

Exhibit 8.8: 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
Australia	61 (2.7)	57 (3.3)	68 (2.7)	53 (2.8)	50 (2.7)	42 (2.8)	57 (2.6)
Bahrain	53 (2.5)	69 (2.5)	55 (2.6)	63 (2.3)	58 (2.8)	57 (3.3)	59 (3.1)
Botswana (9)	38 (5.1)	26 (4.2)	36 (4.7)	22 (3.8)	21 (3.8)	28 (3.9)	30 (4.5)
Canada	r 37 (3.5)	r 39 (3.2)	r 28 (3.3)	r 47 (3.9)	r 37 (2.9)	r 26 (3.4)	r 43 (3.6)
Chile	43 (5.0)	28 (3.8)	r 31 (4.1)	29 (4.1)	25 (4.3)	23 (4.0)	24 (3.5)
Chinese Taipei	70 (3.6)	67 (4.2)	62 (3.7)	51 (4.1)	38 (3.9)	48 (4.0)	37 (4.2)
Egypt	45 (3.9)	62 (4.0)	38 (3.6)	59 (3.7)	59 (3.9)	54 (3.9)	55 (4.1)
England	r 54 (2.9)	r 61 (3.0)	r 62 (2.9)	r 32 (3.1)	r 41 (3.2)	r 53 (2.9)	r 56 (2.8)
Georgia	44 (2.7)	47 (2.6)	43 (2.5)	58 (2.7)	46 (2.3)	43 (2.7)	42 (3.0)
Hong Kong SAR	69 (4.0)	70 (3.8)	63 (4.0)	53 (4.3)	48 (4.6)	40 (4.4)	49 (4.7)
Hungary	31 (2.2)	36 (2.3)	18 (2.1)	37 (2.5)	16 (2.1)	13 (1.7)	25 (2.0)
Iran, Islamic Rep. of	86 (2.4)	87 (1.9)	62 (3.0)	46 (3.3)	36 (3.0)	57 (3.3)	35 (2.8)
Ireland	42 (3.4)	38 (3.1)	28 (2.8)	36 (3.7)	34 (3.1)	26 (2.9)	24 (2.9)
Israel	65 (3.2)	63 (3.2)	57 (3.4)	60 (3.4)	61 (3.1)	35 (3.1)	47 (3.6)
Italy	25 (3.1)	27 (3.6)	22 (3.3)	37 (3.6)	18 (3.1)	16 (3.0)	41 (3.9)
Japan	76 (3.4)	77 (3.3)	35 (4.2)	36 (3.9)	23 (3.4)	31 (3.9)	30 (3.8)
Jordan	18 (2.3)	38 (3.1)	20 (2.5)	31 (3.2)	48 (3.9)	27 (3.2)	38 (3.9)
Kazakhstan	73 (2.0)	76 (1.9)	70 (2.4)	88 (1.8)	77 (2.5)	71 (2.5)	71 (2.4)
Korea, Rep. of	69 (3.9)	76 (3.2)	56 (4.1)	46 (4.2)	47 (4.4)	50 (3.8)	39 (3.9)
Kuwait	69 (4.2)	74 (4.0)	60 (4.5)	61 (3.7)	61 (4.2)	60 (4.2)	62 (3.7)
Lebanon	66 (4.1)	60 (4.0)	54 (4.3)	56 (4.4)	55 (4.4)	50 (4.2)	42 (4.5)
Lithuania	62 (1.8)	54 (2.6)	54 (2.3)	64 (2.5)	46 (2.0)	60 (2.1)	51 (2.0)
Malaysia	49 (4.4)	75 (3.9)	56 (4.0)	54 (4.0)	75 (3.5)	74 (3.8)	35 (4.0)
Malta	55 (0.5)	60 (0.5)	60 (0.5)	56 (0.5)	45 (0.5)	37 (0.5)	49 (0.4)
Morocco	34 (2.0)	43 (2.2)	30 (2.0)	43 (2.2)	14 (1.3)	35 (2.1)	12 (1.6)
New Zealand	63 (3.5)	57 (4.6)	60 (2.8)	58 (4.0)	48 (3.7)	41 (4.0)	42 (4.2)
Norway (9)	12 (2.5)	9 (2.5)	4 (1.7)	3 (1.3)	7 (2.0)	12 (2.9)	7 (2.3)
Oman	47 (3.2)	62 (3.4)	34 (2.9)	44 (3.6)	45 (3.5)	52 (3.5)	31 (3.3)
Qatar	59 (3.1)	67 (2.4)	56 (2.9)	68 (2.7)	69 (2.6)	60 (2.9)	60 (3.2)
Russian Federation	74 (1.8)	75 (2.6)	79 (1.7)	77 (1.8)	57 (2.4)	60 (2.3)	54 (2.5)
Saudi Arabia	57 (4.5)	71 (4.0)	59 (4.7)	50 (4.5)	66 (4.2)	52 (4.7)	47 (4.1)
Singapore	70 (2.6)	91 (1.5)	67 (2.5)	67 (2.6)	65 (2.0)	59 (2.2)	40 (2.7)
Slovenia	74 (1.9)	66 (2.0)	49 (2.4)	65 (2.2)	37 (1.9)	41 (2.3)	39 (2.6)
South Africa (9)	79 (3.1)	52 (3.9)	81 (2.6)	50 (3.5)	58 (3.9)	67 (3.7)	54 (3.7)
Sweden	35 (3.3)	32 (3.4)	36 (3.9)	28 (3.3)	23 (3.9)	32 (4.3)	28 (3.7)
Thailand	76 (3.0)	84 (2.9)	60 (3.9)	67 (3.3)	59 (4.0)	52 (4.3)	35 (4.2)
Turkey	24 (3.3)	22 (3.1)	18 (3.0)	22 (2.7)	16 (2.4)	28 (3.6)	12 (2.0)
United Arab Emirates	r 62 (2.2)	r 69 (2.5)	r 57 (2.3)	r 72 (2.4)	r 74 (1.9)	r 64 (2.1)	r 73 (1.9)
United States	r 75 (2.8)	r 64 (2.8)	r 76 (2.4)	r 63 (3.3)	r 68 (2.7)	r 47 (3.1)	r 66 (2.4)
International Avg.	55 (0.5)	57 (0.5)	49 (0.5)	50 (0.5)	45 (0.5)	44 (0.5)	42 (0.5)

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

Benchmarking Participants

Buenos Aires, Argentina	x x	x x	x x	x x	x x	x x	x x
Ontario, Canada	r 25 (3.6)	r 29 (3.6)	r 23 (4.2)	r 38 (4.8)	r 51 (4.0)	r 16 (3.3)	r 46 (4.4)
Quebec, Canada	53 (5.0)	58 (5.5)	34 (5.2)	61 (6.4)	12 (3.5)	44 (6.4)	40 (5.6)
Norway (8)	19 (3.3)	15 (3.1)	11 (2.6)	8 (2.0)	9 (2.4)	11 (2.6)	8 (2.3)
Abu Dhabi, UAE	52 (4.7)	64 (5.0)	46 (4.8)	69 (3.9)	79 (3.6)	52 (4.5)	79 (3.4)
Dubai, UAE	r 63 (2.6)	r 64 (2.2)	r 53 (1.8)	r 81 (1.9)	r 72 (2.2)	r 75 (1.6)	r 68 (2.3)
Florida, US	s 94 (1.4)	s 64 (7.3)	s 85 (4.8)	s 66 (7.6)	s 80 (5.2)	s 59 (7.5)	s 75 (5.7)

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