

Exhibit 5.3.9: Teachers Emphasize Science Inquiry – Teachers’ Reports

About the Items

Exhibit 5.3.10 reports the percentage of students whose teachers responded “a lot” to each of eight items.

How much emphasis do you place on the following when teaching science to students in this class?

	A lot	Some	None
1) Encouraging students to ask questions about scientific phenomena -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2) Having students predict the outcomes of experiments or investigations -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3) Having students discuss variation in data from experiments or investigations -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4) Having students use multiple sources of evidence to explain scientific phenomena -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5) Having students create representations (e.g., models, graphs) to explain scientific phenomena -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6) Having students use scientific concepts to explain phenomena -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7) Having students argue about science questions -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8) Having students conduct experiments (hands-on or virtually) -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SOURCE: IEA's Trends in International Mathematics and Science Study - TIMSS 2023
Downloaded from <https://timss2023.org/results>

Exhibit 5.3.10: Teachers Emphasize Science Inquiry – Teachers' Reports

Percent of Students Whose Teachers Place "A lot" of Emphasis on Science Inquiry Practices

Country	Ask Questions about Scientific Phenomena	Predict the Outcomes of Experiments or Investigations	Discuss Variation in Data from Experiments or Investigations	Use Multiple Sources of Evidence to Explain Scientific Phenomena	Create Representations to Explain Scientific Phenomena	Use Scientific Concepts to Explain Phenomena	Argue about Science Questions	Conduct Experiments
Australia	s 76 (3.1)	s 71 (3.5)	s 50 (3.4)	s 28 (3.4)	s 41 (3.5)	s 59 (3.4)	s 16 (2.1)	s 56 (4.0)
Austria	72 (2.0)	46 (2.0)	28 (2.0)	21 (2.2)	16 (1.4)	30 (2.2)	43 (2.7)	31 (1.8)
Azerbaijan	r 91 (1.1)	r 67 (2.3)	r 74 (1.9)	r 61 (1.9)	r 56 (2.2)	r 63 (2.0)	r 68 (1.8)	r 47 (2.0)
Bahrain	89 (2.7)	82 (3.7)	65 (3.3)	53 (2.8)	56 (2.9)	76 (4.0)	70 (2.9)	58 (4.4)
Brazil	76 (1.9)	51 (3.2)	45 (2.7)	42 (2.8)	32 (2.4)	51 (3.0)	54 (2.9)	32 (2.4)
Chile	83 (2.8)	72 (4.0)	53 (4.5)	50 (4.3)	68 (4.3)	75 (3.1)	42 (4.0)	54 (4.0)
Chinese Taipei	57 (4.2)	39 (4.1)	34 (3.9)	39 (4.0)	42 (3.8)	59 (3.9)	20 (2.9)	52 (3.8)
Cyprus	82 (1.1)	80 (1.1)	53 (2.0)	43 (1.7)	40 (1.9)	66 (1.5)	63 (1.5)	48 (1.7)
Czech Republic	44 (1.8)	41 (1.7)	32 (1.8)	41 (1.9)	27 (1.6)	20 (1.6)	33 (1.9)	29 (1.5)
England	s 55 (5.5)	s 56 (5.2)	s 37 (5.3)	s 9 (2.7)	s 35 (4.7)	s 58 (5.2)	s 9 (2.8)	s 54 (4.6)
Finland	51 (2.3)	26 (1.9)	18 (1.2)	14 (1.8)	14 (1.4)	49 (2.0)	25 (1.9)	39 (1.7)
France	90 (1.7)	66 (3.0)	44 (2.5)	34 (2.8)	61 (2.8)	55 (3.2)	23 (2.4)	60 (3.0)
Georgia	59 (1.7)	49 (2.0)	46 (2.2)	39 (2.3)	41 (2.2)	44 (1.6)	53 (1.7)	31 (2.0)
Hong Kong SAR	s 52 (5.0)	s 68 (5.1)	s 40 (5.4)	s 19 (4.1)	s 16 (4.1)	s 52 (5.7)	s 21 (4.4)	s 73 (4.1)
Hungary	r 71 (1.8)	r 43 (1.9)	r 36 (2.2)	r 38 (2.1)	r 28 (2.1)	r 51 (2.2)	r 25 (1.8)	r 24 (1.9)
Iran, Islamic Rep. of	78 (2.7)	69 (3.4)	62 (3.5)	62 (3.4)	48 (3.5)	59 (3.6)	71 (3.0)	59 (3.3)
Ireland	65 (3.4)	77 (3.0)	50 (4.0)	23 (3.4)	33 (3.7)	37 (2.9)	20 (2.6)	53 (3.3)
Israel	77 (2.9)	74 (3.2)	58 (3.7)	42 (3.8)	40 (3.5)	74 (3.4)	67 (3.6)	52 (3.6)
Italy	83 (2.6)	56 (4.0)	48 (3.9)	43 (3.7)	44 (4.0)	52 (3.6)	52 (3.5)	43 (3.9)
Japan	56 (4.8)	61 (4.0)	66 (3.8)	61 (4.4)	69 (4.1)	69 (4.4)	61 (4.7)	80 (3.7)
Jordan	85 (3.0)	72 (3.5)	59 (4.0)	53 (4.1)	44 (4.0)	73 (4.0)	55 (4.1)	53 (4.1)
Kazakhstan	67 (1.9)	56 (1.9)	54 (2.0)	55 (2.2)	49 (2.1)	52 (2.0)	55 (1.9)	50 (1.9)
Korea, Rep. of	54 (3.2)	55 (3.4)	46 (3.5)	49 (3.5)	42 (3.6)	68 (3.4)	23 (3.1)	36 (3.7)
Kuwait	73 (3.9)	73 (3.8)	63 (4.3)	44 (4.5)	35 (3.7)	66 (4.5)	46 (4.3)	62 (4.1)
Lithuania	49 (2.2)	46 (1.8)	45 (1.8)	41 (2.0)	37 (2.0)	55 (2.0)	32 (1.6)	42 (2.0)
Malaysia	68 (3.1)	67 (3.3)	47 (2.8)	38 (2.9)	36 (2.7)	55 (3.4)	40 (3.1)	55 (3.2)
Malta	r 68 (0.5)	r 60 (0.6)	r 45 (0.6)	r 26 (0.5)	r 18 (0.5)	r 47 (0.5)	r 36 (0.5)	r 44 (0.6)
Morocco	87 (1.8)	62 (2.8)	57 (2.7)	47 (2.5)	45 (2.6)	67 (2.4)	52 (2.6)	18 (2.2)
Norway (9)	r 62 (3.6)	r 45 (3.7)	r 19 (2.7)	r 14 (2.6)	r 14 (2.5)	r 53 (3.2)	r 42 (3.3)	r 21 (2.9)
Oman	92 (1.9)	90 (1.8)	83 (2.3)	62 (3.3)	68 (2.9)	73 (3.0)	57 (3.4)	79 (2.8)
Palestinian Nat'l Auth.	87 (2.6)	70 (3.4)	57 (3.3)	47 (3.5)	37 (3.8)	70 (3.5)	90 (2.4)	53 (3.3)
Portugal	88 (1.6)	68 (2.4)	53 (2.7)	40 (2.5)	28 (2.3)	74 (2.3)	55 (2.7)	48 (2.4)
Qatar	89 (2.3)	78 (4.0)	72 (4.2)	62 (4.2)	60 (4.9)	78 (3.7)	63 (4.0)	62 (4.4)
Romania	r 89 (2.1)	r 55 (3.2)	r 54 (3.1)	r 56 (3.4)	r 44 (3.8)	r 61 (2.8)	r 50 (3.6)	r 38 (2.8)
Saudi Arabia	88 (2.6)	81 (3.1)	59 (3.5)	67 (3.9)	50 (3.8)	74 (3.0)	80 (2.9)	57 (3.5)
Singapore	58 (3.4)	42 (3.4)	23 (3.2)	11 (2.1)	11 (2.4)	54 (3.5)	9 (2.1)	30 (3.1)
South Africa (9)	r 79 (3.2)	r 52 (3.8)	r 31 (3.7)	r 33 (3.6)	r 27 (3.1)	r 46 (4.5)	r 39 (4.3)	r 19 (3.0)
Sweden	r 70 (3.2)	r 53 (3.7)	r 40 (3.9)	r 23 (3.0)	r 14 (2.4)	r 78 (3.0)	r 66 (3.5)	r 60 (3.4)
Türkiye	62 (4.0)	77 (3.2)	60 (4.1)	53 (4.2)	53 (3.8)	61 (3.9)	68 (3.7)	63 (3.5)
United Arab Emirates	88 (1.1)	81 (1.4)	69 (1.4)	67 (1.4)	58 (1.6)	77 (1.5)	59 (1.7)	60 (1.3)
United States	72 (3.0)	62 (3.2)	43 (3.1)	43 (3.3)	49 (3.3)	58 (3.2)	26 (2.6)	46 (3.9)
Uzbekistan	89 (1.2)	71 (1.6)	75 (2.0)	78 (1.9)	66 (2.2)	74 (1.9)	86 (1.8)	71 (2.2)
International Average	73 (0.4)	62 (0.5)	50 (0.5)	42 (0.5)	40 (0.5)	60 (0.5)	47 (0.5)	49 (0.5)
Cote d'Ivoire	x 95 (1.6)	x 46 (4.3)	x 46 (5.1)	x 42 (4.4)	x 11 (2.3)	x 38 (4.6)	x 45 (4.7)	x 31 (4.2)
Benchmarking Participants								
Abu Dhabi, UAE	87 (2.0)	r 77 (2.6)	r 63 (2.4)	61 (3.0)	r 53 (2.6)	71 (2.9)	r 57 (3.0)	r 52 (2.4)
Dubai, UAE	89 (2.3)	86 (1.9)	71 (2.2)	65 (2.0)	57 (3.1)	79 (2.8)	52 (3.1)	61 (2.7)
Sharjah, UAE	r 90 (1.6)	r 79 (3.1)	r 68 (3.4)	r 73 (2.5)	r 59 (3.0)	r 81 (3.2)	r 65 (3.7)	r 62 (3.0)

() 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 at least 40% but less than 50% of the students—interpret with caution.