 0 (0.0) | 1 (0.5) | 3 (1.4) | 10 (3.0) | 59 (4.4) | 2 (1.1) | 26 (4.3) |
| Ireland | ² 12 (2.7) | 68 (4.5) | 20 (3.9) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (0.9) | 0 (0.0) | 94 (2.2) | 5 (2.0) |
| Israel ¹ | ² 14 (5.1) | 36 (7.4) | 49 (9.1) | 2 (1.6) | ² 0 (0.0) | 1 (1.2) | 0 (0.0) | 3 (2.2) | 0 (0.0) | 48 (7.1) | 48 (6.8) |
| Japan | 0 (0.2) | 4 (1.4) | 88 (2.0) | 8 (1.5) | 0 (0.0) | 27 (4.0) | 4 (1.7) | 37 (3.7) | 10 (2.3) | 16 (2.9) | 6 (1.5) |
| Korea | 2 (1.2) | 1 (1.0) | 4 (1.5) | 93 (2.0) | 0 (0.0) | 5 (1.6) | 8 (2.2) | 27 (3.7) | 21 (3.3) | 21 (3.2) | 18 (3.4) |
| Kuwait ¹ | 0 (0.0) | 49 (6.5) | 49 (6.3) | 2 (1.9) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 19 (6.1) | 2 (2.0) | 60 (8.3) | 18 (6.0) |
| Latvia (Latvian-speaking schools) ¹ | ² 41 (4.0) | 51 (3.8) | 4 (2.1) | 4 (2.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 8 (2.8) | 1 (0.9) | 83 (3.9) | 9 (2.4) |
| Lithuania ¹ | ² 43 (3.8) | 54 (3.7) | 3 (1.6) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 2 (1.3) | 0 (0.0) | 76 (3.9) | 22 (3.9) |
| Netherlands ¹ | 16 (4.7) | 77 (5.6) | 7 (3.6) | 0 (0.0) | 1 (1.2) | 1 (0.9) | 0 (0.0) | 12 (3.5) | 2 (1.4) | 81 (4.2) | 4 (2.2) |
| New Zealand | 11 (2.2) | 68 (3.8) | 21 (3.1) | 0 (0.0) | 0 (0.0) | 5 (1.9) | 2 (0.1) | 34 (4.3) | 4 (1.5) | 54 (4.2) | 2 (1.2) |
| Norway | ² 20 (3.5) | 79 (3.7) | 1 (0.5) | 1 (0.8) | ² 0 (0.0) | 0 (0.0) | 0 (0.0) | 7 (2.7) | 8 (2.7) | 67 (4.3) | 18 (4.0) |
| Portugal | 12 (2.8) | 80 (3.7) | 7 (2.6) | 0 (0.0) | 0 (0.0) | 1 (0.9) | 1 (0.5) | 30 (4.0) | 2 (1.1) | 57 (4.1) | 9 (2.4) |
| Romania ¹ | 23 (2.7) | 51 (4.3) | 24 (4.1) | 2 (1.2) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (0.8) | 1 (0.6) | 11 (2.8) | 87 (2.8) |
| Russian Federation | 15 (2.7) | 75 (3.6) | 9 (2.3) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 2 (0.9) | 1 (0.8) | 42 (3.5) | 55 (3.4) |
| Scotland ¹ | ² 12 (2.8) | 80 (3.8) | 8 (2.7) | 0 (0.0) | ² 0 (0.4) | 20 (4.3) | 4 (2.0) | 46 (5.1) | 6 (2.3) | 24 (4.1) | 0 (0.0) |
| Singapore | 1 (0.7) | 10 (2.5) | 72 (4.3) | 18 (4.0) | 0 (0.0) | 1 (0.9) | 0 (0.0) | 3 (1.5) | 11 (3.1) | 26 (4.1) | 58 (4.5) |
| Slovak Republic | 15 (2.8) | 67 (4.2) | 19 (3.6) | 0 (0.0) | 0 (0.0) | 1 (0.9) | 0 (0.0) | 12 (2.8) | 1 (0.7) | 83 (3.4) | 4 (1.7) |
| Slovenia ¹ | ² 15 (3.1) | 80 (3.6) | 5 (1.8) | 0 (0.0) | ² 0 (0.0) | 0 (0.0) | 0 (0.0) | 2 (1.4) | 0 (0.0) | 74 (4.4) | 24 (4.2) |
| South Africa ¹ | — | — | — | — | — | — | — | — | — | — | — |
| Spain | ² 13 (2.8) | 48 (4.0) | 36 (4.2) | 4 (1.7) | ² 0 (0.0) | 4 (1.6) | 0 (0.0) | 18 (3.3) | 9 (2.7) | 47 (4.4) | 22 (3.7) |
| Sweden | ² 36 (3.9) | 61 (4.0) | 2 (1.2) | 0 (0.0) | ² 0 (0.4) | 19 (3.0) | 7 (1.9) | 45 (4.0) | 26 (3.3) | 2 (1.2) | 1 (1.2) |
| Switzerland ¹ | ³ 56 (4.5) | 44 (4.5) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (0.4) | 1 (0.3) | 26 (4.2) | 4 (1.5) | 61 (4.4) | 6 (2.3) |
| Thailand ¹ | — | — | — | — | ² 0 (0.0) | 0 (0.0) | 0 (0.0) | 6 (3.5) | 20 (4.8) | 16 (4.7) | 58 (6.6) |
| United States | ³ 24 (3.0) | 59 (3.9) | 12 (2.2) | 4 (1.8) | ² 0 (0.1) | 3 (1.3) | 0 (0.0) | 7 (1.8) | 3 (0.9) | 64 (2.9) | 23 (3.1) |

¹ Countries not meeting all International Association for the Evaluation of Educational Achievement's sampling specifications.

² Teacher response data available for 70 to 84 percent of students.

³ Teacher response data available for 50 to 69 percent of students.

—Data not available or not applicable.

NOTE.—Data are for 8th grade or equivalent in most countries. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Mathematics Achievement in the Middle School Years: IEA's Third International Mathematics and Science Study*, 1997, by Albert E. Beaton et al. Copyright © 1996 Boston College, Chestnut Hill, MA. (This table was prepared June 1997.)

Table 408.—Eighth-grade students' perceptions about mathematics achievement and hours spent on leisure activities, by country: 1994–95

| Country | Students' self-perceptions about usually doing well in mathematics | | | | | | | | Average hours each day | | | | | |
|--|--|------------|----------|------------|----------|------------|----------------|------------|------------------------|---------------------------------|--------------------|----------------|-----------------------|------------------------|
| | Strongly disagree | | Disagree | | Agree | | Strongly agree | | Watching TV or videos | Playing or talking with friends | Doing jobs at home | Playing sports | Reading for enjoyment | Playing computer games |
| | Percent | Mean score | Percent | Mean score | Percent | Mean score | Percent | Mean score | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Australia ¹ | 3 (0.3) | 457 (7.9) | 17 (0.7) | 487 (5.6) | 60 (0.8) | 530 (3.9) | 20 (0.9) | 586 (4.7) | 2.4 (0.05) | 1.4 (0.03) | 0.9 (0.02) | 1.6 (0.03) | 0.6 (0.02) | 0.6 (0.02) |
| Austria ¹ | 3 (0.4) | 512 (10.1) | 21 (1.1) | 508 (5.4) | 45 (1.2) | 535 (4.0) | 31 (1.4) | 572 (4.3) | 1.9 (0.06) | 2.9 (0.08) | 0.8 (0.03) | 1.9 (0.07) | 0.8 (0.03) | 0.6 (0.03) |
| Belgium (Flemish) | 5 (0.4) | 512 (6.7) | 29 (1.0) | 548 (5.9) | 48 (1.1) | 567 (6.4) | 17 (0.9) | 609 (7.2) | 2.0 (0.05) | 1.6 (0.05) | 1.1 (0.03) | 1.8 (0.07) | 0.7 (0.03) | 0.5 (0.06) |
| Belgium (French) ¹ | 3 (0.4) | 467 (7.8) | 19 (1.3) | 505 (5.4) | 48 (1.3) | 528 (3.8) | 29 (1.5) | 550 (5.0) | 1.9 (0.08) | 1.7 (0.10) | 0.8 (0.03) | 1.8 (0.04) | 0.8 (0.03) | 0.7 (0.03) |
| Bulgaria ¹ | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Canada | 3 (0.3) | 480 (9.0) | 13 (0.6) | 480 (4.9) | 49 (1.1) | 514 (2.3) | 35 (1.1) | 570 (3.4) | 2.3 (0.04) | 2.2 (0.05) | 1.0 (0.02) | 1.9 (0.03) | 0.8 (0.02) | 0.5 (0.02) |
| Colombia ¹ | 2 (0.4) | — | 17 (1.3) | 373 (3.7) | 51 (1.9) | 385 (4.6) | 30 (1.4) | 398 (5.3) | 2.2 (0.07) | 1.9 (0.06) | 2.3 (0.07) | 1.9 (0.06) | 0.9 (0.05) | 2.0 (0.06) |
| Cyprus | 5 (0.4) | 411 (7.6) | 18 (0.8) | 432 (3.7) | 46 (1.0) | 469 (2.6) | 31 (1.0) | 521 (4.4) | 2.3 (0.04) | 1.7 (0.04) | 1.0 (0.03) | 1.4 (0.04) | 0.8 (0.02) | 0.8 (0.03) |
| Czech Republic | 2 (0.3) | — | 37 (1.4) | 516 (4.2) | 48 (1.4) | 584 (5.2) | 13 (1.0) | 640 (8.0) | 2.6 (0.05) | 2.9 (0.09) | 1.3 (0.04) | 1.9 (0.06) | 1.0 (0.03) | 0.6 (0.03) |
| Denmark ¹ | 1 (0.2) | — | 8 (0.6) | 431 (7.0) | 53 (1.4) | 492 (3.0) | 38 (1.3) | 537 (4.0) | 2.2 (0.06) | 2.8 (0.07) | 1.1 (0.04) | 1.7 (0.06) | 0.7 (0.03) | 0.7 (0.03) |
| England ¹ | 1 (0.2) | — | 6 (0.6) | 475 (8.3) | 69 (1.0) | 500 (3.0) | 24 (1.0) | 538 (5.8) | 2.7 (0.07) | 2.5 (0.06) | 0.8 (0.03) | 1.5 (0.05) | 0.7 (0.03) | 0.9 (0.05) |
| France | 6 (0.7) | 495 (6.1) | 26 (1.1) | 513 (4.0) | 46 (1.0) | 548 (3.4) | 22 (0.8) | 564 (5.1) | 1.5 (0.04) | 1.5 (0.05) | 0.9 (0.03) | 1.7 (0.04) | 0.8 (0.03) | 0.5 (0.02) |
| Germany ¹ | 7 (0.5) | 474 (7.1) | 24 (1.0) | 491 (5.2) | 33 (1.1) | 511 (5.1) | 36 (1.1) | 529 (5.3) | 1.9 (0.04) | 3.5 (0.07) | 0.9 (0.02) | 1.7 (0.04) | 0.7 (0.02) | 0.8 (0.04) |
| Greece ¹ | 2 (0.3) | — | 16 (0.7) | 454 (3.6) | 55 (0.8) | 481 (3.2) | 27 (0.8) | 515 (4.2) | 2.1 (0.04) | 1.5 (0.04) | 0.9 (0.03) | 1.8 (0.04) | 1.0 (0.03) | 0.7 (0.03) |
| Hong Kong | 11 (0.9) | 536 (9.5) | 51 (1.2) | 577 (6.7) | 33 (1.2) | 620 (6.7) | 5 (0.5) | 643 (8.2) | 2.6 (0.05) | 1.2 (0.04) | 0.7 (0.02) | 0.9 (0.03) | 0.9 (0.02) | 0.8 (0.03) |
| Hungary | 3 (0.3) | 469 (11.7) | 25 (0.9) | 490 (4.2) | 57 (1.0) | 545 (3.4) | 15 (0.8) | 608 (4.8) | 3.0 (0.06) | 2.3 (0.05) | 2.0 (0.04) | 1.7 (0.04) | 1.2 (0.04) | 0.7 (0.03) |
| Iceland | 3 (0.6) | 421 (10.1) | 14 (1.4) | 447 (4.9) | 55 (1.6) | 486 (4.5) | 28 (1.8) | 519 (9.5) | 2.2 (0.05) | 3.1 (0.06) | 0.8 (0.03) | 1.8 (0.06) | 0.9 (0.06) | 0.7 (0.06) |
| Iran, Islamic Republic | 1 (0.4) | — | 8 (0.7) | 403 (4.3) | 62 (1.4) | 423 (2.6) | 29 (1.4) | 450 (3.7) | 1.8 (0.06) | 1.2 (0.04) | 1.8 (0.06) | 1.2 (0.09) | 1.1 (0.04) | 2.0 (0.02) |
| Ireland | 3 (0.3) | 475 (7.7) | 18 (1.0) | 492 (5.5) | 61 (0.9) | 530 (5.2) | 18 (1.0) | 572 (7.6) | 2.1 (0.03) | 1.5 (0.06) | 0.9 (0.03) | 1.4 (0.05) | 0.6 (0.02) | 0.5 (0.03) |
| Israel ¹ | 2 (0.4) | — | 12 (1.3) | 494 (10.1) | 45 (1.9) | 513 (6.2) | 41 (1.9) | 549 (8.3) | 3.3 (0.10) | 2.4 (0.08) | 1.2 (0.05) | 1.9 (0.09) | 1.0 (0.04) | 0.9 (0.04) |
| Japan | 10 (0.5) | 523 (3.7) | 45 (0.7) | 577 (2.3) | 40 (0.7) | 650 (2.5) | 4 (0.3) | 669 (7.8) | 2.6 (0.04) | 1.9 (0.04) | 0.6 (0.01) | 1.3 (0.03) | 0.9 (0.02) | 0.6 (0.02) |
| Korea | 9 (0.5) | 535 (5.7) | 53 (1.0) | 572 (3.0) | 32 (0.9) | 669 (3.0) | 6 (0.6) | 702 (5.7) | 2.0 (0.04) | 0.9 (0.03) | 0.5 (0.02) | 0.5 (0.02) | 0.8 (0.03) | 0.3 (0.02) |
| Kuwait ¹ | 3 (0.7) | 364 (11.3) | 9 (0.9) | 382 (3.6) | 49 (1.7) | 386 (2.4) | 39 (2.1) | 405 (3.9) | 1.9 (0.07) | 1.5 (0.11) | 1.2 (0.08) | 1.5 (0.10) | 1.0 (0.04) | 0.7 (0.05) |
| Latvia (Latvian-speaking schools) ¹ | 2 (0.3) | — | 43 (1.2) | 471 (3.5) | 43 (1.2) | 505 (3.7) | 12 (0.8) | 542 (5.5) | 2.6 (0.05) | 2.1 (0.06) | 1.5 (0.04) | 1.2 (0.04) | 1.1 (0.03) | 0.7 (0.04) |
| Lithuania ¹ | 5 (0.5) | 446 (7.5) | 46 (1.2) | 454 (3.4) | 38 (1.2) | 492 (4.3) | 11 (0.8) | 544 (6.0) | 2.8 (0.05) | 2.7 (0.06) | 1.2 (0.03) | 1.2 (0.04) | 1.0 (0.03) | 0.9 (0.04) |
| Netherlands ¹ | 4 (0.5) | 487 (12.4) | 21 (1.4) | 504 (7.1) | 43 (1.3) | 537 (8.4) | 32 (1.6) | 580 (7.3) | 2.5 (0.09) | 2.8 (0.08) | 0.9 (0.04) | 1.8 (0.06) | 0.6 (0.03) | 0.7 (0.04) |
| New Zealand | 2 (0.3) | — | 13 (0.8) | 466 (6.1) | 62 (0.9) | 501 (4.5) | 22 (0.8) | 559 (5.5) | 2.5 (0.05) | 1.5 (0.04) | 0.9 (0.02) | 1.5 (0.04) | 0.8 (0.02) | 0.7 (0.03) |
| Norway | 3 (0.3) | 434 (7.4) | 18 (0.9) | 455 (3.2) | 58 (1.0) | 504 (2.2) | 21 (0.8) | 555 (4.4) | 2.5 (0.04) | 3.2 (0.06) | 1.1 (0.03) | 1.9 (0.05) | 0.7 (0.02) | 0.8 (0.03) |
| Portugal | 7 (0.5) | 419 (3.6) | 37 (1.1) | 435 (2.3) | 42 (1.1) | 463 (2.5) | 14 (0.8) | 502 (5.2) | 2.0 (0.04) | 1.7 (0.05) | 1.0 (0.04) | 1.7 (0.04) | 0.7 (0.02) | 0.7 (0.03) |
| Romania ¹ | 6 (0.6) | 455 (12.0) | 25 (1.0) | 459 (4.6) | 49 (0.9) | 488 (4.3) | 20 (1.0) | 505 (6.3) | 1.9 (0.06) | 1.5 (0.06) | 1.9 (0.08) | 1.3 (0.05) | 1.3 (0.07) | 0.6 (0.05) |
| Russian Federation | 2 (0.3) | — | 37 (1.4) | 501 (7.1) | 43 (1.1) | 547 (5.1) | 18 (0.8) | 590 (4.9) | 2.9 (0.05) | 2.9 (0.05) | 1.5 (0.03) | 1.0 (0.03) | 1.3 (0.04) | 1.0 (0.04) |
| Scotland ¹ | 2 (0.3) | — | 10 (0.8) | 455 (5.5) | 66 (1.3) | 491 (4.8) | 22 (1.3) | 553 (9.3) | 2.7 (0.05) | 2.8 (0.08) | 0.7 (0.02) | 1.9 (0.05) | 0.7 (0.02) | 1.0 (0.04) |
| Singapore | 6 (0.4) | 587 (9.0) | 38 (1.2) | 624 (5.2) | 46 (1.1) | 659 (4.9) | 11 (0.6) | 677 (6.2) | 2.7 (0.05) | 1.5 (0.04) | 1.0 (0.03) | 0.7 (0.03) | 1.1 (0.02) | 0.6 (0.03) |
| Slovak Republic | 1 (0.2) | — | 28 (1.1) | 496 (3.8) | 55 (1.1) | 555 (3.8) | 15 (0.7) | 619 (5.2) | 2.7 (0.05) | 2.9 (0.07) | 1.5 (0.05) | 1.8 (0.04) | 1.0 (0.03) | 0.6 (0.03) |
| Slovenia ¹ | 2 (0.3) | — | 24 (1.1) | 497 (4.0) | 53 (1.0) | 538 (3.6) | 21 (0.9) | 602 (4.2) | 2.0 (0.04) | 1.7 (0.05) | 1.6 (0.05) | 1.6 (0.03) | 0.9 (0.02) | 0.6 (0.02) |
| South Africa ¹ | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Spain | 5 (0.5) | 441 (4.6) | 23 (1.0) | 456 (2.6) | 45 (1.1) | 488 (2.6) | 27 (1.0) | 522 (3.4) | 1.8 (0.05) | 1.8 (0.06) | 1.1 (0.03) | 1.7 (0.04) | 0.6 (0.02) | 0.3 (0.02) |
| Sweden | 2 (0.3) | — | 16 (0.7) | 475 (3.4) | 61 (0.9) | 517 (3.0) | 21 (0.8) | 565 (3.8) | 2.3 (0.04) | 2.3 (0.05) | 0.9 (0.02) | 1.6 (0.04) | 0.7 (0.02) | 0.6 (0.02) |
| Switzerland ¹ | 3 (0.4) | 497 (10.1) | 21 (0.9) | 528 (4.0) | 47 (0.9) | 541 (3.0) | 28 (1.1) | 575 (3.3) | 1.3 (0.03) | 2.4 (0.05) | 1.0 (0.03) | 1.8 (0.03) | 0.8 (0.02) | 0.4 (0.02) |
| Thailand ¹ | 2 (0.3) | — | 38 (1.5) | 510 (5.1) | 45 (1.1) | 529 (6.6) | 15 (0.9) | 537 (7.4) | 2.1 (0.07) | 1.2 (0.03) | 1.6 (0.03) | 1.1 (0.02) | 1.0 (0.02) | 0.3 (0.02) |
| United States | 3 (0.3) | 430 (5.1) | 11 (0.6) | 462 (4.8) | 52 (0.9) | 491 (4.3) | 34 (1.0) | 534 (5.9) | 2.6 (0.07) | 2.5 (0.06) | 1.2 (0.04) | 2.2 (0.05) | 0.7 (0.02) | 0.7 (0.03) |

¹ Countries not meeting all International Association for the Evaluation of Educational Achievement's sampling specifications.

² Student response data available for 70 to 84 percent of students.

—Data not available or not applicable.

NOTE.—Data are for 8th grade or equivalent in most countries. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Mathematics Achievement in the Middle School Years: IEA's Third International Mathematics and Science Study, 1997*, by Albert E. Beaton et al. Copyright © 1996 Boston College, Chestnut Hill, MA. (This table was prepared June 1997.)

Table 409.—Average 4th-grade mathematics scores,¹ by content areas, and average time spent studying mathematics out of school, by country: 1994–95

| Country | Average percent correct by content area | | | | | | | Amount of daily out-of-school study time in mathematics | | | | | | |
|--|---|---------------|-------------------------------|---|--|----------|------------------------------------|---|------------|------------------|------------|----------------|------------|----------------------------|
| | Overall mathematics scores | Whole numbers | Fractions and proportionality | Measurement, estimation, and number sense | Data representation, analysis, and probability | Geometry | Patterns, relations, and functions | No time | | Less than 1 hour | | 1 hour or more | | Average hours ² |
| | | | | | | | | Percent | Mean score | Percent | Mean score | Percent | Mean score | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Australia ³ | 63 (0.6) | 67 (0.6) | 51 (0.7) | 60 (0.7) | 67 (0.8) | 74 (0.7) | 64 (0.9) | 15 (0.9) | 526 (5.6) | 61 (1.2) | 559 (3.2) | 24 (1.0) | 530 (4.4) | 0.8 (0.02) |
| Austria ³ | 65 (0.7) | 74 (0.8) | 51 (0.8) | 69 (0.8) | 66 (1.1) | 67 (0.8) | 64 (1.1) | 4 (0.7) | 555 (8.6) | 58 (1.8) | 571 (3.8) | 38 (1.6) | 546 (4.1) | 1.0 (0.03) |
| Canada | 60 (1.0) | 68 (0.9) | 48 (1.0) | 54 (1.1) | 68 (1.4) | 72 (1.4) | 62 (1.5) | 14 (1.1) | 526 (4.4) | 60 (1.4) | 544 (4.0) | 26 (1.2) | 522 (5.0) | 0.8 (0.02) |
| Cyprus | 54 (0.6) | 65 (0.7) | 48 (0.7) | 48 (0.8) | 52 (0.9) | 53 (0.9) | 55 (1.1) | 9 (0.7) | 473 (6.1) | 51 (1.9) | 519 (3.6) | 40 (1.6) | 495 (3.8) | 1.1 (0.03) |
| Czech Republic | 66 (0.6) | 75 (0.6) | 53 (0.8) | 68 (0.7) | 67 (0.9) | 71 (0.7) | 67 (0.9) | 9 (0.9) | 547 (6.6) | 69 (1.2) | 576 (3.6) | 22 (1.1) | 560 (4.3) | 0.7 (0.02) |
| England ³ | 57 (0.7) | 58 (0.7) | 45 (0.8) | 52 (0.7) | 64 (0.9) | 74 (0.8) | 55 (1.0) | — | — | — | — | — | — | — |
| Greece | 51 (0.9) | 62 (1.0) | 42 (1.1) | 48 (1.0) | 50 (1.2) | 53 (1.2) | 47 (1.2) | 6 (0.5) | 453 (6.8) | 38 (1.6) | 512 (4.1) | 56 (1.7) | 493 (4.0) | 1.6 (0.04) |
| Hong Kong | 73 (0.9) | 79 (0.9) | 66 (1.0) | 69 (0.9) | 76 (1.0) | 74 (0.8) | 73 (1.2) | 6 (0.7) | 550 (7.9) | 44 (1.2) | 595 (4.2) | 50 (1.2) | 586 (4.5) | 1.3 (0.03) |
| Hungary ³ | 64 (0.8) | 76 (0.7) | 49 (0.9) | 64 (0.9) | 60 (1.0) | 66 (0.8) | 69 (1.1) | 5 (0.7) | 543 (10.8) | 58 (1.3) | 563 (3.9) | 37 (1.4) | 533 (4.2) | 1.0 (0.03) |
| Iceland | 50 (0.8) | 56 (0.9) | 36 (1.0) | 44 (0.9) | 58 (1.2) | 63 (1.0) | 48 (1.4) | 10 (0.8) | 457 (4.3) | 63 (1.4) | 483 (3.5) | 27 (1.4) | 472 (3.2) | 0.8 (0.02) |
| Iran, Islamic Republic ⁴ | 38 (0.9) | 51 (1.2) | 32 (1.0) | 36 (0.9) | 23 (0.9) | 42 (0.9) | 40 (1.4) | 5 (0.7) | 402 (6.6) | 17 (1.3) | 433 (6.0) | 78 (1.5) | 443 (4.5) | 2.3 (0.07) |
| Ireland | 63 (0.8) | 70 (0.8) | 58 (1.0) | 56 (0.9) | 69 (0.9) | 66 (0.8) | 64 (1.0) | 7 (0.6) | 516 (7.1) | 70 (1.3) | 565 (3.2) | 23 (1.2) | 530 (4.9) | 0.8 (0.02) |
| Israel ^{3,4} | 59 (1.0) | 71 (1.0) | 48 (1.1) | 54 (1.0) | 64 (1.2) | 62 (1.0) | 60 (1.5) | 14 (1.3) | 525 (6.4) | 46 (2.2) | 535 (4.7) | 40 (1.9) | 528 (4.1) | 1.1 (0.05) |
| Japan | 74 (0.4) | 82 (0.4) | 65 (0.6) | 72 (0.5) | 79 (0.5) | 72 (0.6) | 76 (0.6) | 10 (0.7) | 558 (4.3) | 60 (1.1) | 598 (2.3) | 31 (1.2) | 610 (3.0) | 0.9 (0.02) |
| Korea | 76 (0.4) | 88 (0.3) | 65 (0.5) | 72 (0.5) | 80 (0.6) | 72 (0.6) | 83 (0.7) | 14 (0.8) | 593 (4.2) | 44 (1.1) | 610 (2.5) | 42 (1.2) | 621 (2.3) | 1.0 (0.02) |
| Kuwait ³ | 32 (0.5) | 36 (0.5) | 25 (0.5) | 35 (0.6) | 26 (0.6) | 36 (0.6) | 33 (1.0) | 5 (0.7) | 372 (5.7) | 34 (1.4) | 410 (3.0) | 60 (1.5) | 401 (2.8) | 1.9 (0.05) |
| Latvia (Latvian-speaking schools) ³ | 59 (1.0) | 68 (0.9) | 44 (1.3) | 60 (1.0) | 54 (1.3) | 67 (1.0) | 65 (1.2) | 7 (0.7) | 476 (7.5) | 61 (1.9) | 542 (6.3) | 33 (1.7) | 518 (5.1) | 1.0 (0.03) |
| Netherlands ³ | 69 (0.7) | 75 (0.8) | 60 (0.9) | 70 (0.8) | 75 (0.9) | 71 (0.8) | 65 (1.1) | 47 (2.7) | 593 (4.3) | 39 (2.3) | 578 (3.6) | 14 (1.5) | 541 (6.1) | 0.5 (0.03) |
| New Zealand | 53 (1.0) | 57 (1.0) | 41 (1.1) | 49 (1.1) | 61 (1.3) | 66 (1.1) | 52 (1.2) | 21 (1.6) | 488 (9.7) | 54 (1.7) | 512 (4.4) | 25 (1.4) | 493 (5.2) | 0.8 (0.03) |
| Norway | 53 (0.7) | 61 (0.8) | 38 (0.7) | 56 (0.7) | 59 (0.9) | 58 (0.9) | 50 (1.2) | 23 (1.3) | 503 (4.1) | 58 (1.2) | 512 (3.3) | 19 (1.1) | 497 (5.3) | 0.6 (0.02) |
| Portugal | 48 (0.7) | 57 (0.8) | 38 (0.7) | 49 (0.8) | 43 (1.1) | 52 (1.0) | 47 (1.1) | 3 (0.5) | 420 (9.1) | 55 (1.7) | 489 (3.9) | 42 (1.6) | 470 (3.9) | 1.3 (0.03) |
| Scotland ⁴ | 58 (0.8) | 61 (0.8) | 46 (1.0) | 53 (0.9) | 66 (1.0) | 72 (0.8) | 57 (1.0) | 26 (1.8) | 519 (7.2) | 63 (2.0) | 528 (3.8) | 11 (1.0) | 501 (8.9) | 0.5 (0.02) |
| Singapore | 76 (0.8) | 83 (0.7) | 74 (1.0) | 67 (1.0) | 81 (0.8) | 72 (0.8) | 76 (0.9) | — | — | — | — | — | — | — |
| Slovenia ³ | 64 (0.6) | 74 (0.6) | 50 (0.9) | 64 (0.9) | 64 (1.0) | 72 (0.8) | 68 (0.8) | 3 (0.4) | 502 (11.4) | 57 (1.5) | 563 (3.7) | 40 (1.4) | 548 (3.7) | 1.0 (0.03) |
| Thailand ³ | 50 (1.1) | 58 (1.3) | 44 (1.0) | 44 (1.0) | 56 (1.5) | 53 (1.2) | 50 (1.3) | 17 (1.3) | 470 (4.3) | 44 (1.6) | 496 (4.5) | 39 (1.8) | 489 (6.1) | 1.0 (0.03) |
| United States | 63 (0.6) | 71 (0.7) | 51 (0.8) | 53 (0.6) | 73 (0.9) | 71 (0.7) | 66 (0.9) | 8 (0.5) | 516 (4.4) | 60 (1.1) | 561 (3.1) | 32 (1.1) | 528 (2.9) | 1.0 (0.03) |

¹ Fourth grade students or equivalent in most countries.

² Average hours based on: No time = 0; Less than 1 hour = .5; 1–2 hours = 1.5; 3–4 hours = 3.5; More than 4 hours = 5.

³ Countries not meeting all International Association for the Evaluation of Educational Achievement's sampling specifications.

⁴ Indicates a 70 to 84 percent student response rate on question about time spent studying mathematics.

—Data not available or not applicable.

NOTE.—Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Mathematics Achievement in the Primary School Years: IEA's Third International Mathematics and Science Study*, 1997, by Albert E. Beaton et al. Copyright © 1997 Boston College, Chestnut Hill, MA. (This table was prepared July 1997.)

Table 410.—Average 4th-grade science scores,¹ by content areas, and average time spent teaching science in school, by country: 1994–95

| Country | Science content areas | | | | | Average number of hours science is taught weekly to science classes | | | | | | | |
|--|------------------------|---------------|--------------|------------------|--|---|------------|--------------|------------|--------------|------------|-------------------|------------|
| | Overall science scores | Earth science | Life science | Physical science | Environmental issues and the nature of science | Less than 1 hour | | 1 to 2 hours | | 2 to 3 hours | | More than 3 hours | |
| | | | | | | Percent | Mean score | Percent | Mean score | Percent | Mean score | Percent | Mean score |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Australia ^{2,3} | 66 (0.5) | 61 (0.6) | 72 (0.5) | 63 (0.7) | 63 (0.8) | 35 (3.9) | 556 (5.0) | 55 (4.0) | 568 (5.9) | 5 (1.5) | 562 (18.1) | 5 (2.1) | 562 (8.4) |
| Austria ² | 66 (0.7) | 62 (0.8) | 72 (0.7) | 64 (0.8) | 54 (1.0) | 0 (0.0) | — | 0 (0.0) | — | 97 (1.8) | 566 (3.6) | 3 (1.8) | 540 (30.3) |
| Canada | 64 (0.6) | 62 (0.6) | 68 (0.6) | 61 (0.7) | 56 (0.7) | 8 (2.0) | 536 (10.1) | 42 (3.8) | 542 (5.1) | 27 (3.3) | 567 (5.4) | 23 (3.2) | 550 (4.6) |
| Cyprus | 51 (0.5) | 48 (0.7) | 55 (0.5) | 50 (0.7) | 42 (1.0) | — | — | — | — | — | — | — | — |
| Czech Republic | 65 (0.5) | 64 (0.6) | 71 (0.5) | 62 (0.7) | 56 (0.9) | 2 (1.1) | — | 79 (3.6) | 557 (3.9) | 3 (1.4) | 572 (6.8) | 16 (3.2) | 563 (7.3) |
| England ^{4,5} | 63 (0.6) | 61 (0.6) | 68 (0.6) | 60 (0.8) | 56 (1.0) | 6 (1.7) | 540 (8.7) | 27 (4.1) | 548 (7.5) | 44 (4.8) | 556 (5.9) | 23 (3.8) | 550 (8.2) |
| Greece | 54 (0.8) | 52 (0.9) | 61 (0.9) | 49 (0.9) | 43 (1.2) | — | — | — | — | — | — | — | — |
| Hong Kong | 62 (0.7) | 61 (0.6) | 68 (0.7) | 60 (0.8) | 50 (1.1) | 13 (3.4) | 530 (13.3) | 84 (3.7) | 534 (4.3) | 2 (1.5) | — | 1 (0.8) | — |
| Hungary ² | 62 (0.6) | 62 (0.7) | 66 (0.6) | 59 (0.8) | 50 (0.9) | 6 (2.2) | 556 (13.3) | 72 (4.1) | 529 (3.7) | 8 (3.0) | 521 (8.4) | 14 (3.1) | 549 (10.5) |
| Iceland ³ | 55 (0.7) | 55 (0.7) | 60 (0.8) | 52 (0.7) | 47 (1.2) | 17 (4.1) | 513 (7.3) | 41 (5.6) | 504 (7.7) | 30 (5.1) | 499 (6.5) | 12 (4.3) | 523 (6.8) |
| Iran, Islamic Republic | 40 (0.7) | 38 (0.7) | 44 (0.7) | 40 (0.9) | 26 (0.9) | — | — | — | — | — | — | — | — |
| Ireland | 61 (0.6) | 60 (0.8) | 66 (0.6) | 57 (0.7) | 55 (0.9) | 47 (5.0) | 536 (5.6) | 40 (4.4) | 540 (5.8) | 11 (3.1) | 550 (7.1) | 2 (0.9) | — |
| Israel ^{2,3,6} | 57 (0.8) | 51 (0.8) | 61 (0.9) | 55 (0.9) | 51 (1.3) | 0 (0.0) | — | 53 (5.6) | 508 (5.5) | 32 (5.8) | 494 (6.9) | 15 (4.3) | 493 (10.6) |
| Japan | 70 (0.3) | 66 (0.4) | 73 (0.3) | 70 (0.4) | 62 (0.6) | 2 (1.3) | — | 1 (0.6) | — | 95 (1.8) | 575 (1.8) | 2 (1.2) | — |
| Korea | 74 (0.4) | 72 (0.5) | 76 (0.4) | 75 (0.5) | 70 (0.8) | 0 (0.0) | — | 1 (0.6) | — | 95 (1.8) | 597 (1.9) | 5 (1.7) | 588 (10.3) |
| Kuwait ^{2,3} | 39 (0.5) | 36 (0.6) | 45 (0.6) | 37 (0.5) | 25 (0.7) | 0 (0.0) | — | 1 (0.7) | — | 96 (2.0) | 402 (3.9) | 4 (1.8) | 416 (42.2) |
| Latvia (Latvian-speaking schools) ² | 56 (0.8) | 57 (1.0) | 60 (0.8) | 54 (0.9) | 46 (1.2) | 89 (2.9) | 505 (5.7) | 5 (2.2) | 538 (47.2) | 5 (2.2) | 532 (11.9) | 1 (0.8) | — |
| Netherlands ² | 67 (0.5) | 61 (0.6) | 73 (0.5) | 65 (0.6) | 61 (0.9) | 38 (5.1) | 559 (4.0) | 44 (4.8) | 556 (4.5) | 9 (2.6) | 556 (7.2) | 9 (2.7) | 549 (20.1) |
| New Zealand ³ | 60 (0.9) | 57 (0.9) | 66 (0.9) | 57 (1.1) | 54 (1.2) | 29 (4.2) | 542 (8.3) | 48 (4.4) | 536 (6.1) | 14 (3.1) | 537 (17.2) | 9 (2.6) | 509 (21.2) |
| Norway ³ | 60 (0.6) | 60 (0.6) | 67 (0.7) | 55 (0.7) | 53 (0.9) | 73 (5.0) | 527 (5.4) | 27 (5.0) | 535 (7.6) | 0 (0.0) | — | 0 (0.0) | — |
| Portugal | 50 (0.7) | 50 (0.8) | 54 (0.8) | 49 (0.9) | 39 (1.0) | 2 (1.1) | — | 3 (1.4) | 486 (28.2) | 12 (3.1) | 474 (8.8) | 84 (3.6) | 481 (4.8) |
| Scotland ^{3,4} | 60 (0.8) | 58 (0.9) | 65 (0.8) | 57 (0.8) | 53 (1.2) | 35 (4.7) | 543 (5.9) | 44 (4.7) | 534 (6.4) | 14 (3.3) | 531 (13.2) | 7 (2.5) | 529 (12.5) |
| Singapore | 64 (0.8) | 58 (0.8) | 70 (0.8) | 64 (0.8) | 53 (1.1) | 0 (0.0) | — | 4 (1.5) | 548 (18.9) | 96 (1.5) | 547 (5.1) | 0 (0.0) | — |
| Slovenia ² | 64 (0.7) | 64 (0.7) | 68 (0.7) | 61 (0.8) | 54 (0.8) | 3 (1.9) | 544 (18.9) | 60 (5.3) | 541 (4.6) | 18 (4.0) | 550 (9.5) | 19 (3.4) | 548 (6.8) |
| Thailand ^{2,3} | 49 (0.9) | 48 (0.9) | 52 (0.8) | 46 (1.0) | 48 (1.4) | 2 (1.2) | — | 9 (3.5) | 463 (21.5) | 17 (6.1) | 469 (16.5) | 73 (6.6) | 477 (6.5) |
| United States ³ | 66 (0.5) | 64 (0.7) | 71 (0.6) | 60 (0.6) | 65 (0.8) | 9 (2.1) | 562 (11.5) | 16 (2.9) | 550 (10.2) | 33 (3.8) | 578 (5.9) | 42 (4.1) | 565 (5.1) |

¹ Fourth grade or equivalent in most countries.² Did not satisfy one or more guidelines for sample participation rates, age/grade specification, or classroom sampling procedures.³ Teacher response rate for number of hours science is taught is 84 percent or less.⁴ Met guidelines for sample participation rates only after replacement schools were included.⁵ National defined population covers less than 90 percent of international desired population.⁶ National defined population does not cover all of international desired population.

—Data not available or not applicable.

NOTE.—Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Science Achievement in the Primary School Years: IEA's Third International Mathematics and Science Study*, 1997, by Albert E. Beaton et al. Copyright © 1997 Boston College, Chestnut Hill, MA. (This table was prepared July 1997.)

Table 411.—Average mathematics scores, at the end of secondary school, by sex, and average time spent studying mathematics out of school, by country: 1994–95

| Country | Average score in mathematics | | | Amount of daily out-of-school study time in mathematics | | | | | | Average hours ¹ |
|---------------------------------|------------------------------|------------|------------|---|------------|------------------|------------|---------------------|------------|----------------------------|
| | Mathematics overall | Males | Females | Less than 1 hour | | One to two hours | | Three or more hours | | |
| | | | | Percent | Mean score | Percent | Mean score | Percent | Mean score | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Australia ² | 522 (9.3) | 540 (10.3) | 510 (9.3) | 59 (2.2) | 521 (8.3) | 36 (2.2) | 557 (10.2) | 5 (0.8) | 534 (13.4) | 1.0 (0.04) |
| Austria ² | 518 (5.3) | 545 (7.2) | 503 (5.5) | 77 (1.7) | 526 (5.8) | 19 (1.6) | 533 (9.4) | 4 (0.8) | 502 (13.7) | 0.6 (0.04) |
| Canada ² | 519 (2.8) | 537 (3.8) | 504 (3.5) | 56 (2.1) | 539 (5.1) | 38 (1.9) | 547 (5.0) | 7 (1.0) | 526 (14.6) | 1.1 (0.05) |
| Cyprus ² | 446 (2.5) | 454 (4.9) | 439 (3.7) | 63 (2.1) | 435 (4.3) | 29 (1.8) | 471 (4.8) | 8 (1.3) | 451 (9.0) | 1.0 (0.05) |
| Czech Republic | 466 (12.3) | 488 (11.3) | 443 (16.8) | 92 (1.5) | 464 (13.8) | 8 (1.4) | 482 (17.8) | 0 (0.2) | — | 0.4 (0.03) |
| Denmark ² | 547 (3.3) | 575 (4.0) | 523 (4.0) | 68 (2.0) | 571 (4.9) | 28 (1.6) | 563 (4.7) | 4 (0.7) | 562 (11.9) | 0.9 (0.04) |
| France ² | 523 (5.1) | 544 (5.6) | 506 (5.3) | 59 (2.3) | 517 (5.1) | 35 (2.3) | 539 (6.7) | 5 (0.7) | 505 (14.7) | 1.0 (0.04) |
| Germany ² | 495 (5.9) | 509 (8.7) | 480 (8.8) | — | — | — | — | — | — | — |
| Hungary | 483 (3.2) | 485 (4.9) | 481 (4.8) | 74 (0.9) | 480 (3.2) | 24 (0.8) | 496 (5.5) | 2 (0.2) | — | 0.7 (0.02) |
| Iceland ² | 534 (2.0) | 558 (3.4) | 514 (2.2) | 79 (1.1) | 553 (3.2) | 19 (1.1) | 542 (7.0) | 2 (0.4) | — | 0.7 (0.02) |
| Italy ² | 476 (5.5) | 490 (7.4) | 464 (6.0) | 55 (2.6) | 479 (6.3) | 40 (2.2) | 486 (7.2) | 5 (0.9) | 477 (11.2) | 1.0 (0.05) |
| Lithuania ² | 469 (6.1) | 485 (7.3) | 461 (7.7) | 67 (1.8) | 472 (5.8) | 29 (1.7) | 480 (5.2) | 4 (0.5) | 484 (11.5) | 0.8 (0.03) |
| Netherlands ² | 560 (4.7) | 585 (5.6) | 533 (5.9) | 82 (1.7) | 606 (6.2) | 16 (1.6) | 581 (11.1) | 1 (0.3) | — | 0.7 (0.03) |
| New Zealand | 522 (4.5) | 536 (4.9) | 507 (6.2) | 75 (1.4) | 544 (6.1) | 23 (1.4) | 552 (5.9) | 2 (0.3) | — | 0.7 (0.03) |
| Norway ² | 528 (4.1) | 555 (5.3) | 501 (4.8) | 85 (1.4) | 541 (5.1) | 14 (1.3) | 558 (9.5) | 1 (0.3) | — | 0.5 (0.03) |
| Russian Federation ² | 471 (6.2) | 488 (6.5) | 460 (6.6) | 56 (2.0) | 463 (5.9) | 33 (1.4) | 484 (7.5) | 11 (1.2) | 494 (8.1) | 1.2 (0.06) |
| Slovenia ² | 512 (8.3) | 535 (12.7) | 490 (8.0) | 72 (2.7) | 521 (9.4) | 25 (2.6) | 518 (9.5) | 2 (0.6) | — | 0.7 (0.05) |
| South Africa ² | 356 (8.3) | 365 (9.3) | 348 (10.8) | 33 (1.8) | 394 (17.1) | 51 (1.8) | 375 (10.9) | 17 (1.2) | 344 (7.2) | 1.7 (0.05) |
| Sweden | 552 (4.3) | 573 (5.9) | 531 (3.9) | 90 (0.9) | 579 (5.4) | 9 (0.9) | 580 (7.8) | 1 (0.2) | — | 0.4 (0.02) |
| Switzerland | 540 (5.8) | 555 (6.4) | 522 (7.4) | 67 (1.6) | 569 (4.9) | 28 (1.3) | 550 (5.6) | 5 (0.9) | 522 (10.6) | 0.9 (0.04) |
| United States ² | 461 (3.2) | 466 (4.1) | 456 (3.6) | 76 (1.5) | 475 (3.8) | 22 (1.5) | 486 (5.9) | 2 (0.2) | — | 0.7 (0.02) |

¹ Average hours based on: No time = 0; Less than 1 hour = .5; 1–2 hours = 1.5; 3–5 hours = 4; More than 5 hours = 7.

² Countries not meeting all International Association for the Evaluation of Education Achievement's sampling specifications.

—Data not available or not applicable.

NOTE.—End of secondary school is equivalent to 12th-grade in the U.S. and a few other countries, but ranges from 9th- to 14th-grade among the survey countries. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Mathematics and Science Achievement in the Final Year of Secondary School: IEA's Third International Mathematics and Science Study, 1998*, by Ina V.S. Mullis et al. Copyright © 1998 Boston College, Chestnut Hill, MA. (This table was prepared October 1998.)

Table 412.—Average science scores, at the end of secondary school, by sex, and average time spent studying science out of school, by country: 1994–95

| Country | Average score in science | | | Amount of daily out-of-school study time in science | | | | | | Average hours ¹ |
|---------------------------------|--------------------------|------------|------------|---|------------|------------------|------------|---------------------|------------|----------------------------|
| | Science overall | Males | Females | Less than 1 hour | | One to two hours | | Three or more hours | | |
| | | | | Percent | Mean score | Percent | Mean score | Percent | Mean score | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Australia ² | 527 (9.8) | 547 (11.5) | 513 (9.4) | 58 (1.8) | 540 (9.5) | 35 (1.7) | 575 (6.9) | 7 (1.0) | 588 (33.0) | 1.0 (0.04) |
| Austria ² | 520 (5.6) | 554 (8.7) | 501 (5.8) | 87 (1.4) | 529 (6.0) | 11 (1.4) | 526 (13.8) | 1 (0.3) | — | 0.4 (0.03) |
| Canada ² | 532 (2.6) | 550 (3.6) | 518 (3.8) | 57 (2.1) | 554 (4.2) | 35 (1.8) | 567 (6.8) | 8 (0.9) | 537 (18.0) | 1.1 (0.05) |
| Cyprus ² | 448 (3.0) | 459 (5.8) | 439 (3.0) | 80 (1.1) | 436 (3.7) | 16 (0.9) | 483 (10.7) | 4 (0.6) | 552 (11.8) | 0.5 (0.03) |
| Czech Republic | 487 (8.8) | 512 (8.8) | 460 (11.0) | 84 (2.6) | 520 (11.6) | 14 (2.3) | 571 (11.5) | 3 (0.5) | 583 (13.6) | 0.5 (0.05) |
| Denmark ² | 509 (3.6) | 532 (5.4) | 490 (4.1) | 73 (1.8) | 555 (4.7) | 25 (1.6) | 570 (6.1) | 3 (0.6) | 565 (15.0) | 0.7 (0.03) |
| France ² | 487 (5.1) | 508 (6.7) | 468 (4.8) | 59 (2.0) | 497 (5.7) | 35 (1.8) | 525 (7.0) | 6 (0.8) | 515 (9.1) | 1.0 (0.04) |
| Germany ² | 497 (5.1) | 514 (7.9) | 478 (8.5) | — | — | — | — | — | — | — |
| Hungary | 471 (3.0) | 484 (4.2) | 455 (4.3) | 67 (1.2) | 475 (3.9) | 27 (0.9) | 486 (4.9) | 6 (0.6) | 497 (11.5) | 0.4 (0.03) |
| Iceland ² | 549 (1.5) | 572 (2.7) | 530 (2.1) | 87 (1.0) | 566 (2.5) | 12 (1.0) | 575 (4.6) | 1 (0.3) | — | 0.9 (0.01) |
| Italy ² | 475 (5.3) | 495 (6.7) | 458 (5.6) | 70 (2.8) | 487 (6.3) | 25 (2.5) | 482 (9.7) | 5 (1.2) | 462 (13.9) | 0.8 (0.06) |
| Lithuania ² | 461 (5.7) | 481 (6.4) | 450 (7.3) | 69 (1.5) | 465 (5.5) | 26 (1.3) | 469 (6.5) | 5 (0.6) | 470 (11.4) | 0.8 (0.03) |
| Netherlands ² | 558 (5.3) | 582 (5.7) | 532 (6.2) | 78 (2.8) | 593 (6.4) | 20 (2.9) | 605 (16.9) | 1 (0.4) | — | 0.7 (0.03) |
| New Zealand | 529 (5.2) | 543 (7.1) | 515 (5.2) | 80 (1.1) | 551 (6.3) | 18 (1.1) | 581 (6.6) | 3 (0.5) | 553 (15.3) | 0.6 (0.02) |
| Norway ² | 544 (4.1) | 574 (5.1) | 513 (4.5) | 74 (2.4) | 592 (7.1) | 23 (2.2) | 598 (10.8) | 3 (0.7) | 583 (23.8) | 0.5 (0.02) |
| Russian Federation ² | 481 (5.7) | 510 (5.7) | 463 (6.7) | 61 (1.6) | 478 (6.0) | 30 (1.3) | 488 (7.0) | 10 (0.8) | 501 (8.0) | 1.1 (0.04) |
| Slovenia ² | 517 (8.2) | 541 (12.7) | 494 (6.4) | 85 (2.0) | 528 (8.1) | 13 (1.9) | 548 (8.9) | 2 (0.6) | — | 0.5 (0.04) |
| South Africa ² | 349 (10.5) | 367 (11.5) | 333 (13.0) | 47 (1.6) | 373 (15.5) | 35 (1.3) | 367 (12.2) | 18 (1.4) | 326 (7.3) | 1.5 (0.05) |
| Sweden | 559 (4.4) | 585 (5.9) | 534 (3.5) | 81 (1.9) | 599 (7.4) | 17 (1.8) | 632 (10.1) | 2 (0.5) | — | 0.6 (0.03) |
| Switzerland | 523 (5.3) | 540 (6.1) | 500 (7.8) | 76 (2.3) | 564 (6.6) | 21 (2.3) | 564 (10.9) | 3 (0.9) | 508 (29.0) | 0.7 (0.04) |
| United States ² | 480 (3.3) | 492 (4.5) | 469 (3.9) | 76 (2.1) | 505 (4.3) | 21 (2.1) | 517 (5.7) | 2 (0.4) | — | 0.7 (0.04) |

¹ Average hours based on: No time = 0; Less than 1 hour = .5; 1–2 hours = 1.5; 3–5 hours = 4; More than 5 hours = 7.

² Countries not meeting all International Association for the Evaluation of Education Achievement's sampling specifications.

—Data not available or not applicable.

NOTE.—End of secondary school is equivalent to 12th-grade in the U.S. and a few other countries, but ranges from 9th- to 14th-grade among the survey countries. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Mathematics and Science Achievement in the Final Year of Secondary School: IEA's Third International Mathematics and Science Study, 1998*, by Ina V.S. Mullis et al. Copyright © 1998 Boston College, Chestnut Hill, MA. (This table was prepared October 1998.)

Table 413.—Reading literacy test scores of 9-year-olds: Selected countries, 1992

| Country | Grade tested | Mean age | Overall mean score | Narrative ¹ 1st quartile | Narrative ¹ mean score | Narrative ¹ 3rd quartile | Expository ² mean score | Documents ³ mean score |
|-----------------------------|--------------|----------|--------------------|-------------------------------------|-----------------------------------|-------------------------------------|------------------------------------|-----------------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Finland | 3 | 9.7 | 569 (3.4) | 508 | 568 (3.0) | 602 | 569 (3.1) | 569 (4.0) |
| United States | 4 | 10.0 | 547 (2.8) | 476 | 553 (3.1) | 619 | 538 (2.6) | 550 (2.7) |
| Sweden | 3 | 9.8 | 539 (2.8) | 467 | 536 (2.6) | 592 | 542 (2.7) | 539 (3.2) |
| France | 4 | 10.1 | 531 (4.0) | 467 | 532 (4.1) | 580 | 533 (4.1) | 527 (3.9) |
| Italy | 4 | 9.9 | 529 (4.3) | 468 | 533 (4.0) | 576 | 538 (4.0) | 517 (4.9) |
| New Zealand | 5 | 10.0 | 528 (3.3) | 452 | 534 (3.5) | 594 | 531 (3.1) | 521 (3.3) |
| Norway | 3 | 9.8 | 524 (2.6) | 455 | 525 (2.8) | 576 | 528 (2.3) | 519 (2.8) |
| Iceland ⁴ | 3 | 9.8 | 518 (0.0) | 448 | 518 (0.0) | 571 | 517 (0.0) | 519 (0.0) |
| Hong Kong | 4 | 10.0 | 517 (3.9) | 431 | 494 (4.1) | 548 | 503 (3.4) | 554 (4.2) |
| Singapore | 3 | 9.3 | 515 (1.0) | 450 | 521 (1.1) | 567 | 519 (1.0) | 504 (1.0) |
| Switzerland | 3 | 9.7 | 511 (2.7) | 438 | 506 (2.6) | 566 | 507 (2.7) | 522 (2.8) |
| Ireland | 4 | 9.3 | 509 (3.6) | 445 | 518 (3.7) | 571 | 514 (3.2) | 495 (3.8) |
| Belgium ⁵ | 4 | 9.8 | 507 (3.2) | 439 | 510 (3.3) | 558 | 505 (2.8) | 506 (3.5) |
| Greece | 4 | 9.3 | 504 (3.7) | 447 | 514 (3.8) | 567 | 511 (3.6) | 488 (3.8) |
| Spain | 4 | 10.0 | 504 (2.5) | 429 | 497 (2.4) | 543 | 505 (2.3) | 509 (2.7) |
| Germany (former West) | 3 | 9.4 | 503 (3.0) | 421 | 491 (2.8) | 543 | 497 (2.9) | 520 (3.2) |
| Canada ⁶ | 3 | 8.9 | 500 (3.0) | 437 | 502 (3.5) | 566 | 499 (2.7) | 500 (2.8) |
| Germany (former East) | 3 | 9.5 | 499 (4.3) | 414 | 482 (4.2) | 531 | 493 (3.6) | 522 (5.0) |
| Hungary | 3 | 9.3 | 499 (3.1) | 437 | 496 (2.9) | 541 | 493 (3.1) | 509 (3.5) |
| Slovenia | 3 | 9.7 | 498 (2.6) | 435 | 502 (2.7) | 570 | 489 (2.5) | 503 (2.5) |
| Netherlands | 3 | 9.2 | 485 (3.6) | 425 | 494 (3.3) | 539 | 480 (3.4) | 481 (3.9) |
| Cyprus | 4 | 9.8 | 481 (2.3) | 421 | 492 (2.4) | 548 | 475 (2.3) | 476 (2.1) |
| Portugal | 4 | 10.4 | 478 (3.6) | 419 | 483 (3.3) | 531 | 480 (3.0) | 471 (4.5) |
| Denmark | 3 | 9.8 | 475 (3.5) | 386 | 463 (3.4) | 539 | 467 (3.5) | 496 (3.6) |
| Trinidad/Tobago | 4 | 9.6 | 451 (3.4) | 383 | 455 (3.6) | 502 | 458 (3.4) | 440 (3.3) |
| Indonesia | 4 | 10.8 | 394 (3.0) | 351 | 402 (2.8) | 436 | 411 (3.2) | 369 (3.0) |
| Venezuela | 4 | 10.1 | 383 (3.4) | 322 | 378 (3.2) | 426 | 396 (3.3) | 374 (3.7) |

¹ Narrative prose is continuous text in which the writer's aim is to tell a story.

² Expository prose is continuous text designed to describe, explain, or otherwise convey factual information or opinion to the reader.

³ Documents are structured information presented in the form of charts, tables, maps, graphs, lists, or sets of instructions.

⁴ Iceland tested all students, therefore standard errors are not applicable.

⁵ Only French-speaking students were tested.

⁶ British Columbia only.

NOTE.—Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *How in the World Do Students Read?*, 1992. (This table was prepared April 1993.)

Table 414.—Reading literacy test scores of 14-year-olds: Selected countries, 1992

| Country | Grade tested | Mean age | Overall mean score | Narrative ¹ mean score | Expository ² 1st quartile | Expository ² mean score | Expository ² 3rd quartile | Documents ³ mean score |
|------------------------------|--------------|----------|--------------------|-----------------------------------|--------------------------------------|------------------------------------|--------------------------------------|-----------------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Finland | 8 | 14.7 | 560 (2.5) | 559 (2.8) | 493 | 541 (2.2) | 575 | 580 (2.5) |
| France | 9 | 15.4 | 549 (4.3) | 556 (4.2) | 484 | 546 (4.3) | 580 | 544 (4.2) |
| Sweden | 8 | 14.8 | 546 (2.5) | 556 (2.6) | 469 | 533 (2.4) | 576 | 550 (2.4) |
| New Zealand | 10 | 15.0 | 545 (5.6) | 547 (5.7) | 457 | 535 (5.7) | 597 | 552 (5.3) |
| Hungary | 8 | 14.1 | 536 (3.3) | 530 (3.1) | 469 | 536 (3.6) | 577 | 542 (3.2) |
| Iceland ⁴ | 8 | 14.8 | 536 (0.0) | 550 (0.0) | 472 | 548 (0.0) | 617 | 509 (0.0) |
| Switzerland | 8 | 14.9 | 536 (3.2) | 534 (3.4) | 466 | 525 (3.2) | 572 | 549 (3.0) |
| Hong Kong | 9 | 15.2 | 535 (3.7) | 509 (3.7) | 480 | 540 (3.8) | 576 | 557 (3.8) |
| United States | 9 | 15.0 | 535 (4.8) | 539 (4.9) | 456 | 539 (5.6) | 599 | 528 (4.0) |
| Singapore | 8 | 14.4 | 534 (1.1) | 530 (1.1) | 476 | 539 (1.2) | 574 | 533 (1.1) |
| Slovenia | 8 | 14.7 | 532 (2.3) | 534 (2.6) | 471 | 525 (2.2) | 576 | 537 (2.2) |
| Germany (former East) | 8 | 14.4 | 526 (3.5) | 512 (3.9) | 464 | 523 (3.5) | 566 | 543 (2.9) |
| Denmark | 8 | 14.8 | 525 (2.1) | 517 (2.0) | 458 | 524 (2.2) | 573 | 532 (2.1) |
| Portugal | 9 | 15.6 | 523 (3.1) | 523 (2.5) | 469 | 523 (3.4) | 556 | 523 (3.4) |
| Canada ⁵ | 8 | 13.9 | 522 (3.0) | 526 (3.1) | 449 | 516 (3.1) | 569 | 522 (2.7) |
| Germany (former West) | 8 | 14.6 | 522 (4.4) | 514 (4.9) | 453 | 521 (4.5) | 573 | 532 (3.9) |
| Norway | 8 | 14.8 | 516 (2.3) | 515 (2.1) | 464 | 520 (2.4) | 569 | 512 (2.4) |
| Italy | 8 | 14.1 | 515 (3.4) | 520 (3.6) | 459 | 524 (3.2) | 565 | 501 (3.3) |
| Netherlands | 8 | 14.3 | 514 (4.9) | 506 (4.8) | 442 | 503 (4.7) | 546 | 533 (5.3) |
| Ireland | 9 | 14.5 | 511 (5.2) | 510 (5.3) | 439 | 505 (5.3) | 555 | 518 (4.9) |
| Greece | 9 | 14.4 | 509 (2.9) | 526 (2.9) | 450 | 508 (3.1) | 548 | 493 (2.6) |
| Cyprus | 9 | 14.8 | 497 (2.2) | 516 (2.2) | 427 | 492 (2.4) | 536 | 482 (2.0) |
| Spain | 8 | 14.2 | 490 (2.5) | 500 (3.0) | 435 | 495 (2.6) | 536 | 475 (2.0) |
| Belgium ⁶ | 8 | 14.3 | 481 (4.9) | 484 (5.1) | 415 | 477 (4.8) | 522 | 483 (4.7) |
| Trinidad/Tobago | 9 | 14.4 | 479 (1.7) | 482 (1.7) | 408 | 485 (1.8) | 537 | 472 (1.7) |
| Thailand | 9 | 15.2 | 477 (6.2) | 468 (6.6) | 429 | 486 (5.9) | 533 | 478 (6.2) |
| Philippines | 8 | 14.5 | 430 (3.9) | 421 (3.6) | 378 | 439 (4.1) | 472 | 430 (3.9) |
| Venezuela | 9 | 15.5 | 417 (3.1) | 407 (2.9) | 381 | 433 (3.3) | 482 | 412 (3.0) |
| Nigeria ^{7,8} | 9 | 15.3 | 401 (—) | 402 (—) | 351 | 406 (—) | 441 | 394 (—) |
| Zimbabwe ⁸ | 9 | 15.5 | 372 (3.8) | 367 (3.3) | 326 | 374 (3.6) | 411 | 373 (4.6) |
| Botswana | 9 | 14.7 | 330 (2.0) | 340 (1.6) | 294 | 339 (1.9) | 371 | 312 (2.4) |

¹ Narrative prose is continuous text in which the writer's aim is to tell a story.

² Expository prose is continuous text designed to describe, explain, or otherwise convey factual information or opinion to the reader.

³ Documents are structured information presented in the form of charts, tables, maps, graphs, lists, or sets of instructions.

⁴ Iceland tested all students, therefore standard errors are not applicable.

⁵ British Columbia only.

⁶ Only French-speaking students were tested.

⁷ Insufficient data to calculate the standard error.

⁸ Sampling response rate of schools was below 80 percent.
—Data not available.

NOTE.—Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *How in the World Do Students Read?*, 1992. (This table was prepared April 1993.)

Table 415.—Number of bachelor's degree recipients per 100 persons of the theoretical age of graduation,¹ by sex: Selected countries, 1989 to 1996

| Country | Men and women | | | | | | Men | | | | | | Women | | | | | |
|----------------------------|---------------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|
| | 1989 | 1990 | 1992 | 1994 | 1995 | 1996 | 1989 | 1990 | 1992 | 1994 | 1995 | 1996 | 1989 | 1990 | 1992 | 1994 | 1995 | 1996 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| Australia | 19.6 | — | 28.5 | 32.2 | 34.9 | 36.0 | 18.9 | — | 23.7 | 25.9 | 27.6 | 28.9 | 21.1 | — | 33.6 | 38.7 | 42.7 | 43.3 |
| Austria | 6.6 | 7.7 | — | 9.2 | 9.8 | 10.5 | 7.6 | 8.5 | — | 10.1 | 10.6 | 11.4 | 5.5 | 6.8 | — | 8.4 | 8.9 | 9.6 |
| Belgium | 16.5 | 17.1 | — | — | — | 15.9 | 18.9 | 19.5 | — | — | — | 16.7 | 14.1 | 14.7 | — | — | — | 15.2 |
| Canada | — | — | 32.2 | 30.3 | 31.8 | 31.9 | — | — | 27.6 | 25.5 | 26.4 | 26.5 | — | — | 37.6 | 35.3 | 37.4 | 37.4 |
| Denmark | 12.9 | 15.0 | 22.3 | 30.5 | 28.5 | 28.0 | 11.5 | 13.3 | 17.7 | 26.4 | 25.1 | 23.1 | 14.4 | 16.9 | 27.2 | 34.9 | 31.9 | 33.0 |
| Finland | 16.9 | 17.1 | — | 22.2 | 22.2 | 23.9 | 17.1 | 17.0 | — | 22.2 | 22.0 | 22.4 | 16.6 | 17.1 | 17.9 | 22.1 | 22.3 | 25.6 |
| France | 13.8 | 14.9 | — | — | — | — | 13.7 | 14.7 | — | — | — | — | 13.9 | 15.1 | — | — | — | — |
| Germany ² | 13.2 | 12.9 | — | 14.6 | 16.2 | 16.1 | 16.1 | 15.7 | — | 16.4 | 18.2 | 18.2 | 10.1 | 10.0 | — | 12.6 | 14.0 | 13.5 |
| Ireland | 16.4 | 17.4 | 17.8 | — | 21.2 | 25.5 | 31.9 | 17.5 | 17.9 | — | 19.9 | 24.6 | — | 17.3 | 17.7 | — | 22.7 | 26.4 |
| Italy | 8.9 | 9.2 | — | 11.3 | 11.8 | 12.6 | 9.1 | 9.3 | — | 10.3 | 10.8 | 11.4 | 8.7 | 9.0 | — | 12.4 | 12.9 | 13.8 |
| Japan | — | 22.1 | 23.2 | 23.2 | 22.8 | 22.9 | — | 31.5 | 31.9 | 31.0 | 30.4 | 30.7 | — | 12.4 | 14.0 | 15.2 | 14.9 | 14.9 |
| Netherlands | 10.2 | 8.0 | 17.6 | — | 22.0 | 19.6 | 12.3 | 9.4 | 17.3 | — | 20.6 | 18.2 | 7.9 | 6.5 | 17.8 | — | 23.4 | 21.1 |
| New Zealand | 36.1 | 15.3 | 17.2 | — | 24.7 | 30.8 | 16.6 | 15.4 | 16.9 | — | 20.9 | 26.2 | 15.5 | 15.1 | 17.4 | — | 28.6 | 35.4 |
| Norway | 24.6 | 27.5 | 19.0 | 23.0 | 23.0 | 27.4 | 18.1 | 19.1 | 14.5 | 17.4 | 17.2 | 20.2 | 31.7 | 36.3 | 23.7 | 28.8 | 28.9 | 34.8 |
| Portugal | — | 7.6 | — | 13.8 | 14.6 | 15.7 | — | 5.9 | — | 10.4 | 10.8 | 11.3 | — | 9.3 | — | 17.2 | 18.3 | 20.2 |
| Spain | 17.7 | 18.6 | — | — | 24.0 | 26.1 | 14.6 | 15.3 | — | — | 19.6 | 21.5 | 21.0 | 22.0 | — | — | 28.6 | 31.0 |
| Sweden | 13.0 | 12.2 | 14.1 | 13.7 | 15.5 | 19.1 | 11.1 | 10.5 | 11.8 | 12.0 | 14.0 | 15.1 | 15.1 | 14.0 | 16.4 | 15.4 | 17.0 | 23.3 |
| Switzerland | 7.7 | 7.7 | — | 8.5 | 9.1 | 9.3 | 10.1 | 10.3 | — | 10.7 | 11.4 | 11.5 | 5.3 | 5.1 | — | 6.3 | 6.8 | 7.2 |
| Turkey | 6.0 | 6.1 | 6.1 | — | 7.0 | — | 7.3 | 7.5 | — | 8.6 | — | 8.6 | — | 4.6 | 4.6 | — | 5.2 | — |
| United Kingdom | — | — | 20.4 | 25.9 | 31.6 | 34.4 | — | — | 21.0 | 25.5 | 30.3 | 32.7 | — | — | 19.8 | 26.3 | 32.9 | 36.2 |
| United States | 27.3 | 28.6 | 27.4 | 32.2 | 33.2 | 34.7 | 25.5 | 26.2 | 24.6 | 28.7 | 29.3 | 30.6 | 29.2 | 31.1 | 30.3 | 35.9 | 37.3 | 38.9 |

¹The graduation rate relates the number of people with bachelor's degrees to the number of people in the population at typical age of graduation.

²Data for 1989 are for the former West Germany.

—Data not available.

SOURCE: Organization for Economic Cooperation and Development, unpublished tabulations. (This table was prepared September 1999.)

Table 416.—Percent of bachelor's degrees awarded in science: Selected countries, 1985, 1990, and 1994 to 1996

| Country | All science degrees | | | | | Natural sciences | | | | | Mathematics and computer science | | | | | Engineering | | | | |
|----------------------------|---------------------|------|------|------|------|------------------|------|------|------|------|----------------------------------|------|------|------|------|-------------|------|------|------|------|
| | 1985 | 1990 | 1994 | 1995 | 1996 | 1985 | 1990 | 1994 | 1995 | 1996 | 1985 | 1990 | 1994 | 1995 | 1996 | 1985 | 1990 | 1994 | 1995 | 1996 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| Australia | — | — | 19.2 | 19.3 | 20.1 | — | — | 10.2 | 9.9 | 10.0 | — | — | 3.6 | 3.8 | 4.1 | — | — | 5.4 | 5.6 | 6.0 |
| Austria | 16.8 | 19.6 | 20.7 | 21.1 | 22.1 | 5.0 | 5.3 | 5.5 | 6.0 | 6.2 | 4.1 | 5.2 | 5.4 | 5.3 | 5.1 | 7.7 | 9.0 | 9.8 | 9.9 | 10.8 |
| Belgium | — | — | — | — | 24.4 | 4.6 | — | — | — | — | 3.1 | 1.7 | — | — | 1.8 | — | — | — | — | 19.5 |
| Canada | 17.1 | 16.4 | 16.3 | 16.7 | 17.4 | 4.9 | 6.0 | 6.2 | 6.5 | 6.7 | 4.5 | 4.2 | 3.8 | 3.8 | 4.0 | 7.7 | 6.2 | 6.3 | 6.4 | 6.7 |
| Denmark | — | — | — | — | 19.7 | 6.3 | 4.4 | 4.2 | 2.5 | 1.4 | — | — | — | — | 3.3 | 16.2 | 21.7 | — | 17.0 | 15.1 |
| Finland ¹ | 39.3 | 33.5 | 37.0 | 37.2 | 35.7 | 7.7 | 4.1 | 4.4 | 4.0 | 4.1 | 6.3 | 5.9 | 7.4 | 6.9 | 6.0 | 25.3 | 23.4 | 25.1 | 26.3 | 25.6 |
| Germany ² | 23.8 | 31.3 | 31.7 | 31.6 | 31.1 | 5.0 | 7.2 | 6.9 | 6.7 | 6.6 | 2.3 | 3.5 | 5.2 | 5.2 | 5.0 | 16.5 | 20.5 | 19.6 | 19.7 | 19.5 |
| Ireland | 28.8 | 34.1 | — | 32.3 | 28.0 | 12.8 | 14.1 | — | 16.9 | 12.2 | 4.0 | 6.3 | — | 4.7 | 6.3 | 12.0 | 13.7 | — | 10.7 | 9.6 |
| Italy | 19.5 | 19.7 | 19.1 | 19.5 | 19.9 | 8.1 | 7.6 | 7.0 | 6.8 | 6.6 | 3.1 | 3.9 | 3.4 | 3.8 | 3.7 | 8.3 | 8.3 | 8.7 | 8.9 | 9.6 |
| Japan | 22.7 | 23.5 | 22.8 | 22.8 | — | 2.4 | 2.4 | 3.4 | 3.4 | 3.4 | — | — | — | — | — | 20.3 | 21.0 | 19.3 | 19.3 | 19.3 |
| Netherlands .. | 21.8 | 21.1 | — | — | 16.0 | 8.5 | 7.1 | — | — | 1.6 | 1.2 | 1.6 | — | 1.6 | 1.7 | 12.1 | 12.4 | — | — | 12.8 |
| New Zealand .. | 20.5 | 19.5 | — | — | — | 11.7 | 8.2 | — | — | — | 5.5 | 5.5 | — | — | — | 3.3 | 5.8 | — | 3.2 | 3.6 |
| Norway | — | 12.9 | 18.6 | 16.8 | 15.2 | 2.5 | 2.1 | 4.1 | 3.1 | 2.8 | 1.8 | 0.6 | 0.4 | 0.5 | 0.4 | — | 10.2 | 14.2 | 13.2 | 11.9 |
| Portugal | — | — | 15.9 | 15.0 | 15.4 | 6.5 | 6.7 | 2.6 | 2.2 | 2.8 | — | — | 2.4 | 2.8 | 2.8 | — | 10.5 | 11.0 | 9.9 | 9.8 |
| Spain | 13.9 | 15.0 | — | 18.2 | 18.5 | 5.5 | 5.7 | — | 4.3 | 4.8 | 1.3 | 2.6 | — | 4.5 | 4.3 | 7.0 | 6.7 | — | 9.4 | 9.4 |
| Sweden | 15.4 | 24.0 | 25.0 | 26.4 | 22.4 | 2.6 | 4.1 | 3.9 | 3.9 | 3.7 | 1.6 | 4.7 | 5.3 | 5.5 | 4.5 | 11.3 | 15.2 | 15.9 | 17.0 | 14.3 |
| Switzerland .. | 20.2 | 23.0 | 22.1 | 22.3 | 22.4 | 10.3 | 11.2 | 10.4 | 10.4 | 11.1 | 2.1 | 3.7 | 3.3 | 3.7 | 3.1 | 7.9 | 8.1 | 8.4 | 8.3 | 8.2 |
| Turkey | 23.0 | 20.6 | — | 20.9 | — | 3.6 | 4.6 | — | 5.1 | — | 1.6 | 2.1 | — | 2.7 | — | 17.8 | 13.8 | — | 13.1 | — |
| United States .. | 21.7 | 16.9 | 15.9 | — | 16.8 | 6.3 | 5.1 | 6.0 | — | 6.9 | 5.5 | 4.0 | 3.3 | 3.3 | 3.2 | 9.8 | 7.8 | 6.7 | 6.7 | 6.6 |

¹Data for the Flemish population of Belgium.

²Data for 1985 are for the former West Germany.

—Data not available.

SOURCE: Organization for Economic Cooperation and Development, unpublished data. (This table was prepared September 1999.)

Table 419. Total public direct expenditures on education as a percentage of the gross national product: 1985 to 1995

| Country | All institutions ¹ | | | | | Primary and secondary institutions | | | | | Higher education institutions | | | | |
|---|-------------------------------|------------|------------|------------|------------|------------------------------------|------------|------------|------------|------------|-------------------------------|------------|------------|------------|------------|
| | 1985 | 1990 | 1993 | 1994 | 1995 | 1985 | 1990 | 1993 | 1994 | 1995 | 1985 | 1990 | 1993 | 1994 | 1995 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Average for year | 5.3 | 4.9 | 5.1 | 5.0 | 4.9 | 3.7 | 3.5 | 3.6 | 3.5 | 3.4 | 1.1 | 1.0 | 1.0 | 1.0 | 0.9 |
| Average for countries reporting data for all years | 5.3 | 5.3 | 5.5 | 5.4 | 5.3 | 3.7 | 3.7 | 3.7 | 3.7 | 3.6 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| Australia | 5.4 | 4.3 | 4.7 | 4.4 | 4.5 | 3.5 | 3.2 | 3.5 | 3.2 | 3.2 | 1.7 | 1.0 | 1.1 | 1.1 | 1.2 |
| Austria | 5.6 | 5.2 | 5.3 | — | 5.3 | 3.7 | 3.6 | 3.5 | — | 3.8 | 1.0 | 1.0 | 1.0 | — | 0.9 |
| Belgium | 6.3 | 4.8 | 5.5 | 5.5 | 5.0 | 4.0 | 3.4 | 3.6 | 3.8 | 3.4 | 1.0 | 0.8 | 1.0 | 1.0 | 0.9 |
| Canada | 6.1 | 5.4 | 6.2 | 6.0 | 5.8 | 4.1 | 3.7 | 4.2 | 4.2 | 4.0 | 2.0 | 1.5 | 1.7 | 1.6 | 1.5 |
| Czech Republic | — | — | — | — | 4.8 | — | — | — | — | 3.4 | — | — | 0.7 | 0.8 | 0.7 |
| Denmark | 6.2 | 6.2 | 6.7 | 6.5 | 6.5 | 4.7 | 4.4 | 4.4 | 4.3 | 4.2 | 1.2 | 1.3 | 1.3 | 1.4 | 1.3 |
| Finland | 5.8 | 6.4 | 7.3 | 6.6 | 6.6 | — | 4.3 | 4.7 | 4.4 | 4.2 | — | 1.2 | 1.8 | 1.5 | 1.7 |
| France | — | 5.1 | 5.6 | 5.6 | 5.8 | — | 3.7 | 4.0 | 4.0 | 4.1 | — | 0.8 | 0.9 | 0.9 | 1.0 |
| Germany ² | 4.6 | — | 4.5 | 4.5 | 4.5 | 2.8 | — | 3.0 | 2.9 | 2.9 | 1.0 | — | 0.9 | 0.9 | 1.0 |
| Greece | — | — | 2.7 | 3.1 | 3.7 | — | — | 2.0 | 2.4 | 2.8 | — | — | 0.7 | 0.7 | 0.8 |
| Hungary | — | 5.0 | 5.9 | 5.7 | 4.9 | — | 3.5 | 4.1 | 3.9 | 3.3 | — | 0.8 | 0.9 | 0.9 | 0.8 |
| Iceland | — | 4.3 | 4.6 | 4.5 | 4.5 | — | 3.3 | 3.5 | 3.4 | 3.4 | — | 0.6 | 0.7 | 0.7 | 0.7 |
| Ireland | 5.6 | 4.7 | 5.1 | 5.1 | 4.7 | 4.0 | 3.3 | 3.6 | 3.6 | 3.3 | 0.9 | 0.9 | 1.0 | 1.0 | 0.9 |
| Italy | 4.7 | 5.8 | 5.0 | 4.6 | 4.5 | 3.2 | 4.1 | 3.5 | 3.3 | 3.2 | 0.6 | 1.0 | 0.8 | 0.7 | 0.7 |
| Japan | — | 3.6 | 3.6 | 3.8 | 3.6 | — | 2.9 | 2.9 | 2.9 | 2.8 | — | 0.4 | 0.4 | 0.5 | 0.4 |
| Korea | — | — | 3.7 | 3.6 | 3.6 | — | — | 3.0 | 2.9 | 3.0 | — | — | 0.3 | 0.3 | 0.3 |
| Luxembourg | — | — | — | — | 4.3 | — | — | — | — | 4.2 | — | — | — | — | 0.1 |
| Mexico | — | 3.2 | 3.7 | 4.5 | 4.6 | — | 2.2 | 2.7 | 3.2 | 3.4 | — | 0.7 | 0.6 | 0.9 | 0.8 |
| Netherlands | 6.2 | 5.7 | 4.6 | 4.5 | 4.6 | 4.1 | 3.6 | 3.0 | 3.0 | 3.0 | 1.5 | 1.6 | 1.2 | 1.2 | 1.1 |
| New Zealand | — | 5.5 | 5.8 | 5.4 | 5.3 | — | 3.9 | 4.2 | 3.9 | 3.8 | — | 1.2 | 1.2 | 1.1 | 1.1 |
| Norway | 5.1 | 6.2 | 6.8 | 6.9 | 6.8 | 4.0 | 4.1 | 4.0 | 4.1 | 4.1 | 0.7 | 1.1 | 1.3 | 1.4 | 1.5 |
| Poland | — | — | — | — | 5.2 | — | — | — | — | 3.3 | — | — | — | — | 0.8 |
| Portugal | — | — | 5.4 | 5.3 | 5.4 | — | — | 3.9 | 3.9 | 4.1 | — | — | 0.8 | 0.8 | 1.0 |
| Russia | — | — | — | — | 3.4 | — | — | — | — | 1.9 | — | — | — | — | 0.7 |
| Spain | 3.6 | 4.2 | 4.5 | 4.8 | 4.8 | 2.9 | 3.2 | 3.3 | 3.5 | 3.5 | 0.4 | 0.7 | 0.8 | 0.8 | 0.8 |
| Sweden | — | 5.3 | 6.6 | 6.6 | 6.6 | — | 4.4 | 4.6 | 4.5 | 4.4 | — | 1.0 | 1.4 | 1.5 | 1.6 |
| Switzerland | 4.9 | 5.0 | 5.5 | 5.5 | 5.5 | 4.0 | 3.7 | 4.1 | 4.1 | 4.1 | 0.9 | 1.0 | 1.1 | 1.1 | 1.1 |
| Turkey | — | 3.2 | 3.3 | 3.3 | 2.2 | — | 2.3 | 2.4 | 2.1 | 1.4 | — | 0.9 | 0.8 | 1.2 | 0.8 |
| United Kingdom | 4.9 | 4.3 | 4.6 | 4.6 | 4.6 | 3.1 | 3.5 | 3.8 | 3.8 | 3.8 | 1.0 | 0.7 | 0.7 | 0.7 | 0.7 |
| United States | 4.7 | 5.3 | 5.0 | 4.8 | 5.0 | 3.2 | 3.8 | 3.7 | 3.4 | 3.5 | 1.3 | 1.4 | 1.2 | 1.1 | 1.1 |

¹ Includes preprimary and other expenditures not classified by level.

² Data for 1985 refer to West Germany (Federal Republic of Germany before unification).

NOTE.—Direct public expenditure on educational services includes both amounts spent directly by governments to hire educational personnel and to procure other resources, and amounts provided by governments to public or private institutions. Figures

for 1985 also include transfers and payments to private entities, and thus are not strictly comparable with later figures.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Database*; and *Annual National Accounts*, vol.1, 1997. (This table was prepared October 1999.)

