

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 postsecondary 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

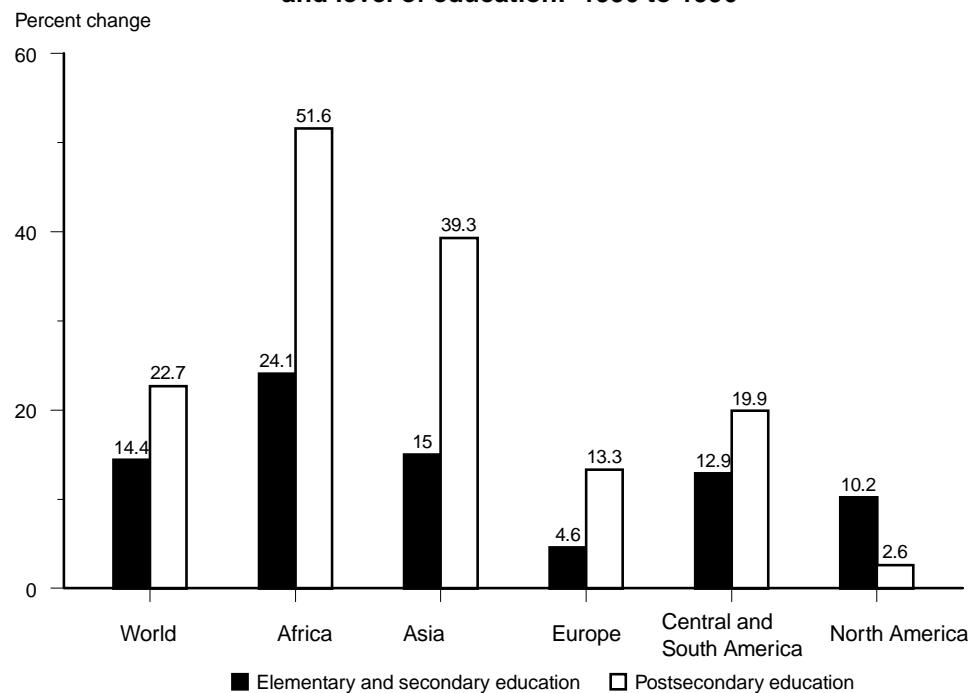
Zealand (17 percent), and the Netherlands (19 percent) (table 417).

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).

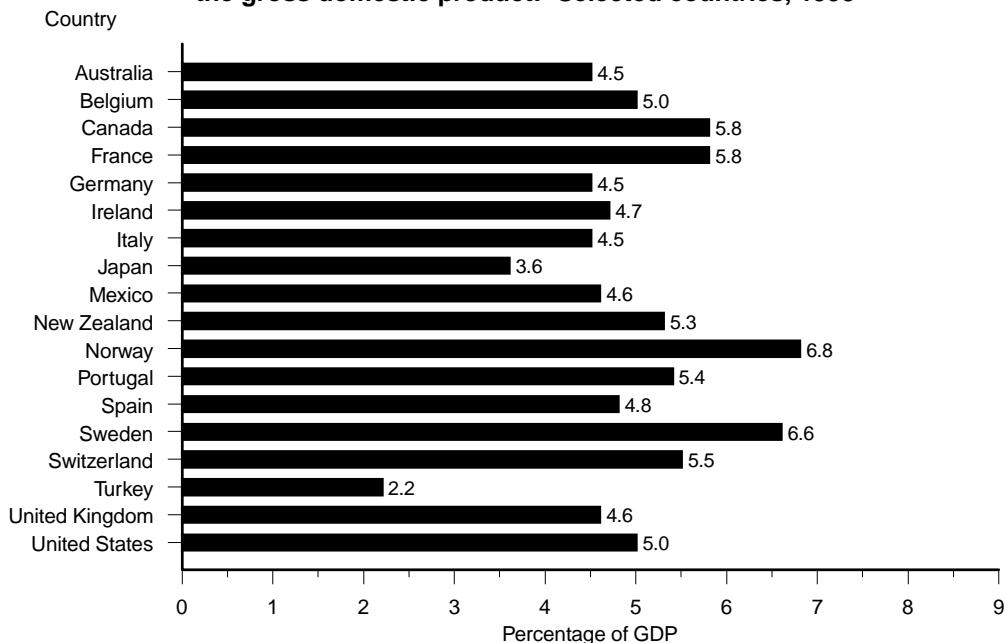
A comparison of public expenditures on education as a percent of gross domestic product (GDP) in OECD countries shows that national investment in education in 1995 ranged from 2.2 percent of GDP in Turkey to 6.8 percent in Norway (table 419).

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



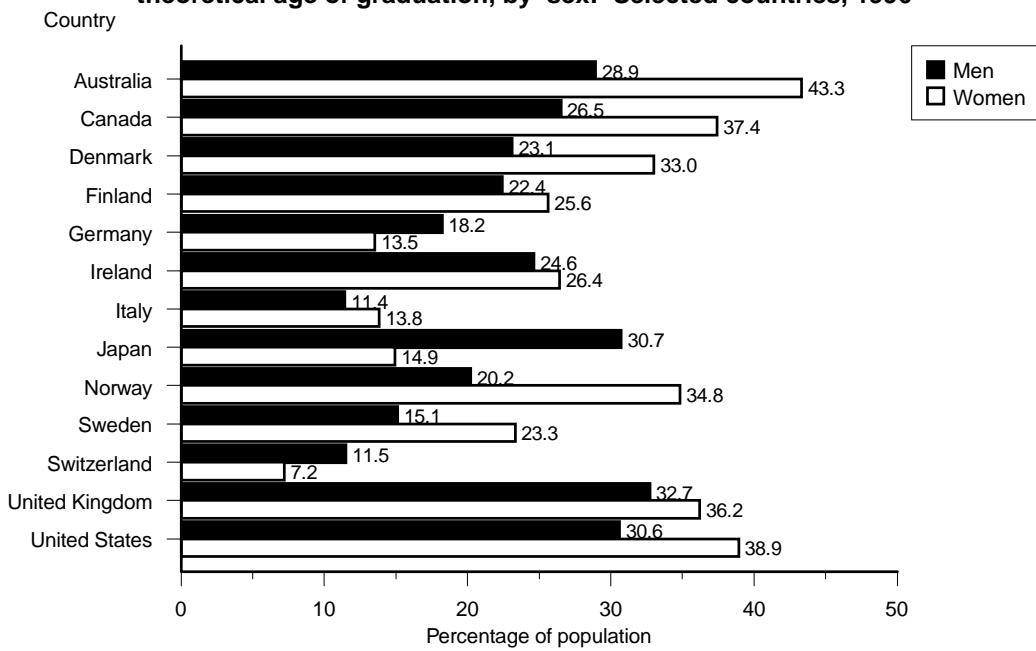
SOURCE: United Nations Educational, Scientific, and Cultural Organization, Paris, *Statistical Yearbook*, various years.

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

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 (Austria) (Australia) (Netherlands) Czech Republic	(Germany) (Italy) (France) Hungary Czech Republic (Lithuania) (Russian Federation)
Average scores significantly lower than the United States	Average scores significantly lower than the United States
England Hong Kong Iceland Canada (Hungary) Greece Singapore New Zealand Portugal (Slovenia) Norway Cyprus Ireland (Latvia) (Thailand) Scotland (Israel) Iran, Islamic Republic (Kuwait)	(Cyprus) (South Africa)

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

¹1996 data are for the 5-14 year old population.²1996 data are for the 15-19 year old population.³Data 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

¹Includes full-time and part-time enrollment.²Data for 1985 are for the former West Germany.³Postsecondary 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							
First (primary) level ⁸	857,052	78,029	495,087	131,762	87,315	60,043	4,815
Second level ⁹	541,444	62,128	336,068	52,471	65,414	22,611	2,752
Third level ¹⁰	264,521	14,360	144,753	62,876	16,972	23,913	1,647
51,087	1,541	14,266	16,416		4,930	13,518	416
Teachers, all levels, in thousands							
First (primary) level ⁸	38,263	2,341	19,616	8,224	3,731	4,079	272
Second level ⁹	19,046	1,663	10,874	2,541	2,260	1,580	129
Third level ¹⁰	15,368	584	7,524	4,385	1,083	1,679	112
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							
First (primary) level ⁸	980,993	107,813	569,907	131,159	104,910	62,008	5,197
Second level ⁹	596,791	80,585	364,204	48,968	75,504	24,811	2,720
Third level ¹⁰	315,555	24,373	182,321	63,364	22,079	21,569	1,849
68,647	2,855	23,382	18,828		7,326	15,629	628
Teachers, all levels, in thousands							
First (primary) level ⁸	47,083	3,791	24,441	9,354	5,165	4,001	331
Second level ⁹	22,593	2,390	12,691	2,780	3,006	1,582	143
Third level ¹⁰	19,352	1,241	9,932	5,065	1,519	1,449	146
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							
First (primary) level ⁸	1,105,367	130,308	646,855	137,836	116,672	66,511	7,186
Second level ⁹	650,876	95,667	395,725	47,367	82,490	26,500	3,127
Third level ¹⁰	373,200	30,698	220,333	69,453	25,841	23,984	2,891
81,291	3,944	30,796	21,016		8,342	16,026	1,167
Teachers, all levels, in thousands							
First (primary) level ⁸	52,081	4,474	26,977	10,104	5,816	4,269	439
Second level ⁹	24,340	2,802	13,515	2,848	3,366	1,649	161
Third level ¹⁰	21,759	1,468	11,283	5,561	1,703	1,528	217
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							
First (primary) level ⁸	1,127,901	134,610	661,015	138,812	118,993	67,119	7,353
Second level ⁹	661,750	98,061	402,264	47,619	83,920	26,737	3,150
Third level ¹⁰	381,890	32,222	226,169	69,853	26,291	24,356	3,000
84,261	4,327	32,582	21,339		8,781	16,028	1,204
Teachers, all levels, in thousands							
First (primary) level ⁸	52,270	4,649	27,190	9,742	5,937	4,306	446
Second level ⁹	24,641	2,890	13,635	2,866	3,428	1,661	161
Third level ¹⁰	21,535	1,537	11,327	5,173	1,722	1,552	223
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 400.—Selected statistics for countries¹ with populations over 10 million, by continent:
1980, 1990, and 1996**

Country	Population in millions			Persons per square kilometer in 1996	First level ²						
	1980	1990	1996		Enrollment in thousands			Enrollment ratio ⁶			
					1980	1990	1996	1980	1990	1996	
1	2	3	4	5	6	7	8	9	10	11	
World total⁷	4,447.1	5,282.0	5,767.4	43	541,444	596,791	661,750	95.8	98.7	100.4	
Africa											
Algeria ⁸	18.7	24.9	28.8	12	3,119	4,189	4,675	94	100	107	
Angola	7.0	9.2	11.2	9	1,301	990	—	174	91	—	
Cameroun	8.7	11.5	13.6	29	1,379	1,964	12,1897	98	101	13,88	
Cote d'Ivoire	8.2	11.7	14.0	43	1,025	1,415	11,1662	75	67	71	
Democratic Rep of the Congo	27.0	37.4	46.8	20	4,196	4,562	12,5,418	92	70	13,72	
Egypt ⁸	43.7	56.3	63.3	63	4,663	6,964	8,243	73	94	102	
Ethiopia	36.4	48.1	58.2	53	2,131	2,466	11,3,380	36	33	21,37	
Ghana ⁸	10.8	15.0	17.8	75	23,1,378	1,945	—	79	77	—	
Kenya ⁸	16.6	23.5	27.8	48	3,927	5,392	21,25,5,545	115	95	21,85	
Madagascar	9.1	12.6	15.4	26	1,724	1,571	13,1,638	26,127	84	21,73	
Morocco ⁸	19.4	24.0	27.0	61	2,172	2,484	3,161	83	67	84	
Mozambique ⁸	12.1	14.2	17.8	22	28,1,387	1,260	21,1,415	99	67	21,60	
Nigeria ⁸	72.0	96.2	115.0	125	22,12,117	13,607	12,16,191	26,105	85	13,89	
South Africa	29.2	37.1	42.4	35	25,4,353	6,952	8,159	85	109	116	
Sudan ⁸	18.7	24.1	27.3	11	1,464	2,043	3,000	50	50	53	
Uganda	13.1	16.6	20.3	84	35,1,292	25,35,2,470	21,2,912	35,50	35,74	21,73	
United Republic of Tanzania	18.6	25.5	30.8	35	36,3,368	36,3,379	36,3,943	93	70	66	
Zimbabwe	7.1	9.9	11.4	29	1,235	2,116	2,494	85	116	113	
Asia											
Afghanistan ⁸	16.1	14.8	20.9	32	1,116	623	21,1,312	34	27	21,49	
Bangladesh	88.2	109.8	120.1	834	8,240	11,940	—	61	69	—	
China	998.9	1,155.3	1,232.1	128	146,270	122,414	136,150	113	127	120	
India	688.9	850.8	944.6	287	73,873	99,118	110,390	83	97	101	
Indonesia	151.0	182.8	200.5	105	25,537	29,754	12,29,722	107	115	13,114	
Iran, Islamic Republic of	39.3	59.2	70.0	43	4,799	9,370	9,238	87	110	90	
Iraq	13.0	18.1	20.6	47	2,616	3,328	11,2,904	113	111	21,85	
Japan	116.8	123.5	125.4	332	11,827	9,373	8,106	101	100	102	
Kazakhstan	14.9	16.7	16.8	6	1,064	1,197	1,342	84	87	96	
Korea, North (DPR)	17.7	20.4	22.5	186	—	—	—	—	—	—	
Korea, South (Republic of)	38.1	42.9	45.3	457	5,658	4,869	3,811	110	105	94	
Malaysia	13.8	17.9	20.6	62	2,009	2,456	35,2,818	93	93	91	
Myanmar	33.8	41.4	45.9	68	4,148	5,385	11,5,414	91	105	21,100	
Nepal ⁸	14.5	18.8	22.0	156	1,068	2,789	13,3,192	86	108	13,110	
Pakistan	85.3	119.1	140.0	176	43,5,474	43,11,451	—	39	61	—	
Philippines	48.3	60.8	69.3	231	23,8,034	10,427	11,9,03	112	113	117	
Saudi Arabia	9.6	16.0	18.8	9	927	1,877	2,256	61	73	76	
Sri Lanka ⁸	14.8	17.1	18.1	276	2,081	2,112	1,844	103	105	109	
Syrian Arab Republic	8.7	12.4	14.6	79	1,556	2,452	2,690	100	108	101	
Thailand	46.7	55.6	58.7	114	7,393	6,957	5,910	99	99	88	
Turkey	44.4	56.1	61.8	80	5,656	6,862	12,6,467	96	99	13,105	
Uzbekistan	16.0	20.5	23.2	52	1,391	1,778	12,1,906	81	81	13,77	
Viet Nam	53.7	66.7	75.2	227	7,887	8,862	11,10,229	109	103	21,114	
Yemen	8.2	11.6	15.7	30	—	2,700	—	—	—	70	
Europe											
Belarus ⁸	9.7	10.3	10.3	50	750	615	625	104	95	98	
Belgium	9.9	10.0	10.2	333	842	719	12,739	104	100	13,103	
Czech Republic	10.3	10.3	10.3	130	647	546	11,542	96	96	21,104	
France	53.9	56.7	58.3	106	4,610	4,149	11,4,065	111	108	21,106	
Germany ⁴⁷	78.3	79.4	81.9	230	3,636	3,431	3,805	—	101	21,103	
Greece	9.6	10.2	10.5	79	901	813	11,675	103	98	21,94	
Hungary ⁸	10.7	10.4	10.0	108	1,162	1,131	11,507	96	95	21,104	
Italy ⁸	56.4	57.0	57.2	190	4,423	3,056	11,2,816	100	97	21,99	
Netherlands ⁸	14.1	15.0	15.6	381	1,333	1,082	11,1,208	100	102	21,107	
Poland ⁸	35.6	38.1	38.6	119	4,167	5,189	11,5,021	100	98	21,96	
Romania ⁸	22.2	23.2	22.7	95	3,237	1,253	1,405	104	91	104	
Russian Federation	138.7	148.3	148.1	9	6,009	7,596	12,7,849	102	109	13,108	
Spain ⁸	37.5	39.3	39.7	78	3,610	2,820	11,2,800	109	107	21,105	
Ukraine ⁸	50.0	51.9	51.6	85	3,592	3,991	—	102	89	—	
United Kingdom ⁸	56.3	57.6	58.1	238	4,911	4,533	11,51,5,284	103	104	21,116	
Yugoslavia, Federal Republic ⁸	9.5	10.2	10.3	101	—	467	438	—	72	71	
North America											
Canada	24.6	27.8	29.7	3	2,185	2,376	11,2,448	99	103	13,102	
Cuba	9.7	10.6	11.0	99	1,469	888	53,1,095	106	98	106	
Guatemala	6.9	9.2	10.9	100	803	32,1,249	1,511	71	32,79	84	
Mexico	67.6	83.2	92.7	47	14,666	14,402	11,14,623	120	114	21,115	
United States	230.4	254.1	269.4	29	20,420	22,429	11,24,046	99	102	21,102	
South America											
Argentina	28.1	32.5	35.2	13	3,917	4,965	25,5,250	106	106	113	
Brazil	121.7	148.0	161.1	19	22,598	28,944	33,131	98	106	120	
Chile	11.1	13.1	14.4	19	2,185	1,991	2,242	109	100	101	
Colombia	26.5	32.6	36.4	32	4,168	4,247	25,4,917	124	32,112	118	
Ecuador	8.0	10.3	11.7	41	1,534	1,846	1,888	117	116	127	
Peru	17.3	21.6	23.9	19	3,161	3,855	21,53,4,131	114	118	21,122	
Venezuela	15.1	19.5	22.3	24	3,158	4,053	4,262	93	96	91	
Oceania											
Australia ⁸	54,14.6	16.9	18.1	2	1,718	1,583	1,848	112	108	103	

¹ Selection based on total population for midyear 1996.² First level enrollment generally consists of elementary school, grades 1–6.³ 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 7–12.⁴ 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.⁵ In many countries, a child may be exempt from school attendance if there is no suitable school within a reasonable distance of his/her home.⁶ Data represent the total enrollment of all ages in the school level divided by the population of the specific age groups that correspond to the school level. The year shown in this column is the one in which the school or academic year starts. Adjustments have been made for the varying lengths of first and second level programs. Ratios may exceed 100 because some countries have many students from outside the normal age range.⁷ Enrollment totals and ratios exclude Democratic People's Republic of Korea. Data do not include adult education or special education provided outside regular schools.⁸ Classification or data coverage of levels have been revised. Data by level may not be comparable over time.⁹ Includes only universities and equivalent degree-granting institutions.¹⁰ Data refer only to institutions under the authority of the Ministry of Education.¹¹ Data for 1995–96.¹² Data for 1994–95.¹³ Data for 1994.¹⁴ Data exclude Ecole Nationale d'Administration et de Magistrature (ENAM).¹⁵ Data for 1991–92.¹⁶ Includes only institutions under the authority of the Ministry of Higher Education and Scientific Research.¹⁷ Data for 1985.¹⁸ Data for 1985–86.¹⁹ Excludes all private institutions.²⁰ Data refer to universities and exclude Al Azhar.²¹ Data for 1995.²² Data for 1979–80.²³ Data refer to public education only.²⁴ Data for 1989–90.²⁵ Estimated.²⁶ Data for 1979.

Table 400.—Selected statistics for countries¹ with populations over 10 million, by continent: 1980, 1990, and 1996—Continued

Second level ³						Third level ⁴						Age for compulsory attendance ⁵	
Enrollment in thousands			Enrollment ratio ⁶			Enrollment in thousands			Enrollment ratio ⁶				
1980	1990	1996	1980	1990	1996	1980	1990	1996	1980	1990	1996		
12	13	14	15	16	17	18	19	20	21	22	23	24	
264,521	315,555	381,890	46.4	51.8	58.9	51,087	68,647	84,261	12.3	13.8	16.7	—	
1,028	2,176	2,618	33	61	63	9,1079	286	11,347	5.9	11.4	11,120	6–15	
191	186	—	21	12	—	2	7	—	0.4	0.8	—	7–15	
234	500	—	18	28	13,27	14,12	33	—	1.6	3.3	—	6–12	
222	—	12,475	19	22	24	20	15,1630	12,1652	2.8	17,2,6	13,4,5	7–13	
862	15,097	12,1,514	24	18,23	15,26	28	80	12,93	1.2	2.4	13,2,3	—	
2,929	5,507	6,727	50	76	75	716	19,20628	—	16.1	15.9	21,20,3	6–14	
18,666	866	11,819	9	14	22,11	14	34	11,35	0.4	0.8	21,0,7	7–13	
693	24,830	—	41	37	—	9,8	9,10	—	1.6	1.4	—	6–14	
428	18,458	—	20	24	21,24	13	9,35	—	0.9	1.6	—	6–14	
22,23,234	—	26,26	17	21,13	23	36	27	—	26,2,7	3.1	21,2,1	6–13	
27,797	1,194	27,1,366	26	35	39	112	256	12,295	5.9	10.6	13,11,1	7–16	
29,108	160	21,185	5	8	21,7	1	30,5	7	0.1	0.3	21,0,4	7–14	
22,1,865	2,908	13,4,451	26,16	23	13,30	150	24,336	—	26,2,2	31,3,3	—	6–12	
—	32,2,939	13,3,571	33,55	68	84	—	34,439	13,618	—	12.8	13,15,9	7–16	
384	732	406	16	23	20	29	18,37	—	1.7	3.0	—	6–13	
35,87	35,268	21,35,292	35,5	35,13	21,12	6	18	11,30	35,0,5	35,1,2	21,35,1,7	—	
79	167	212	3	5	5	—	24,5	11,13	—	17,0,3	21,0,5	7–14	
75	661	751	8	49	48	8	49	37,47	1.3	5.2	6.5	7–15	
137	182	21,513	10	9	21,22	38,22	24	—	—	1.8	—	7–13	
2,659	3,593	—	18	21	—	240	9,52	—	2.8	4.4	—	5–10	
56,778	53,063	69,156	46	—	71	1,663	3,822	5,827	1.7	2.9	5.7	7–15	
32,748	18,44,485	68,872	30	44	49	3,545	4,951	6,060	5.2	6.0	6.9	6–14	
5,722	10,965	12,12,224	29	44	13,48	543	1,591	11,2,303	3.6	9.2	13,11,1	7–15	
2,718	5,085	8,777	42	54	74	18,37184	37,312	37,579	—	9.6	17.1	6–11	
1,033	18,1,191	11,1,160	57	47	21,42	107	39,210	8,7	—	21,11,2	6–12	—	
9,558	11,026	12,9,879	93	97	13,99	2,412	15,2,899	12,3,918	30,5	29,6	13,40,3	6–15	
1,996	2,144	1,921	93	98	85	525	537	11,40,419	34,1	40,1	21,32,7	6–17	
—	—	—	—	—	—	—	—	—	—	—	—	5–15	
4,286	4,560	4,662	78	90	102	648	1,691	2,542	14,7	38,6	60,3	6–15	
1,084	1,456	23,1,742	48	58	62	58	121	12,191	4,1	7,2	13,10,6	—	
1,066	1,281	12,1,753	22	23	21,32	163	15,196	12,41,245	4,7	4,1	13,5,4	5–10	
512	709	—	22	33	—	42,34	94	—	2.7	5,2	—	6–11	
2,166	4,345	—	14	23	—	18,268	24,337	—	—	2.9	—	—	
2,929	4,034	4,888	64	73	79	1,276	1,709	11,2,022	24,4	27,4	21,29,7	6–12	
349	893	1,543	29	44	61	62	154	274	7,1	11,6	16,3	—	
1,267	2,082	21,2,314	55	74	21,75	44,43	32,40,55	21,40,64	2,7	4,6	21,5,1	5–15	
44,604	44,914	44,958	46	52	42	140	222	12,216	16,9	18,2	13,15,7	6–12	
1,920	2,230	3,926	29	30	57	29,911	24,952	11,1,220	14,7	45,15,7	21,20,1	7–15	
2,218	3,808	12,4,726	35	47	13,56	246	750	12,1,174	5,4	13,1	13,18,2	6–14	
2,879	3,195	12,3,319	105	99	13,93	516	603	—	28,5	30,4	—	—	
—	—	—	42	32	13,41	115	130	11,298	2,1	1,9	21,4,1	6–11	
73	46,421	354	—	—	34	—	15,53	66	—	32,4,3	4,2	6–15	
760	968	1,065	98	93	93	340	335	329	38,9	47,6	44,0	6–15	
836	769	12,1,062	91	103	13,146	196	276	12,353	26,0	40,2	13,54,4	6–18	
1,256	1,268	11,1,191	114	91	21,99	44,118	44,118	11,192	17,5	16,0	21,21,9	6–15	
5,014	5,522	11,5,981	85	99	21,111	1,077	1,699	11,2,092	25,3	39,6	21,51,0	6–16	
48,8,457	7,398	11,8,261	—	98	21,102	49,1,624	49,2,049	11,49,2,144	27,2	33,9	21,44,4	6–18	
740	851	11,835	81	93	21,96	121	283	11,329	17,1	24,8	21,42,5	6–15	
357	514	11,1,112	70	79	21,99	101	102	11,195	14,1	14,0	21,23,8	6–16	
5,308	5,118	11,4,708	72	79	21,88	1,118	1,452	11,1,775	27,0	30,8	21,41,4	6–14	
50,1,391	1,402	11,1,480	93	120	21,137	360	479	11,492	29,3	39,8	21,48,6	5–18	
1,674	1,888	11,2,539	77	81	21,98	589	545	11,720	18,1	21,7	21,24,7	7–15	
1,148	2,838	2,212	94	92	78	193	193	412	12,1	9,7	22,5	7–14	
12,991	13,956	—	96	93	—	5,700	5,100	12,4,458	46,1	52,1	13,42,9	6–15	
3,977	4,755	11,4,117	87	105	21,121	698	1,222	11,1,592	23,2	36,7	21,48,6	6–16	
3,406	3,408	—	94	93	—	1,684	1,652	11,1,541	41,6	46,6	—	6–15	
5,342	4,336	11,6,697	83	85	21,133	827	1,258	11,1,821	19,1	30,2	21,49,5	5–16	
—	788	815	—	63	64	—	15,49,133	49,172	—	18,2	22,5	7–15	
2,323	2,292	11,2,505	88	101	21,106	52,1,173	1,917	11,1,763	57,1	94,7	21,90,2	6–16	
1,146	1,002	53,713	81	89	77	152	242	112	17,3	20,9	6–16	—	
172	32,295	376	18	32,23	51	—	21,80	8,1	17,8,1	21,8,1	7–14	—	
4,742	6,704	11,7,589	49	53	21,61	930	1,311	11,1,533	14,3	14,5	21,15,3	6–14	
21,585	19,270	11,21,474	91	93	21,97	12,097	13,710	11,14,262	55,5	75,2	21,81,0	6–16	
1,327	2,160	2,594	56	68	77	491	32,1,008	13,1,070	21,8	15,38,1	41,8	6–14	
2,819	3,499	13,4,510	33	38	—	1,409	49,1,540	13,1,716	11,1	11,2	13,11,3	7–14	
538	32,699	739	53	73	75	145	32,262	367	12,3	30,3	—	6–13	
1,733	32,2,378	3,318	41	32,56	72	272	32,511	644	9,1	32,15,5	18,6	6–12	
592	18,730	—	53	55	—	270	207	—	34,9	20,0	—	5–15	
1,203	1,698	21,1,863	59	67	21,70	306	682	13,756	17,3	30,6	13,31,1	6–12	
222	281	378	21	35	40	307	550	—	20,6	29,0	—	6–15	
1,100	1,278	2,280	71	82	153	55,324	55,485	1,002	25,4	35,5	75,6	6–15	

²⁷ Does not include professional schools.²⁸ Includes initiation classes where students learn Portuguese.²⁹ Data for 1981–82.³⁰ Data for 1992–93.³¹ Data for 1984.³² Data for 1991.³³ Data for 1986–87.³⁴ Not including the former Independent States of Transkei, Bophuthatswana, Venda, and Ciskei.³⁵ Data refer to government aided and maintained schools only.³⁶ Data refer to Tanzania mainland only.³⁷ Excludes private universities.³⁸ Data for 1986.³⁹ Data for 1988–89.⁴⁰ Does not include parts of some non-university institutions.⁴¹ Does not include medical science.⁴² Refers to public universities only.⁴³ Includes preprimary education.⁴⁴ Includes full-time students only.⁴⁵ Data for 1989.⁴⁶ Former Yemen Arab Republic only.⁴⁷ Data include both former East and West Germany.⁴⁸ Excludes technical education, consisting of both on the job training and school education.⁴⁹ Not including students at ISCED level 7 for which registration is not required.⁵⁰ Including apprenticeships and care training.⁵¹ From 1992–93, data include pupils enrolled in infant classes in primary schools, previously considered as preprimary education, as well as pupils below school age, and independent and special preprimary schools.⁵² Not including part-time students at community colleges.⁵³ Includes special education.⁵⁴ Includes Norfolk Island.⁵⁵ Excludes trade and vocational programs.⁵⁶ Data not available.

NOTE.—Some data have been revised from previously published figures. Because of rounding, details may not add up to totals.

SOURCE: United Nations Educational, Scientific, and Cultural Organization (UNESCO), Paris, *Statistical Yearbook*, 1998. (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	—	—	420.4	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 403.—Average 8th-grade mathematics 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 mathematics scores							
	Mathe-matics overall	Fractions and number sense	Geometry	Algebra	Data rep-resentation, analysis and probability	Measurement	Proportion-ality	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	16
International average percent correct	55 (0.1)	58 (0.1)	56 (0.1)	52 (0.2)	62 (0.1)	51 (0.1)	45 (0.2)	— —	— —	— —	— —	— —	— —	— —	— —
Australia ¹	58 (0.9)	61 (0.9)	57 (1.0)	55 (1.0)	67 (0.8)	54 (1.0)	47 (0.9)	15 (0.9)	486 (5.7)	46 (1.0)	541 (4.4)	22 (0.6)	543 (5.2)	17 (0.7)	532 (4.8)
Austria ¹	62 (0.8)	66 (0.8)	57 (1.0)	59 (0.8)	68 (0.8)	62 (1.0)	49 (0.9)	9 (0.8)	524 (6.7)	46 (1.3)	551 (4.1)	21 (0.9)	544 (4.5)	24 (1.2)	528 (5.3)
Belgium (Flemish)	66 (1.4)	71 (1.2)	64 (1.5)	63 (1.7)	73 (1.3)	60 (1.3)	53 (1.8)	2 (0.4)	— —	25 (1.3)	552 (8.9)	28 (1.1)	592 (5.9)	45 (1.6)	560 (4.6)
Belgium (French) ¹	59 (0.9)	62 (1.0)	58 (1.0)	53 (1.1)	68 (1.0)	56 (1.0)	48 (0.9)	7 (0.8)	466 (7.4)	32 (1.0)	543 (4.6)	21 (1.3)	544 (5.5)	40 (1.5)	519 (4.5)
Bulgaria ¹	60 (1.2)	60 (1.4)	65 (1.3)	62 (1.5)	62 (1.1)	54 (1.6)	47 (1.5)	— —	— —	— —	— —	— —	— —	— —	— —
Canada	59 (0.5)	64 (0.6)	58 (0.6)	54 (0.7)	69 (0.5)	51 (0.7)	48 (0.7)	14 (1.2)	514 (5.6)	47 (1.1)	538 (2.8)	18 (0.7)	534 (3.7)	21 (1.1)	511 (3.6)
Colombia ¹	29 (0.8)	31 (0.9)	29 (0.9)	28 (0.9)	37 (1.0)	25 (1.5)	23 (0.9)	2 (0.4)	— —	17 (1.1)	394 (5.2)	20 (1.2)	389 (3.6)	61 (1.9)	390 (3.5)
Cyprus	48 (0.5)	50 (0.6)	47 (0.6)	48 (0.7)	53 (0.6)	44 (0.9)	40 (0.7)	9 (0.5)	442 (5.8)	19 (0.7)	475 (3.9)	26 (0.8)	491 (4.0)	46 (0.9)	475 (2.9)
Czech Republic	66 (1.1)	69 (1.1)	66 (1.1)	65 (1.3)	68 (0.9)	62 (1.2)	52 (1.3)	13 (1.1)	551 (7.1)	57 (1.1)	571 (5.1)	17 (0.9)	568 (8.2)	13 (0.8)	542 (7.6)
Denmark ¹	52 (0.7)	53 (0.9)	54 (0.9)	45 (0.7)	67 (0.9)	49 (1.0)	41 (0.8)	39 (1.6)	517 (4.4)	39 (1.4)	508 (3.8)	13 (0.8)	479 (4.1)	9 (0.7)	468 (6.9)
England ¹	53 (0.7)	54 (0.8)	54 (1.0)	49 (0.9)	66 (0.7)	50 (0.9)	41 (1.1)	— —	— —	— —	— —	— —	— —	— —	— —
France	61 (0.8)	64 (0.8)	66 (0.8)	54 (1.0)	71 (0.8)	57 (0.9)	49 (0.9)	8 (0.7)	505 (8.0)	33 (1.2)	545 (3.6)	28 (1.0)	547 (4.5)	31 (1.2)	537 (3.7)
Germany ¹	54 (1.1)	58 (1.1)	51 (1.4)	48 (1.3)	64 (1.2)	51 (1.1)	42 (1.3)	14 (1.1)	476 (6.7)	51 (1.2)	521 (4.3)	18 (1.0)	524 (7.0)	17 (0.9)	498 (5.0)
Greece ¹	49 (0.7)	53 (0.8)	51 (0.7)	46 (0.8)	56 (0.8)	43 (0.9)	39 (1.1)	6 (0.6)	450 (7.4)	14 (0.7)	483 (5.2)	21 (0.7)	485 (3.9)	59 (1.2)	491 (3.3)
Hong Kong	70 (1.4)	72 (1.4)	73 (1.5)	70 (1.5)	72 (1.3)	65 (1.7)	62 (1.4)	13 (1.0)	539 (9.3)	32 (0.9)	586 (6.6)	25 (0.9)	607 (6.1)	30 (1.1)	604 (7.2)
Hungary	62 (0.7)	65 (0.8)	60 (0.8)	63 (0.9)	66 (0.7)	56 (0.8)	47 (0.9)	4 (0.4)	483 (11.3)	33 (1.1)	536 (5.0)	22 (0.9)	541 (5.2)	41 (1.3)	545 (3.7)
Iceland	50 (1.1)	54 (1.2)	51 (1.4)	40 (1.3)	63 (1.1)	45 (1.4)	38 (1.4)	5 (1.0)	450 (12.0)	46 (1.7)	501 (5.1)	25 (1.3)	489 (5.4)	23 (1.4)	477 (7.3)
Iran, Islamic Republic	38 (0.6)	39 (0.6)	43 (0.8)	37 (0.8)	41 (0.6)	29 (1.2)	36 (0.8)	1 (0.2)	— —	5 (0.5)	428 (5.6)	12 (1.0)	436 (4.8)	82 (1.3)	431 (2.4)
Ireland	59 (1.2)	65 (1.2)	51 (1.3)	53 (1.3)	69 (1.1)	53 (1.3)	51 (1.2)	5 (0.6)	465 (8.8)	29 (1.0)	517 (5.3)	40 (1.1)	547 (5.5)	26 (1.2)	533 (5.7)
Israel ¹	57 (1.3)	60 (1.4)	57 (1.4)	61 (1.6)	63 (1.3)	48 (1.6)	43 (1.6)	5 (0.6)	539 (10.9)	36 (2.2)	546 (6.3)	26 (1.5)	521 (6.8)	33 (2.1)	502 (6.3)
Japan	73 (0.4)	75 (0.4)	80 (0.4)	72 (0.6)	78 (0.4)	67 (0.5)	61 (0.5)	13 (0.8)	578 (5.3)	39 (0.8)	607 (2.6)	20 (0.6)	609 (4.0)	28 (1.0)	612 (2.7)
Korea	72 (0.5)	74 (0.5)	75 (0.6)	69 (0.6)	78 (0.6)	66 (0.7)	62 (0.6)	15 (0.9)	582 (4.9)	32 (1.1)	604 (3.5)	25 (0.8)	607 (4.0)	29 (1.2)	628 (4.3)
Kuwait ¹	30 (0.7)	27 (0.8)	38 (1.0)	30 (1.0)	38 (1.0)	23 (1.0)	21 (0.7)	3 (0.6)	358 (10.3)	13 (1.5)	401 (5.5)	19 (1.3)	397 (5.1)	65 (1.8)	392 (2.0)
Latvia (Latvian-speaking schools) ¹	51 (0.8)	53 (0.9)	57 (0.8)	51 (0.9)	56 (0.8)	47 (0.9)	39 (0.9)	4 (0.5)	467 (9.4)	35 (1.1)	507 (4.4)	32 (1.2)	497 (4.9)	29 (1.2)	487 (3.4)
Lithuania ¹	48 (0.9)	51 (1.0)	53 (1.1)	47 (1.2)	52 (1.0)	43 (0.9)	35 (0.9)	5 (0.6)	453 (9.4)	39 (1.4)	487 (3.9)	28 (1.0)	481 (4.6)	28 (1.4)	474 (5.4)
Netherlands ¹	60 (1.6)	62 (1.6)	59 (1.8)	53 (1.6)	72 (1.7)	57 (1.6)	51 (1.9)	3 (0.9)	492 (16.2)	54 (1.7)	539 (9.0)	27 (1.7)	562 (7.0)	16 (0.8)	524 (6.0)
New Zealand	54 (1.0)	57 (1.1)	54 (1.1)	49 (1.1)	66 (1.0)	48 (1.2)	42 (1.0)	12 (0.9)	472 (5.6)	51 (1.2)	519 (4.7)	21 (1.0)	518 (6.1)	17 (0.9)	495 (5.6)
Norway	54 (0.5)	58 (0.6)	51 (0.6)	45 (0.7)	66 (0.6)	51 (0.6)	40 (0.6)	6 (0.5)	481 (6.8)	50 (1.2)	514 (2.9)	24 (0.9)	510 (3.6)	21 (0.9)	483 (3.6)
Portugal	43 (0.7)	44 (0.7)	44 (0.8)	40 (0.8)	54 (0.7)	39 (0.7)	32 (0.8)	3 (0.3)	458 (8.1)	41 (1.1)	463 (3.1)	18 (0.7)	455 (3.3)	38 (1.2)	448 (3.0)
Romania ¹	49 (1.0)	48 (1.0)	52 (0.9)	52 (1.3)	49 (1.0)	48 (1.1)	42 (1.2)	9 (0.7)	459 (10.4)	16 (1.0)	464 (7.0)	15 (0.7)	481 (5.4)	60 (1.6)	494 (4.2)
Russian Federation	60 (1.3)	62 (1.2)	63 (1.4)	63 (1.5)	60 (1.2)	56 (1.5)	48 (1.5)	4 (0.5)	493 (10.3)	33 (1.1)	538 (5.3)	25 (1.0)	538 (5.2)	38 (1.4)	544 (6.9)
Scotland ¹	52 (1.3)	53 (1.3)	52 (1.4)	46 (1.5)	65 (1.3)	48 (1.6)	40 (1.4)	17 (1.4)	461 (4.8)	54 (1.2)	506 (5.7)	17 (1.0)	517 (8.6)	12 (0.8)	503 (7.4)
Singapore	79 (0.9)	84 (0.8)	76 (1.0)	76 (1.1)	79 (0.8)	77 (1.0)	75 (1.0)	2 (0.3)	— —	7 (0.4)	642 (8.0)	13 (0.6)	652 (6.6)	78 (0.9)	643 (4.9)
Slovak Republic	62 (0.8)	66 (0.8)	63 (0.8)	62 (0.9)	62 (0.7)	60 (0.9)	49 (1.0)	6 (0.5)	549 (8.3)	46 (0.9)	556 (3.9)	25 (0.7)	548 (4.4)	23 (1.0)	532 (4.1)
Slovenia ¹	61 (0.7)	63 (0.7)	60 (0.9)	61 (0.8)	66 (0.7)	59 (0.9)	49 (0.8)	5 (0.5)	551 (9.8)	36 (1.0)	561 (4.1)	21 (0.8)	537 (4.8)	37 (1.1)	523 (3.4)
South Africa ¹	24 (1.1)	26 (1.4)	24 (1.0)	23 (1.1)	26 (1.2)	18 (1.1)	21 (0.9)	— —	— —	— —	— —	— —	— —	— —	— —
Spain	51 (0.5)	52 (0.5)	49 (0.6)	54 (0.8)	60 (0.7)	44 (0.7)	40 (0.8)	3 (0.4)	443 (5.5)	26 (1.0)	490 (3.1)	18 (0.9)	495 (3.3)	53 (1.3)	487 (2.4)
Sweden	56 (0.7)	62 (0.8)	48 (0.7)	44 (0.9)	70 (0.7)	56 (0.9)	44 (0.9)	7 (0.6)	496 (6.9)	55 (1.2)	528 (3.1)	17 (0.8)	525 (4.3)	21 (0.9)	503 (4.2)
Switzerland ¹	62 (0.6)	67 (0.7)	60 (0.8)	53 (0.7)	72 (0.7)	61 (0.8)	52 (0.7)	4 (0.3)	523 (7.9)	44 (1.2)	556 (3.4)	19 (0.8)	548 (5.1)	33 (1.1)	536 (4.0)
Thailand ¹	57 (1.4)	60 (1.5)	62 (1.3)	53 (1.7)	63 (1.1)	50 (1.4)	51 (1.5)	3 (0.3)	495 (11.9)	26 (1.0)	514 (5.4)	18 (0.7)	515 (5.7)	54 (1.5)	531 (6.6)
United States	53 (1.1)	59 (1.1)	48 (1.2)	51 (1.2)	65 (1.1)	40 (1.1)	42 (1.1)	17 (1.1)	471 (7.2)	42 (0.9)	514 (4.2)	17 (0.7)	507 (5.5)	24 (0.8)	498 (5.9)

¹Countries 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, *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 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	4 4	2 36	4 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)

¹Countries not meeting all International Association for the Evaluation of Educational Achievement's sampling specifications.²Teacher response data available for 70 to 84 percent of students.³Teacher 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)

¹Countries 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	23	265	213	23	218	212	—	—	—	—	—	—	—	—
Belgium (Flemish)	211	262	219	26	213	27	—	—	—	—	—	—	—	—
Belgium (French) ¹	311	353	324	38	38	34	—	—	—	—	—	—	—	—
Bulgaria ¹	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Canada	317	228	226	223	233	324	211 (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	233	248	255	210	243	213	26 (2.3)	416 (4.5)	75 (4.2)	415 (5.6)	13 (3.2)	404 (5.5)	6 (2.4)	403 (18.6)
Cyprus	33	374	335	33	317	36	4	—	—	—	—	—	—	—
Czech Republic	11	70	246	15	14	4	—	—	—	—	—	—	—	—
Denmark ¹	32	322	325	33	346	313	—	—	—	—	—	—	—	—
England ¹	—	—	—	—	—	—	—	—	—	—	—	—	—	—
France	16	57	34	16	27	12	—	—	—	—	—	—	—	—
Germany ¹	330	369	328	37	319	35	—	—	—	—	—	—	—	—
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	31	235	230	29	216	26	—	—	—	—	—	—	—	—
Iran, Islamic Republic	25	57	36	2	25	11	—	—	—	—	—	—	—	—
Ireland	37	362	325	36	320	36	34 (1.9)	578 (16.5)	94 (2.1)	540 (6.2)	2 (0.8)	—	0 (0.0)	—
Israel ¹	317	241	230	215	232	218	319 (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	29	246	245	20	236	22	23 (2.6)	409 (1.9)	97 (2.6)	426 (4.4)	1 (0.5)	—	0 (0.0)	—
Latvia (Latvian-speaking schools) ¹	325	384	359	332	324	38	—	—	—	—	—	—	—	—
Lithuania ¹	216	260	257	222	226	28	—	—	—	—	—	—	—	—
Netherlands ¹	25	263	236	223	225	218	—	—	—	—	—	—	—	—
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	324	362	323	31	323	34	327 (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	22	—	—	—	—	—	—	—	—
Russian Federation	9	68	43	21	13	7	—	—	—	—	—	—	—	—
Scotland ¹	37	322	327	311	356	319	314 (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	248	264	245	215	23	21	—	—	—	—	—	—	—	—
Slovenia ¹	27	265	257	219	234	213	—	—	—	—	—	—	—	—
South Africa ¹	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Spain	214	265	246	214	218	27	25 (2.6)	532 (2.5)	84 (3.9)	518 (2.1)	11 (3.0)	502 (9.4)	1 (0.7)	—
Switzerland ¹	33	356	321	36	330	8	341 (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	216	238	233	210	232	211	—	—	—	—	—	—	—	—
United States	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

³Teacher 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	12	
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	³ 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	21 (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)	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 0.4 (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 0.2 (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							Average hours ²	
	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				
								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						
	Science overall	Males	Females	Less than 1 hour		One to two hours		Three or more hours		Average hours ¹
				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)

¹Average 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.

²Countries 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	7.5	—	8.6	—	4.6	4.5	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.

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

²Data for 1989 are for the former West Germany.

—Data not available.

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	—	—	—	—	—	—	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 417.—Percent of graduate degrees awarded in science: Selected countries, 1985, 1990, 1991, and 1996

Country	All science degrees					Natural sciences				Mathematics and computer science				Engineering			
	1985	1990	1991	1996	1985	1990	1991	1996	1985	1990	1991	1996	1985	1990	1991	1996	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Australia	—	—	13.9	14.0	—	—	9.6	5.4	—	—	3.8	—	—	4.3	4.7		
Austria	43.3	37.7	37.4	38.8	14.2	12.3	13.4	17.5	7.3	4.6	6.1	4.7	21.7	20.8	17.9	16.6	
Canada	19.7	20.0	19.7	22.3	7.5	7.8	7.7	7.7	2.8	3.4	3.4	3.5	9.4	8.8	8.7	11.2	
Denmark	16.0	22.2	22.9	12.3	4.1	5.8	5.4	3.1	2.7	4.8	4.5	1.5	9.2	11.6	13.0	7.8	
Finland	47.6	30.6	29.2	28.3	24.0	14.7	12.4	11.6	6.3	5.4	4.6	4.0	17.2	10.5	12.2	12.7	
Germany ¹	27.7	33.2	33.9	38.6	18.7	23.5	23.3	25.5	1.8	2.3	2.2	3.5	7.2	7.4	8.4	9.5	
Ireland	31.4	34.5	28.4	23.1	18.9	19.5	15.7	10.9	2.6	5.8	4.1	3.0	9.9	9.3	8.6	9.2	
Japan	50.1	54.6	54.2	—	9.5	9.5	9.5	10.2	—	—	—	—	40.5	45.1	44.7	44.4	
Netherlands	28.9	29.9	18.6	20.6	17.7	16.7	4.4	—	1.5	1.6	3.7	7.5	9.7	11.6	10.6		
New Zealand	45.1	22.6	19.3	16.7	24.6	13.8	11.5	12.7	5.4	4.7	3.6	1.1	15.1	4.0	4.2	3.0	
Norway	40.1	33.4	33.8	38.3	17.9	8.0	7.9	8.7	3.5	2.1	2.5	1.9	18.7	23.3	23.4	27.7	
Spain	35.6	26.9	26.6	36.0	28.6	19.7	19.1	24.8	1.8	1.4	2.5	4.1	5.1	5.7	5.0	7.1	
Sweden	48.0	48.5	44.4	32.3	21.2	19.4	15.1	9.2	6.8	9.2	8.2	5.9	20.0	19.9	21.1	17.1	
Switzerland	30.7	30.2	32.6	40.1	20.3	22.0	23.1	25.8	2.8	1.7	1.8	4.1	7.6	6.5	7.6	10.1	
Turkey	35.8	24.0	21.7	—	6.6	7.6	6.4	—	2.8	3.3	2.8	—	26.3	13.2	12.4	—	
United States	13.5	14.5	13.8	13.8	4.5	4.2	3.8	4.0	2.8	3.4	3.2	3.2	6.3	6.9	6.7	6.7	

¹Data 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 418.—Public education expenditures per student, by level of student: Selected countries, 1985 to 1995

[In constant 1995 dollars]

Country	Primary					Secondary					Higher education						
	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		
Australia	\$2,914	\$3,746	\$3,842	\$2,716	\$2,870	\$2,805	\$4,091	—	\$4,229	\$4,290	\$3,997	¹ \$13,353	² \$11,614	\$5,974	\$6,774	\$6,632	
Austria	3,746	2,426	2,312	4,232	3,111	—	4,282	\$5,046	5,294	5,688	5,951	5,777	\$7,120	\$6,938	7,461	—	
Belgium	—	—	—	3,442	3,269	5,594	—	—	—	—	—	8,944	7,714	6,701	6,836	6,773	6,029
Canada	—	—	—	—	1,747	—	—	—	—	—	2,403	—	—	—	7,562	7,701	7,021
Czech Republic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5,157	—
Denmark	4,024	4,775	4,957	5,027	5,560	5,680	5,695	6,811	6,829	5,918	9,271	9,042	8,551	8,800	7,429		
Finland	—	—	4,304	4,028	4,274	—	—	5,023	4,660	4,946	—	—	—	7,773	6,293	7,109	
France	—	2,775	³ 3,058	3,229	3,212	—	4,821	³ 5,521	5,526	5,660	—	5,244	³ 5,389	4,959	5,541		
Germany ⁴	3,139	—	3,005	3,380	—	3,436	—	4,637	4,321	—	7,558	—	7,118	7,269	8,309		
Greece	—	—	1,538	1,883	1,993	—	—	1,575	1,853	1,861	—	—	—	2,687	2,886	2,535	
Hungary	—	—	—	1,595	—	—	—	—	1,517	—	—	—	—	—	4,245	—	
Iceland	—	—	—	2,658	2,878	—	—	—	3,392	8,626	—	—	—	—	4,950	—	
Ireland	1,458	1,529	1,767	2,174	2,133	2,509	2,574	2,870	3,574	3,310	5,701	5,918	5,045	5,745	4,840		
Italy	2,815	3,704	³ 4,221	4,154	4,350	3,618	4,292	³ 4,960	4,965	5,068	5,084	7,772	³ 5,985	4,328	4,144		
Japan	1,2,860	—	³ 3,830	4,185	4,312	—	—	³ 3,489	4,227	4,184	1,2,870	—	³ 2,548	3,605	3,665		
Korea	—	—	—	1,893	—	—	—	—	1,296	—	—	—	—	—	—	—	
Luxembourg	16,000	⁵ 6,859	—	—	10,688	—	—	—	—	9,959	¹ 17,780	—	—	—	—	6,641	
Mexico	—	—	—	852	—	—	—	—	1,463	—	—	—	—	—	4,512	—	
Netherlands	3,278	3,130	³ 2,879	2,966	3,062	3,844	4,542	³ 3,474	3,953	4,186	10,489	11,166	³ 8,506	7,517	8,056		
New Zealand	12,887	2,572	³ 2,214	2,623	2,623	—	2,139	³ 2,810	4,108	3,648	¹ 12,089	13,065	³ 6,780	—	5,495		
Norway	3,671	4,179	³ 5,007	—	7,639	5,014	5,319	³ 7,009	—	4,335	7,170	7,923	³ 8,810	8,412	—		
Poland	11,388	² 2,195	2,490	—	2,579	¹ 1,797	² 2,381	2,536	2,709	2,971	14,678	² 5,081	4,023	3,684	—		
Portugal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Russian Federation	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Spain	1,407	1,760	2,093	2,315	2,253	1,943	2,671	2,816	2,979	3,432	2,019	3,341	3,079	2,977	3,554		
Sweden ⁶	15,536	5,746	5,128	5,172	5,004	—	—	5,890	5,774	5,545	18,423	9,444	³ 7,770	—	11,488		
Switzerland ⁶	10,880	² 6,038	6,251	6,102	5,760	2,948	—	7,889	7,794	7,986	14,374	² 15,766	15,281	14,572	14,460		
Turkey	—	—	870	718	—	—	—	627	516	—	—	—	3,014	3,377			
United Kingdom	2,522	2,847	3,461	3,488	3,282	3,559	4,395	4,551	4,419	4,204	14,064	10,707	6,301	5,890	5,574		
United States	4,014	4,894	5,233	4,669	4,772	5,049	6,283	6,158	5,993	6,086	8,039	9,537	6,804	7,518	7,813		

¹1986 data.²1991 data.³1992 data.⁴Data for 1985 are for the former West Germany.⁵1989 data.⁶Change in definition of expenditures in 1992.

—Data not available.

NOTE.—Data adjusted to U.S. dollars using the purchasing-power-parity (PPP) index.

SOURCE: Organization for Economic Cooperation and Development, *Education at a Glance*, 1996, 1998; and unpublished data. (This table was prepared January 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.)

Table 420.—Foreign students enrolled in institutions of higher education in the United States and outlying areas, by continent, region, and selected countries of origin: 1980–81 to 1997–98

Continent, region, and country	1980–81		1985–86		1990–91		1993–94		1994–95		1995–96		1996–97		1997–98	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Total	311,880	100.0	343,780	100.0	407,530	100.0	449,704	100.0	452,635	100.0	453,787	100.0	457,984	100.0	481,280	100.0
Africa	38,180	12.2	34,190	9.9	23,800	5.8	20,569	4.6	20,724	4.6	20,844	4.6	22,078	4.8	23,162	4.8
Eastern Africa	6,260	2.0	6,730	2.0	7,590	1.9	7,093	1.6	7,139	1.6	7,596	1.7	8,628	1.9	8,951	1.9
Central Africa	1,130	0.4	1,540	0.4	1,650	0.4	1,472	0.3	1,430	0.3	1,346	0.3	1,187	0.3	1,265	0.3
North Africa	7,310	2.3	5,980	1.7	4,540	1.1	3,614	0.8	3,522	0.8	3,422	0.8	3,469	0.8	3,862	0.8
Southern Africa	1,480	0.5	2,360	0.7	2,840	0.7	2,563	0.6	2,672	0.6	2,657	0.6	2,678	0.6	2,608	0.5
West Africa	22,000	7.1	17,580	5.1	7,180	1.8	5,804	1.3	5,943	1.3	5,818	1.3	6,115	1.3	6,471	1.3
Nigeria	17,350	5.6	13,710	4.0	3,710	0.9	2,285	0.5	2,147	0.5	2,093	0.5	2,184	0.5	2,436	0.5
Europe	25,330	8.1	34,310	10.0	49,640	12.2	62,442	13.9	64,811	14.3	67,358	14.8	68,315	14.9	71,616	14.9
Eastern Europe	1,670	0.5	1,770	0.5	4,780	1.2	12,929	2.9	15,906	3.5	18,032	4.0	19,471	4.3	21,314	4.4
Western Europe	23,660	7.6	32,540	9.5	44,860	11.0	49,496	11.0	48,905	10.8	49,326	10.9	48,844	10.7	50,301	10.5
France	—	—	3,680	1.1	5,630	1.4	5,976	1.3	5,843	1.3	5,710	1.3	5,692	1.2	5,992	1.2
Germany, Federal Republic of ¹	3,310	1.1	4,730	1.4	7,000	1.7	8,508	1.9	8,592	1.9	9,017	2.0	8,990	2.0	9,309	1.9
Greece	3,750	1.2	4,440	1.3	4,360	1.1	4,144	0.9	3,699	0.8	3,365	0.7	3,010	0.7	3,065	0.6
Spain	—	—	1,740	0.5	4,300	1.1	5,246	1.2	5,126	1.1	4,809	1.1	4,673	1.0	4,371	0.9
United Kingdom	4,440	1.4	5,940	1.7	7,300	1.8	7,828	1.7	7,786	1.7	7,799	1.7	7,357	1.6	7,534	1.6
Latin America	49,810	16.0	45,480	13.2	47,580	11.7	45,246	10.1	47,239	10.4	47,253	10.4	49,592	10.8	51,368	10.7
Caribbean	10,650	3.4	11,100	3.2	12,610	3.1	10,672	2.4	11,286	2.5	10,737	2.4	11,796	2.6	10,855	2.3
Central America	12,970	4.2	12,740	3.7	15,950	3.9	13,886	3.1	14,923	3.3	14,220	3.1	14,524	3.2	15,211	3.2
Mexico	6,730	2.2	5,460	1.6	6,740	1.7	8,021	1.8	9,003	2.0	8,687	1.9	8,975	2.0	9,559	2.0
South America	26,190	8.4	21,640	6.3	19,020	4.7	20,708	4.6	21,030	4.6	22,296	4.9	23,272	5.1	25,302	5.3
Brazil	—	—	2,840	0.8	3,900	1.0	4,977	1.1	5,017	1.1	5,497	1.2	6,168	1.3	6,982	1.5
Colombia	—	—	4,010	1.2	3,180	0.8	3,077	0.7	3,208	0.7	3,462	0.8	3,636	0.8	4,345	0.9
Venezuela	11,750	3.8	7,040	2.0	2,890	0.7	3,742	0.8	4,092	0.9	4,456	1.0	4,590	1.0	4,731	1.0
Middle East	84,710	27.2	52,720	15.3	33,420	8.2	29,509	6.6	30,246	6.7	30,563	6.7	29,841	6.5	30,962	6.4
Iran	47,550	15.2	14,210	4.1	6,260	1.5	3,621	0.8	2,896	0.6	2,628	0.6	2,129	0.5	1,863	0.4
Jordan	6,140	2.0	6,590	1.9	4,320	1.1	2,826	0.6	2,431	0.5	2,222	0.5	2,094	0.5	2,027	0.4
Lebanon	6,770	2.2	7,090	2.1	3,900	1.0	2,165	0.5	1,835	0.4	1,554	0.3	1,370	0.3	1,321	0.3
Saudi Arabia	10,440	3.3	6,900	2.0	3,590	0.9	3,721	0.8	4,075	0.9	4,191	0.9	4,264	0.9	4,571	0.9
Turkey	—	—	2,460	0.7	4,080	1.0	5,474	1.2	6,716	1.5	7,678	1.7	8,194	1.8	9,081	1.9
North America ²	14,790	4.7	16,030	4.7	18,950	4.6	23,288	5.2	23,394	5.2	23,644	5.2	23,611	5.2	22,613	4.7
Canada	14,320	4.6	15,410	4.5	18,350	4.5	22,655	5.0	22,747	5.0	23,005	5.1	22,984	5.0	22,051	4.6
Oceania	4,180	1.3	4,030	1.2	4,230	1.0	3,857	0.9	4,327	1.0	4,202	0.9	3,690	0.8	3,893	0.8
Asia	94,640	30.3	156,830	45.6	229,830	56.4	264,693	58.9	261,789	57.8	259,893	57.3	260,743	56.9	277,508	57.7
East Asia	51,650	16.6	80,720	23.5	146,020	35.8	171,279	38.1	168,190	37.2	166,717	36.7	167,935	36.7	178,256	37.0
China	2,770	0.9	13,980	4.1	39,600	9.7	44,381	9.9	39,403	8.7	39,613	8.7	42,503	9.3	46,958	9.8
Hong Kong	9,660	3.1	10,710	3.1	12,630	3.1	13,752	3.1	12,935	2.9	12,018	2.6	10,942	2.4	9,665	2.0
Japan	13,500	4.3	13,360	3.9	36,610	9.0	43,770	9.7	45,276	10.0	45,531	10.0	46,292	10.1	47,073	9.8
Korea, Republic of	6,150	2.0	18,660	5.4	23,360	5.7	31,076	6.9	33,599	7.4	36,231	8.0	37,130	8.1	42,890	8.9
Taiwan	19,460	6.2	23,770	6.9	33,530	8.2	37,581	8.4	36,407	8.0	32,702	7.2	30,487	6.7	30,855	6.4
South and Central Asia	14,540	4.7	25,800	7.5	42,370	10.4	48,941	10.9	47,836	10.6	45,401	10.0	44,256	9.7	47,761	9.9
India	9,250	3.0	16,070	4.7	28,860	7.1	34,796	7.7	33,537	7.4	31,743	7.0	30,641	6.7	33,818	7.0
Pakistan	2,990	1.0	5,440	1.6	7,730	1.9	7,299	1.6	6,989	1.5	6,427	1.4	6,095	1.3	5,821	1.2
South East Asia	28,450	9.1	50,310	14.6	41,440	10.2	44,461	9.9	45,763	10.1	47,774	10.5	48,550	10.6	51,491	10.7
Indonesia	3,250	1.0	8,210	2.4	9,520	2.3	11,744	2.6	11,872	2.6	12,820	2.8	12,461	2.7	13,282	2.8
Malaysia	6,010	1.9	23,020	6.7	13,610	3.3	13,718	3.1	13,617	3.0	14,015	3.1	14,527	3.2	14,597	3.0
Philippines	—	—	3,920	1.1	4,270	1.0	3,528	0.8	3,472	0.8	3,127	0.7	2,796	0.6	2,801	0.6
Singapore	—	—	3,930	1.1	4,500	1.1	4,823	1.1	4,473	1.0	4,098	0.9	3,727	0.8	3,843	0.8
Thailand	6,550	2.1	6,940	2.0	7,090	1.7	9,537	2.1	10,889	2.4	12,165	2.7	13,481	2.9	15,090	3.1
Stateless ³	240	0.1	190	0.1	80	(⁴)	100	(⁴)	105	(⁴)	30	(⁴)	109	(⁴)	159	(⁴)

¹ 1990–91 and later years data are for Germany, which includes the former Federal Republic of Germany and the former Democratic Republic of Germany.

² Excludes Mexico and Central America, which are included with Latin America.

³ Home country unknown or undeclared.

⁴ Less than .05 percent.

—Data not available.

NOTE.—Totals and subtotals include other countries not shown separately. Data are for "nonimmigrants," i.e., students who have not migrated to this country. Because of rounding, details may not add to totals.

SOURCE: Institute of International Education, "Open Doors," various years. (Latest edition copyright © 1998 by the Institute of International Education. All rights reserved.) (This table was prepared August 1999.)