

Exhibit 8.7: Teacher Participation in Professional Development in Mathematics 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						
	Mathematics Content	Mathematics Pedagogy/ Instruction	Mathematics Curriculum	Integrating Information Technology into Mathematics	Improving Students' Critical Thinking or Problem Solving Skills	Mathematics Assessment	Addressing Individual Students' Needs
Australia	70 (2.7)	62 (3.9)	66 (4.1)	37 (3.8)	50 (4.2)	43 (3.6)	52 (4.0)
Bahrain	52 (1.6)	66 (2.0)	59 (2.9)	61 (2.0)	57 (3.9)	50 (3.4)	50 (2.0)
Belgium (Flemish)	14 (2.3)	16 (2.6)	22 (3.1)	25 (3.1)	18 (2.6)	10 (2.1)	42 (3.3)
Bulgaria	15 (2.7)	15 (2.8)	20 (4.0)	30 (3.8)	13 (2.9)	31 (3.3)	28 (3.5)
Canada	65 (2.9)	71 (2.6)	48 (2.6)	36 (2.7)	63 (2.2)	49 (2.7)	53 (2.5)
Chile	44 (4.2)	33 (4.1)	28 (4.4)	27 (4.2)	32 (4.4)	17 (3.7)	26 (3.9)
Chinese Taipei	44 (4.1)	50 (3.8)	46 (4.1)	34 (3.4)	40 (3.7)	39 (4.0)	67 (3.0)
Croatia	59 (3.7)	43 (4.0)	37 (3.7)	31 (3.6)	50 (3.8)	31 (3.3)	52 (4.3)
Cyprus	86 (2.2)	70 (2.6)	86 (2.3)	51 (3.3)	48 (3.3)	40 (3.5)	25 (3.1)
Czech Republic	21 (2.9)	31 (3.6)	9 (2.3)	40 (3.4)	29 (3.1)	9 (2.0)	36 (2.9)
Denmark	22 (3.5)	23 (3.2)	11 (2.3)	22 (3.1)	9 (2.1)	12 (2.4)	23 (3.3)
England	64 (3.7)	68 (3.6)	72 (3.8)	31 (3.9)	52 (3.9)	51 (4.2)	43 (4.1)
Finland	6 (1.3)	17 (2.3)	4 (1.3)	11 (2.2)	11 (2.0)	3 (0.9)	24 (2.7)
France	26 (3.0)	30 (2.9)	13 (2.3)	10 (2.2)	16 (2.6)	3 (1.0)	15 (2.5)
Georgia	30 (3.7)	38 (4.1)	34 (4.3)	59 (4.5)	49 (4.2)	38 (3.9)	48 (4.1)
Germany	43 (3.7)	33 (3.7)	32 (3.8)	1 (0.9)	32 (3.5)	20 (3.4)	45 (3.0)
Hong Kong SAR	78 (3.2)	83 (3.1)	53 (4.0)	69 (4.0)	73 (4.6)	45 (4.7)	51 (4.7)
Hungary	14 (3.0)	20 (3.0)	9 (2.3)	15 (2.8)	17 (2.6)	9 (2.2)	27 (3.6)
Indonesia	52 (3.6)	60 (3.6)	43 (3.6)	40 (3.4)	71 (2.8)	68 (3.1)	63 (3.3)
Iran, Islamic Rep. of	80 (2.6)	79 (3.0)	59 (3.3)	29 (3.5)	34 (3.6)	44 (3.8)	39 (3.5)
Ireland	46 (3.7)	37 (3.7)	38 (4.1)	34 (4.0)	45 (3.9)	25 (3.6)	27 (3.8)
Italy	16 (2.5)	28 (3.1)	20 (2.7)	26 (3.5)	20 (3.0)	12 (2.6)	28 (3.4)
Japan	43 (3.4)	52 (3.8)	13 (2.2)	23 (2.8)	30 (2.8)	16 (2.6)	44 (3.3)
Jordan	31 (4.1)	49 (4.0)	35 (4.1)	37 (3.3)	48 (3.8)	40 (3.9)	52 (3.9)
Kazakhstan	49 (4.1)	59 (4.0)	65 (4.1)	76 (3.8)	81 (3.2)	73 (3.6)	69 (4.0)
Korea, Rep. of	32 (3.6)	40 (3.8)	44 (3.9)	16 (3.0)	42 (4.1)	33 (4.0)	38 (4.0)
Kuwait	56 (3.5)	59 (3.1)	55 (3.5)	57 (3.5)	50 (3.8)	45 (3.6)	56 (3.8)
Lithuania	12 (2.4)	14 (2.8)	13 (2.6)	60 (4.0)	54 (3.7)	46 (3.4)	55 (3.6)
Morocco	13 (2.0)	19 (2.4)	15 (2.3)	8 (1.8)	19 (2.4)	19 (2.5)	24 (2.7)
Netherlands	r 22 (4.0)	r 28 (4.1)	r 15 (3.0)	r 18 (3.7)	r 23 (3.5)	r 19 (3.8)	r 49 (4.3)
New Zealand	74 (2.8)	70 (3.0)	63 (2.9)	42 (2.8)	59 (2.9)	58 (2.5)	62 (3.2)
Northern Ireland	r 50 (4.6)	r 63 (4.3)	r 54 (5.0)	r 40 (4.7)	r 46 (4.8)	r 57 (4.9)	r 45 (4.3)
Norway (5)	18 (3.0)	18 (2.7)	6 (1.8)	14 (3.2)	16 (3.4)	13 (2.9)	11 (2.7)
Oman	40 (2.8)	65 (2.8)	36 (3.4)	37 (2.8)	48 (3.1)	42 (2.9)	36 (2.7)
Poland	85 (2.6)	69 (3.9)	72 (3.3)	68 (3.6)	47 (3.8)	51 (3.9)	70 (3.6)
Portugal	46 (3.3)	37 (3.0)	49 (3.5)	23 (2.5)	22 (3.0)	13 (2.5)	24 (2.7)
Qatar	64 (3.1)	68 (2.7)	57 (3.2)	57 (2.8)	67 (2.8)	62 (2.9)	66 (3.4)
Russian Federation	37 (3.8)	43 (4.2)	68 (3.4)	67 (3.2)	51 (3.8)	66 (3.2)	55 (3.5)
Saudi Arabia	50 (4.0)	68 (3.7)	44 (4.3)	45 (3.4)	53 (4.1)	41 (4.4)	49 (4.1)
Serbia	49 (3.8)	33 (3.6)	29 (3.6)	19 (3.0)	45 (3.9)	30 (3.7)	42 (4.4)
Singapore	64 (2.9)	81 (2.6)	60 (2.5)	59 (2.7)	58 (2.8)	62 (2.9)	43 (2.7)
Slovak Republic	5 (1.3)	11 (2.0)	27 (2.8)	37 (3.4)	17 (2.8)	11 (2.0)	22 (2.9)
Slovenia	20 (3.0)	17 (2.5)	31 (3.7)	29 (3.5)	29 (3.7)	38 (3.7)	30 (3.4)
South Africa (5)	79 (2.5)	54 (3.1)	82 (2.6)	38 (3.4)	66 (3.3)	83 (2.3)	61 (3.2)
Spain	27 (3.5)	34 (4.2)	23 (2.9)	34 (3.9)	32 (3.5)	17 (2.5)	45 (3.7)
Sweden	56 (4.3)	58 (4.3)	43 (4.6)	10 (2.5)	50 (4.5)	49 (4.1)	24 (2.3)
Turkey	5 (1.5)	6 (1.4)	6 (1.6)	9 (2.0)	10 (2.1)	7 (1.8)	12 (3.5)
United Arab Emirates	60 (2.2)	59 (2.6)	59 (2.5)	60 (2.3)	72 (2.2)	60 (2.4)	67 (2.3)
United States	71 (2.4)	62 (2.5)	70 (2.5)	41 (2.3)	62 (2.8)	48 (2.7)	59 (2.6)
International Avg.	43 (0.5)	45 (0.5)	40 (0.5)	36 (0.5)	41 (0.5)	36 (0.5)	42 (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 Mathematics in the Past Two Years (Continued)

Country	Percent of Students by Teachers' Area of Professional Development						
	Mathematics Content	Mathematics Pedagogy/ Instruction	Mathematics Curriculum	Integrating Information Technology into Mathematics	Improving Students' Critical Thinking or Problem Solving Skills	Mathematics Assessment	Addressing Individual Students' Needs
Benchmarking Participants							
Buenos Aires, Argentina	x x	x x	x x	x x	x x	x x	x x
Ontario, Canada	69 (4.2)	81 (2.9)	56 (4.0)	37 (4.1)	81 (3.1)	55 (3.9)	55 (4.2)
Quebec, Canada	62 (6.1)	63 (5.8)	31 (5.4)	33 (6.0)	38 (5.7)	47 (5.5)	40 (5.7)
Norway (4)	11 (2.4)	14 (2.8)	5 (1.8)	8 (2.5)	8 (2.1)	8 (1.9)	8 (1.8)
Abu Dhabi, UAE	63 (3.8)	57 (4.7)	64 (4.2)	58 (4.2)	73 (3.5)	51 (4.0)	66 (4.0)
Dubai, UAE	57 (1.8)	60 (2.4)	56 (1.9)	61 (2.0)	73 (1.8)	66 (2.3)	67 (1.6)
Florida, US	r 75 (4.8)	r 61 (6.3)	r 74 (5.1)	r 45 (6.5)	r 60 (4.4)	r 52 (5.4)	r 62 (5.1)

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