

The Condition of Education 2009

Indicator 29 *International Teacher Comparisons*

The indicator and corresponding tables are taken directly from *The Condition of Education 2009*. Therefore, the page numbers may not be sequential.

Additional information about the survey data and supplementary notes can be found in the full report. For a copy of *The Condition of Education 2009*, visit the NCES website (<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2009081>) or contact ED PUBS at 1-877-4ED-PUBS.

Suggested Citation:

Planty, M., Hussar, W., Snyder, T., Kena, G., KewalRamani, A., Kemp, J., Bianco, K., Dinkes, R. (2009). *The Condition of Education 2009* (NCES 2009-081). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.

International Teacher Comparisons

In 2007, about 80 percent of U.S. eighth-graders had mathematics and science teachers who reported participating in professional development in their subject content area over the previous 2 years.

The 2007 Trends in International Mathematics and Science Study (TIMSS 2007) asked mathematics and science teachers of fourth- and eighth-graders to report on their participation in several areas of professional development in the 2 years before the assessment. This indicator discusses the results in terms of recent professional development in four areas: content, pedagogy/instruction, improving students' critical-thinking or problem-solving skills, and assessment. The countries described are those G-8 countries that participated in TIMSS 2007: England, Germany, Italy, Japan, the Russian Federation, Scotland, and the United States.

In 2007, the percentage of U.S. fourth-graders whose mathematics teachers reported participating in professional development in mathematical content in the previous 2 years was 60 percent; in other countries, this percentage ranged from 22 percent in Italy to 66 percent in the Russian Federation (see table A-29-1). The percentage of U.S. eighth-graders with such mathematics teachers was 81 percent, while the percentages in other countries ranged from 16 percent in Italy to 84 percent in the Russian Federation. The percentage of fourth-graders whose mathematics teachers reported participating in professional development in pedagogy/instruction ranged from 25 percent in Italy to 70 percent in England, with the United States at 50 percent. At eighth grade, the percentage of students ranged from 34 percent in Italy to 93 percent in Scotland, with the United States at 76 percent. The percentage of fourth-graders whose mathematics teachers reported participating in professional development in improving students' critical-thinking or problem-solving skills ranged from 22 percent in Italy to 59 percent in England, with the United States at 51 percent. At eighth grade, the percentage of students ranged from 9 percent in Italy to 65 percent in the United States. The percentage of fourth-graders whose mathematics teachers reported

participating in professional development in assessment ranged from 14 percent in Italy to 55 percent in the Russian Federation, with the United States at 47 percent. At eighth grade, the percentage of students ranged from 17 percent in Italy to 71 percent in Scotland, with the United States at 69 percent.

In 2007, the percentage of U.S. fourth-graders whose science teachers reported participating in professional development in science content was 42 percent; in other countries, this percentage ranged from 16 percent in Italy to 58 percent in the Russian Federation (see table A-29-2). At eighth grade, the percentage of U.S. eighth-graders with such science teachers was 82 percent, while at the other end of the range, the percentage in Italy was 24 percent. The percentage of fourth-graders whose science teachers reported participating in professional development in pedagogy/instruction ranged from 10 percent in Italy to 62 percent in the Russian Federation, with the United States at 29 percent. At eighth grade, the percentage of students ranged from 28 percent in Italy to 84 percent in Scotland, with the United States at 64 percent. The percentage of fourth-graders whose science teachers reported participating in professional development in improving students' critical-thinking or problem-solving skills ranged from 11 percent in Japan to 47 percent in Scotland, with the United States at 36 percent. At eighth grade, the percentage of students ranged from 10 percent in Italy to 73 percent in the United States. The percentage of fourth-graders whose science teachers reported participating in professional development in assessment ranged from 6 percent in Italy to 52 percent in the Russian Federation, with the United States at 24 percent. At eighth grade, the percentage of students ranged from 15 percent in Italy to 65 percent in England, with the United States at 61 percent.



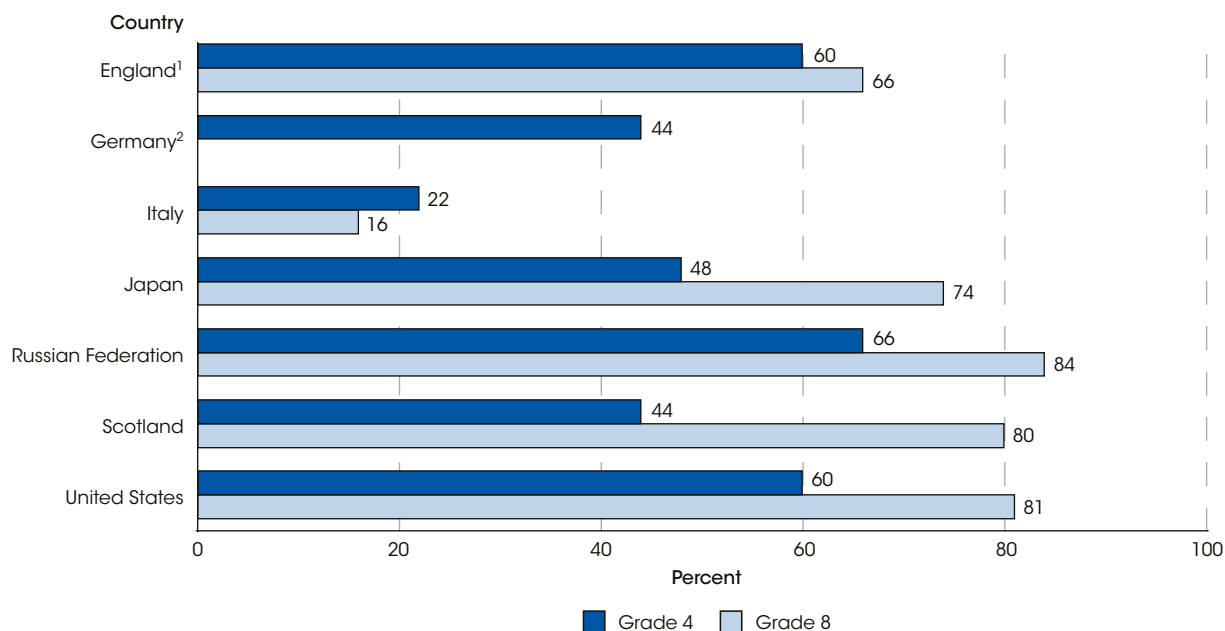
For more information: [Tables A-29-1 and A-29-2](#); [Indicators 15 and 16](#)

Technical Notes

This indicator reports on the Group of Eight (G-8) countries—Canada, France, Germany, Italy, Japan, the Russian Federation, the United Kingdom (estimates are reported separately for England and Scotland), and the United States—that are among the world's most economically developed countries and among the largest economic partners of the United States. Data for this indicator are from the 2007 Trends in International Mathematics and Science Study (TIMSS 2007) Teacher Questionnaire. For this indicator, estimates for Canada and France are not available. It should be noted that the

TIMSS 2007 teachers do not constitute representative samples of teachers. Rather, they are the teachers for nationally representative samples of fourth-grade and eighth-grade students. Thus, the teacher data presented in this indicator were analyzed at the student level. Although the teachers discussed here are identified as mathematics and science teachers, they may have been classroom teachers responsible for these subjects, particularly at the fourth-grade level. For more information on TIMSS, see [supplemental note 5](#).

Figure 29-1. Percentage of fourth-grade and eighth-grade students whose mathematics teachers reported that they participated in mathematics content professional development activities in the 2 years prior to assessment, by country: 2007



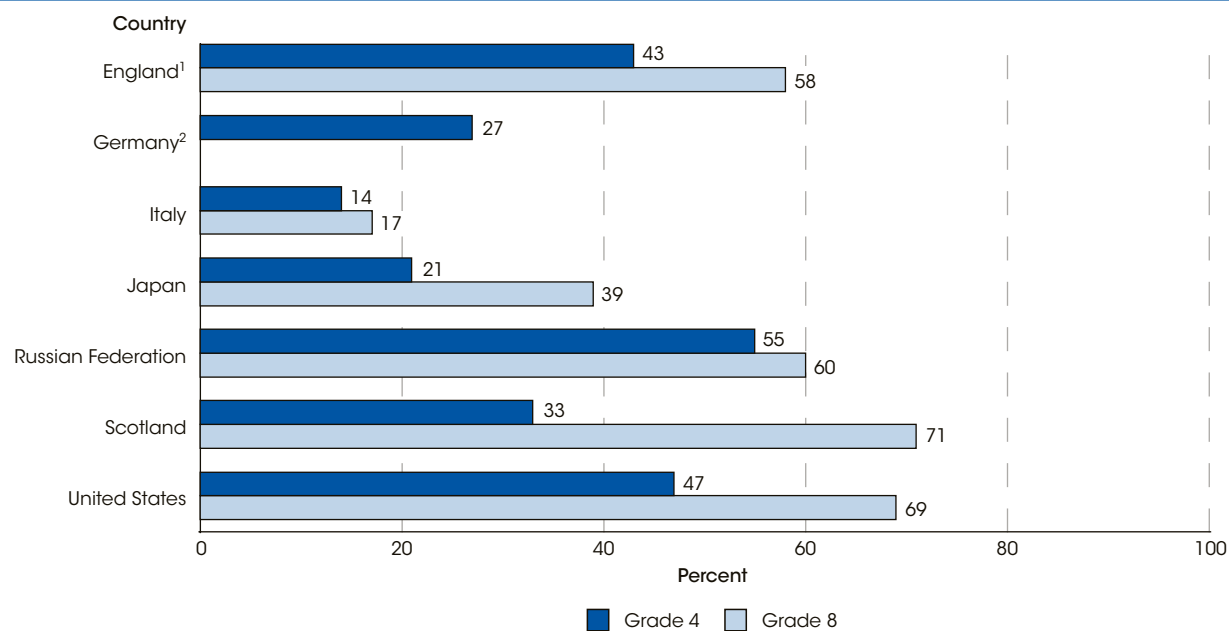
¹ Eighth grade data for England met international guidelines for participation rates in 2007 only after substitute schools were included.

² Data for Germany are only available at the fourth grade because Germany did not participate in TIMSS 2007 at the eighth grade.

NOTE: For more information on the Trends in International Mathematics and Science Study (TIMSS), see supplemental note 5.

SOURCE: Mullis, I.V.S., Martin, M.O., and Foy, P. (2008). *TIMSS 2007 International Mathematics Report: Findings From IEA's Trends in International Mathematics and Science Study at the Fourth and Eighth Grades*, exhibit 6.4. Chestnut Hill, MA: Boston College.

Figure 29-2. Percentage of fourth-grade and eighth-grade students whose mathematics teachers reported that they participated in mathematics assessment professional development activities in the 2 years prior to assessment, by country: 2007



¹ Eighth grade data for England met international guidelines for participation rates in 2007 only after substitute schools were included.

² Data for Germany are only available at the fourth grade because Germany did not participate in TIMSS 2007 at the eighth grade.

NOTE: For more information on the Trends in International Mathematics and Science Study (TIMSS), see supplemental note 5.

SOURCE: Mullis, I.V.S., Martin, M.O., and Foy, P. (2008). *TIMSS 2007 International Mathematics Report: Findings From IEA's Trends in International Mathematics and Science Study at the Fourth and Eighth Grades*, exhibit 6.4. Chestnut Hill, MA: Boston College.

Supplemental Tables to Indicator 29

International Teachers Comparison

Table A-29-1. Percentage of fourth-grade and eighth-grade students whose mathematics teachers reported that they participated in various professional development activities in the 2 years prior to assessment, by country: 2007

Country	Content	Pedagogy/ instruction	Critical thinking or problem solving	Assessment
Grade 4				
England ¹	59.6	69.8	58.6	42.6
Germany ²	44.3	36.6	28.1	27.1
Italy	22.0	25.2	22.0	13.6
Japan	47.6	54.7	27.0	21.3
Russian Federation	66.1	67.3	58.2	55.2
Scotland	43.6	62.0	56.6	33.2
United States	60.2	49.5	50.6	47.0
Grade 8				
England ¹	66.0	79.5	39.7	58.5
Germany ²	—	—	—	—
Italy	15.5	33.6	8.8	16.7
Japan	74.5	76.2	38.6	39.1
Russian Federation	83.8	73.4	61.8	60.4
Scotland	79.9	92.8	55.9	71.2
United States	80.8	76.1	65.2	69.1

— Not available.

¹ Eighth grade data for England met international guidelines for participation rates in 2007 only after substitute schools were included.

² Data for Germany are only available at the fourth grade because Germany did not participate in TIMSS 2007 at the eighth grade.

NOTE: For more information on the Trends in International Mathematics and Science Study (TIMSS), see *supplemental note 5*.

SOURCE: Mullis, I.V.S., Martin, M.O., and Foy, P. (2008). *TIMSS 2007 International Mathematics Report: Findings From IEA's Trends in International Mathematics and Science Study at the Fourth and Eighth Grades*, exhibit 6.4. Chestnut Hill, MA: Boston College.

Table A-29-2. Percentage of fourth-grade and eighth-grade students whose science teachers reported that they participated in various professional development activities in the 2 years prior to assessment, by country: 2007

Country	Content	Pedagogy/ instruction	Critical thinking or problem solving	Assessment
Grade 4				
England ¹	31.5	41.4	41.9	36.0
Germany ²	36.0	20.6	24.7	14.8
Italy	15.7	10.3	12.1	6.4
Japan	36.9	44.9	10.7	14.8
Russian Federation	58.2	61.5	40.9	51.9
Scotland	38.8	44.0	47.3	23.0
United States	41.8	29.1	35.9	24.2
Grade 8				
England ¹	65.7	75.4	49.2	65.2
Germany ²	—	—	—	—
Italy	24.3	28.2	10.4	15.3
Japan	74.1	64.3	14.5	39.7
Russian Federation	62.8	71.8	48.7	54.4
Scotland	72.8	83.7	62.7	57.3
United States	82.0	63.8	72.7	60.7

— Not available.

¹ Eighth grade data for England met international guidelines for participation rates in 2007 only after substitute schools were included.

² Data for Germany are only available at the fourth grade because Germany did not participate in TIMSS 2007 at the eighth grade.

NOTE: For more information on the Trends in International Mathematics and Science Study (TIMSS), see *supplemental note 5*.

SOURCE: Mullis, I.V.S., Martin, M.O., and Foy, P. (2008). *TIMSS 2007 International Mathematics Report: Findings From IEA's Trends in International Mathematics and Science Study at the Fourth and Eighth Grades*, exhibit 6.4. Chestnut Hill, MA: Boston College.

International Teachers Comparison

Table S-29-1. Standard errors for the percentage of fourth-grade and eighth-grade students whose mathematics teachers reported that they participated in various professional development activities in the 2 years prior to assessment, by country: 2007

Country	Content	Pedagogy/instruction	Critical thinking or problem solving	Assessment
Grade 4				
England	3.64	3.47	3.78	4.51
Germany	3.32	3.08	3.25	3.12
Italy	2.70	2.59	2.61	2.27
Japan	3.93	3.64	3.40	2.72
Russian Federation	3.47	2.96	3.59	3.15
Scotland	4.06	4.01	4.81	4.15
United States	2.19	2.61	2.46	2.36
Grade 8				
England	3.93	3.29	3.66	3.89
Germany	†	†	†	†
Italy	2.11	3.29	1.64	2.73
Japan	3.41	3.42	3.66	3.54
Russian Federation	2.43	3.02	2.99	2.79
Scotland	3.37	2.04	4.05	3.12
United States	2.10	2.43	2.80	2.51

† Not applicable.

SOURCE: Mullis, I.V.S., Martin, M.O., and Foy, P. (2008). *TIMSS 2007 International Mathematics Report: Findings From IEA's Trends in International Mathematics and Science Study at the Fourth and Eighth Grades*, exhibit 6.4. Chestnut Hill, MA: Boston College.

Table S-29-2. Standard errors for the percentage of fourth-grade and eighth-grade students whose science teachers reported that they participated in various professional development activities in the 2 years prior to assessment, by country: 2007

Country	Content	Pedagogy/instruction	Critical thinking or problem solving	Assessment
Grade 4				
England	4.05	4.23	4.30	4.05
Germany	2.85	2.59	2.46	2.23
Italy	2.14	1.95	1.92	1.44
Japan	3.78	3.96	2.40	2.91
Russian Federation	3.31	3.46	3.58	3.40
Scotland	4.08	4.35	3.95	3.20
United States	2.83	2.35	2.21	2.37
Grade 8				
England	2.64	2.39	3.11	2.58
Germany	†	†	†	†
Italy	3.03	3.20	1.82	2.32
Japan	3.31	3.77	2.88	4.34
Russian Federation	2.08	1.56	2.19	2.20
Scotland	2.22	1.98	2.50	2.26
United States	2.28	2.81	2.93	3.00

† Not applicable.

SOURCE: Mullis, I.V.S., Martin, M.O., and Foy, P. (2008). *TIMSS 2007 International Mathematics Report: Findings From IEA's Trends in International Mathematics and Science Study at the Fourth and Eighth Grades*, exhibit 6.4. Chestnut Hill, MA: Boston College.