

Exhibit 8.7: Teacher Participation in Professional Development in Science in the Past Two Years

Reported by Teachers

Teachers could indicate participating in more than one area of professional development.

Country	Percent of Students by Teachers' Area of Professional Development							
	Science Content	Science Pedagogy/ Instruction	Science Curriculum	Integrating Information Technology into Science	Improving Students' Critical Thinking or Inquiry Skills	Science Assessment	Addressing Individual Students' Needs	Integrating Science with Other Subjects
Australia	31 (2.9)	27 (3.4)	40 (3.6)	16 (2.5)	32 (3.3)	16 (2.6)	28 (3.1)	22 (3.3)
Bahrain	45 (1.7)	68 (1.5)	44 (1.7)	64 (1.6)	66 (1.6)	46 (1.8)	55 (1.7)	65 (1.9)
Belgium (Flemish)	37 (3.0)	26 (2.9)	50 (3.4)	29 (3.0)	20 (2.7)	15 (2.7)	22 (2.9)	25 (2.7)
Bulgaria	15 (3.4)	10 (2.2)	19 (3.4)	20 (4.0)	8 (2.6)	31 (3.3)	21 (3.0)	21 (3.7)
Canada	18 (1.9)	18 (2.0)	15 (1.7)	22 (2.5)	32 (2.6)	12 (1.8)	31 (2.3)	23 (2.1)
Chile	21 (3.5)	18 (3.6)	15 (3.4)	15 (3.3)	16 (3.4)	17 (3.6)	24 (3.8)	14 (3.2)
Chinese Taipei	63 (4.3)	54 (3.0)	55 (4.3)	43 (4.2)	40 (4.1)	29 (3.7)	42 (3.8)	30 (3.7)
Croatia	51 (4.1)	38 (3.3)	43 (3.5)	32 (3.8)	37 (3.1)	27 (3.5)	38 (3.7)	50 (3.7)
Cyprus	52 (3.9)	60 (3.9)	56 (4.2)	32 (3.5)	48 (3.5)	25 (3.4)	22 (4.3)	21 (2.6)
Czech Republic	19 (2.7)	14 (2.2)	3 (1.1)	28 (3.0)	17 (2.4)	4 (1.5)	29 (3.1)	14 (2.1)
Denmark	15 (2.8)	11 (2.7)	10 (2.4)	7 (1.9)	9 (2.2)	8 (1.9)	13 (2.7)	8 (2.2)
England	r 37 (4.4)	r 32 (4.0)	r 47 (4.4)	r 16 (3.1)	r 33 (4.0)	r 30 (3.8)	r 24 (3.8)	r 23 (3.3)
Finland	3 (1.3)	5 (1.7)	5 (1.6)	8 (2.1)	4 (1.5)	2 (1.2)	12 (2.0)	7 (1.8)
France	14 (2.5)	18 (2.6)	10 (2.4)	8 (2.1)	9 (2.3)	4 (1.6)	12 (2.6)	8 (2.0)
Georgia	28 (3.8)	31 (3.5)	31 (3.8)	53 (4.6)	37 (4.0)	32 (4.1)	39 (4.0)	43 (4.1)
Germany	36 (3.3)	24 (3.0)	29 (3.2)	6 (1.9)	25 (2.9)	12 (2.4)	22 (2.8)	16 (2.5)
Hong Kong SAR	42 (4.7)	43 (4.7)	36 (4.7)	45 (4.9)	63 (5.2)	25 (3.8)	46 (4.9)	31 (4.1)
Hungary	4 (1.3)	8 (2.0)	4 (1.5)	10 (2.1)	12 (2.3)	4 (1.7)	21 (3.0)	10 (2.1)
Indonesia	45 (3.2)	52 (3.3)	42 (3.2)	46 (3.5)	70 (2.9)	64 (3.4)	57 (3.7)	61 (3.5)
Iran, Islamic Rep. of	55 (3.5)	66 (3.7)	46 (3.2)	21 (3.1)	28 (3.2)	35 (3.6)	39 (3.5)	28 (3.5)
Ireland	18 (3.3)	14 (3.2)	20 (3.5)	12 (2.7)	17 (3.0)	7 (1.8)	13 (3.0)	24 (3.8)
Italy	11 (2.4)	11 (2.6)	10 (2.2)	13 (2.5)	12 (2.4)	5 (1.3)	20 (3.0)	12 (2.7)
Japan	41 (4.5)	42 (4.3)	11 (2.7)	20 (3.4)	10 (2.6)	11 (2.4)	20 (3.1)	3 (1.4)
Kazakhstan	50 (4.7)	59 (4.3)	60 (4.3)	74 (3.6)	77 (3.7)	66 (4.0)	64 (4.2)	62 (4.1)
Korea, Rep. of	46 (4.0)	46 (4.2)	54 (4.3)	30 (3.5)	39 (4.1)	30 (3.6)	36 (4.0)	39 (4.1)
Kuwait	65 (3.0)	67 (3.3)	62 (3.8)	70 (2.9)	71 (3.0)	56 (4.3)	63 (3.2)	60 (3.4)
Lithuania	13 (2.6)	15 (2.9)	15 (2.5)	48 (4.1)	46 (3.3)	27 (3.3)	41 (3.4)	42 (4.1)
Morocco	5 (1.4)	12 (2.4)	r 10 (2.1)	12 (1.8)	r 13 (2.4)	r 17 (2.7)	20 (2.7)	14 (2.4)
Netherlands	r 3 (1.8)	r 3 (1.3)	r 5 (2.3)	r 5 (1.9)	r 21 (4.2)	r 2 (1.2)	r 24 (4.0)	r 13 (3.3)
New Zealand	26 (3.1)	27 (3.2)	24 (2.6)	20 (2.5)	37 (3.0)	11 (1.8)	25 (2.4)	27 (2.7)
Northern Ireland	r 27 (4.1)	r 31 (4.2)	r 25 (4.0)	r 24 (4.3)	r 31 (4.1)	r 7 (2.5)	r 20 (3.7)	r 31 (4.1)
Norway (5)	r 11 (2.8)	r 11 (2.6)	r 6 (2.2)	r 3 (1.5)	r 6 (2.3)	r 4 (1.8)	r 11 (2.6)	r 7 (2.1)
Oman	45 (3.5)	55 (3.1)	40 (3.5)	29 (3.1)	41 (3.3)	47 (3.0)	27 (2.4)	33 (3.3)
Poland	74 (3.3)	49 (3.8)	61 (4.6)	67 (4.3)	44 (3.4)	35 (3.8)	59 (3.8)	39 (4.3)
Portugal	19 (3.3)	17 (2.8)	9 (2.3)	12 (2.1)	10 (1.9)	6 (1.8)	18 (2.7)	11 (2.3)
Qatar	61 (3.4)	61 (2.6)	61 (3.9)	58 (3.3)	68 (2.9)	58 (3.3)	66 (3.6)	59 (3.2)
Russian Federation	37 (4.1)	41 (4.3)	66 (3.1)	60 (4.3)	49 (3.5)	63 (3.8)	47 (3.2)	54 (3.5)
Saudi Arabia	52 (3.7)	66 (3.8)	56 (4.3)	45 (4.0)	61 (3.8)	48 (3.9)	50 (4.1)	44 (3.8)
Serbia	31 (3.7)	21 (3.3)	16 (2.7)	20 (3.0)	30 (4.1)	19 (3.0)	38 (4.1)	29 (3.5)
Singapore	64 (2.7)	78 (2.1)	58 (2.7)	50 (2.6)	61 (2.5)	65 (2.6)	35 (2.7)	33 (2.8)
Slovak Republic	10 (1.6)	12 (2.3)	33 (3.3)	39 (3.5)	21 (3.2)	10 (2.1)	17 (2.7)	36 (3.4)
Slovenia	24 (3.1)	15 (2.5)	29 (3.6)	28 (3.4)	24 (3.2)	26 (3.2)	25 (3.3)	22 (3.6)
Spain	16 (2.7)	20 (3.1)	18 (2.6)	34 (3.6)	23 (2.9)	15 (2.4)	40 (3.6)	27 (3.3)
Sweden	31 (4.2)	27 (4.1)	30 (4.0)	6 (2.1)	12 (2.4)	21 (3.7)	18 (3.0)	18 (3.7)
Turkey	3 (1.0)	4 (1.1)	5 (1.4)	9 (1.8)	9 (2.1)	10 (2.0)	8 (2.0)	7 (1.5)
United Arab Emirates	59 (2.1)	53 (2.3)	59 (2.0)	51 (2.3)	66 (2.0)	56 (2.3)	61 (2.6)	54 (2.4)
United States	r 42 (2.5)	r 33 (2.4)	r 43 (2.6)	r 28 (2.3)	r 40 (2.9)	r 22 (2.6)	r 37 (2.7)	r 41 (2.5)
International Avg.	32 (0.5)	32 (0.5)	32 (0.5)	30 (0.5)	33 (0.5)	25 (0.4)	32 (0.5)	29 (0.5)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "x" indicates data are available for less than 50% of students.

Exhibit 8.7: Teacher Participation in Professional Development in Science in the Past Two Years (Continued)

Country	Percent of Students by Teachers' Area of Professional Development							
	Science Content	Science Pedagogy/ Instruction	Science Curriculum	Integrating Information Technology into Science	Improving Students' Critical Thinking or Inquiry Skills	Science Assessment	Addressing Individual Students' Needs	Integrating Science with Other Subjects
Benchmarking Participants								
Buenos Aires, Argentina	x x	x x	x x	x x	x x	x x	x x	x x
Ontario, Canada	14 (2.8)	15 (2.6)	14 (2.5)	19 (3.6)	39 (4.0)	10 (2.4)	35 (4.0)	24 (3.6)
Quebec, Canada	22 (4.2)	23 (4.4)	14 (3.1)	22 (4.8)	13 (3.6)	12 (3.8)	15 (3.7)	15 (4.1)
Norway (4)	6 (2.5)	5 (2.4)	3 (1.9)	4 (2.3)	4 (2.0)	3 (1.9)	10 (2.9)	7 (2.7)
Abu Dhabi, UAE	55 (4.7)	40 (4.7)	50 (4.7)	44 (4.8)	60 (4.6)	42 (4.7)	54 (4.5)	53 (4.7)
Dubai, UAE	54 (3.7)	54 (2.9)	58 (2.9)	58 (2.9)	69 (2.7)	58 (1.7)	62 (2.9)	59 (3.1)
Florida, US	r 41 (5.4)	r 35 (5.2)	r 39 (5.3)	r 33 (6.1)	r 44 (5.8)	r 18 (3.8)	r 41 (6.0)	r 39 (6.6)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015