

### Exhibit 9.6: Teachers Emphasize Science Investigation

Reported by Teachers

Students were scored according to their teachers' responses to how often they used each of eight instructional activities on the *Emphasize Science Investigation* scale. Students with teachers who emphasized science investigation in **About Half the Lessons or More** had a score on the scale of at least 11.3, which corresponds to their teachers using all eight activities in "about half the lessons," on average. All other students had teachers who emphasized science investigation in **Less than Half the Lessons**.

Country	About Half the Lessons or More		Less than Half the Lessons		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Oman	69 (2.9)	456 (3.1)	31 (2.9)	453 (5.6)	11.9 (0.10)
Iran, Islamic Rep. of	62 (3.1)	463 (4.7)	38 (3.1)	446 (6.6)	11.6 (0.11)
Lebanon	52 (3.9)	403 (6.2)	48 (3.9)	392 (9.2)	11.3 (0.11)
Kuwait	48 (4.5)	407 (8.7)	52 (4.5)	411 (7.3)	11.2 (0.15)
Morocco	46 (2.4)	396 (3.4)	54 (2.4)	391 (2.9)	11.1 (0.08)
United Arab Emirates	r 44 (2.5)	487 (4.6)	56 (2.5)	471 (4.0)	10.8 (0.11)
Jordan	43 (3.6)	437 (5.7)	57 (3.6)	418 (4.5)	10.9 (0.13)
Egypt	42 (4.1)	375 (7.3)	58 (4.1)	367 (5.5)	10.7 (0.16)
Saudi Arabia	40 (4.3)	408 (7.2)	60 (4.3)	388 (5.9)	10.8 (0.18)
Kazakhstan	39 (2.6)	530 (6.6)	61 (2.6)	535 (5.1)	10.7 (0.13)
Bahrain	38 (3.2)	477 (4.1)	62 (3.2)	457 (3.5)	10.6 (0.13)
Turkey	38 (3.2)	496 (7.4)	62 (3.2)	492 (4.8)	10.7 (0.12)
Qatar	37 (4.0)	450 (6.9)	63 (4.0)	459 (4.8)	10.7 (0.14)
South Africa (9)	35 (4.0)	363 (9.5)	65 (4.0)	355 (7.2)	10.3 (0.18)
Thailand	31 (4.0)	469 (8.9)	69 (4.0)	450 (5.1)	10.1 (0.16)
Malaysia	30 (3.4)	478 (8.9)	70 (3.4)	465 (5.7)	10.4 (0.16)
Israel	27 (2.7)	498 (9.5)	73 (2.7)	512 (4.9)	10.0 (0.11)
Botswana (9)	26 (3.6)	391 (6.5)	74 (3.6)	395 (3.5)	10.0 (0.15)
Chile	25 (4.4)	443 (8.1)	75 (4.4)	460 (4.8)	9.8 (0.18)
Hong Kong SAR	25 (3.6)	565 (6.6)	75 (3.6)	539 (5.0)	10.1 (0.13)
United States	r 21 (2.5)	541 (6.1)	79 (2.5)	531 (3.5)	9.7 (0.12)
Ireland	20 (2.5)	540 (4.7)	80 (2.5)	535 (3.0)	10.1 (0.11)
Japan	18 (3.2)	567 (3.7)	82 (3.2)	572 (2.0)	9.9 (0.13)
England	r 18 (1.9)	547 (6.1)	82 (1.9)	536 (5.2)	10.0 (0.08)
Georgia	17 (1.7)	443 (4.4)	83 (1.7)	443 (3.3)	9.5 (0.08)
Australia	r 16 (2.4)	520 (7.0)	84 (2.4)	515 (3.0)	9.8 (0.10)
Korea, Rep. of	16 (2.7)	555 (3.3)	84 (2.7)	556 (2.4)	9.3 (0.15)
Italy	15 (2.7)	494 (8.9)	85 (2.7)	499 (2.9)	9.1 (0.15)
Slovenia	14 (1.4)	553 (3.4)	86 (1.4)	551 (2.5)	9.4 (0.07)
Hungary	13 (1.3)	547 (4.6)	87 (1.3)	523 (3.5)	9.2 (0.07)
Canada	r 12 (2.3)	522 (10.3)	88 (2.3)	528 (2.3)	9.2 (0.12)
Chinese Taipei	11 (2.6)	581 (6.3)	89 (2.6)	568 (2.3)	8.9 (0.14)
Russian Federation	11 (1.5)	556 (8.7)	89 (1.5)	543 (4.3)	8.9 (0.08)
New Zealand	10 (1.9)	516 (12.3)	90 (1.9)	516 (3.7)	9.5 (0.11)
Malta	8 (0.3)	477 (4.0)	92 (0.3)	482 (1.7)	9.1 (0.02)
Singapore	8 (1.6)	617 (15.1)	92 (1.6)	595 (3.5)	9.0 (0.09)
Lithuania	7 (1.0)	514 (5.1)	93 (1.0)	520 (2.9)	8.4 (0.07)
Norway (9)	5 (2.0)	512 (20.6)	95 (2.0)	510 (3.1)	8.3 (0.12)
Sweden	5 (1.2)	497 (19.7)	95 (1.2)	524 (3.5)	8.4 (0.13)
International Avg.	27 (0.5)	490 (1.3)	73 (0.5)	485 (0.7)	

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

This TIMSS questionnaire scale was established in 2015 based on the combined response distribution of all countries that participated in TIMSS 2015. To provide a point of reference for country comparisons, the scale centerpoint of 10 was located at the mean of the combined distribution. The units of the scale were chosen so that 2 scale score points corresponded to the standard deviation of the distribution.

( ) 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.

**Exhibit 9.6: Teachers Emphasize Science Investigation (Continued)**

Country	About Half the Lessons or More		Less than Half the Lessons		Average Scale Score	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement		
<b>Benchmarking Participants</b>						
Dubai, UAE	r	52 (2.4)	526 (4.8)	48 (2.4)	520 (4.8)	11.3 (0.09)
Abu Dhabi, UAE	r	41 (5.6)	456 (13.4)	59 (5.6)	453 (8.2)	10.7 (0.24)
Florida, US	s	19 (5.6)	504 (18.4)	81 (5.6)	522 (9.5)	9.5 (0.32)
Quebec, Canada		13 (4.3)	514 (22.0)	87 (4.3)	530 (4.8)	9.0 (0.21)
Ontario, Canada	r	11 (2.6)	518 (10.6)	89 (2.6)	527 (2.4)	9.4 (0.14)
Norway (8)		4 (1.7)	487 (8.0)	96 (1.7)	490 (2.7)	8.3 (0.14)
Buenos Aires, Argentina		x x	x x	x x	x x	x x

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