

# REFERENCE 4

School Contexts for  
Learning and  
Instruction

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4



	Percentage of Students Affected by Shortage or Inadequacy				
	Instructional Materials	Budget for Supplies	School Buildings/ Grounds	Heating/Cooling and Lighting	Instructional Space
Australia	26 (3.7)	22 (4.1)	32 (4.1)	21 (3.5)	27 (4.0)
Belgium (Flemish)	6 (2.2)	5 (2.1)	20 (3.3)	4 (1.8)	20 (4.2)
Bulgaria	92 (2.2)	80 (5.8)	71 (4.3)	72 (4.1)	63 (5.0)
Canada	45 (2.8)	43 (2.8)	29 (2.8)	11 (1.9)	25 (2.4)
Chile	23 (3.1)	34 (3.0)	38 (3.6)	22 (2.9)	31 (3.8)
Chinese Taipei	45 (4.4)	45 (4.0)	59 (4.1)	41 (3.9)	51 (4.0)
Cyprus	7 (0.1)	7 (0.1)	61 (0.2)	30 (0.3)	45 (0.3)
Czech Republic	22 (5.0)	52 (5.5)	15 (3.3)	5 (1.4)	11 (3.3)
England	r 37 (4.9)	r 31 (4.5)	r 42 (5.3)	r 17 (3.6)	r 38 (5.1)
Finland	31 (4.0)	10 (2.8)	49 (4.1)	16 (3.6)	41 (3.7)
Hong Kong, SAR	35 (3.9)	21 (3.9)	57 (4.8)	24 (3.4)	57 (4.6)
Hungary	27 (3.9)	25 (3.7)	32 (3.8)	17 (3.4)	39 (4.2)
Indonesia	45 (4.4)	36 (4.3)	39 (4.1)	36 (4.6)	44 (3.9)
Iran, Islamic Rep.	26 (4.0)	61 (3.7)	68 (4.0)	50 (4.7)	54 (3.9)
Israel	15 (3.1)	18 (3.3)	42 (4.5)	28 (3.8)	33 (4.4)
Italy	28 (3.5)	28 (3.6)	31 (3.7)	15 (2.7)	35 (3.4)
Japan	17 (2.9)	14 (3.0)	29 (3.8)	31 (3.5)	34 (3.5)
Jordan	74 (4.1)	64 (4.3)	75 (3.9)	74 (3.7)	69 (3.7)
Korea, Rep. of	37 (3.9)	29 (4.0)	51 (4.5)	52 (4.2)	55 (4.2)
Latvia (LSS)	80 (3.8)	87 (3.3)	72 (4.0)	65 (4.9)	65 (4.2)
Lithuania †	82 (3.3)	65 (3.9)	31 (4.0)	45 (4.1)	56 (3.8)
Macedonia, Rep. of	38 (4.3)	75 (3.8)	74 (3.7)	52 (4.2)	63 (4.4)
Malaysia	38 (4.3)	44 (4.2)	40 (4.6)	26 (3.4)	40 (4.2)
Moldova	97 (0.9)	95 (1.8)	77 (3.9)	91 (2.4)	69 (4.0)
Morocco	59 (4.0)	77 (3.4)	58 (4.3)	45 (4.1)	45 (4.0)
Netherlands	r 10 (4.0)	r 19 (6.4)	r 45 (7.0)	r 9 (2.8)	r 26 (5.3)
New Zealand	24 (3.6)	27 (3.5)	37 (4.2)	6 (2.1)	29 (3.9)
Philippines	67 (4.0)	52 (4.4)	56 (3.9)	49 (3.9)	52 (4.3)
Romania	54 (4.6)	74 (3.8)	50 (4.8)	36 (4.1)	46 (4.3)
Russian Federation	92 (2.4)	81 (3.1)	73 (3.6)	63 (4.4)	69 (3.2)
Singapore	10 (2.2)	7 (2.0)	23 (2.6)	11 (2.4)	26 (3.3)
Slovak Republic	44 (4.4)	67 (4.0)	31 (4.6)	12 (2.9)	42 (5.0)
Slovenia	55 (4.2)	68 (4.0)	60 (4.5)	49 (4.3)	62 (4.2)
South Africa	67 (4.1)	66 (4.1)	61 (4.3)	59 (4.1)	57 (3.7)
Thailand	86 (3.0)	84 (2.9)	81 (3.2)	63 (4.1)	78 (3.1)
Tunisia	83 (3.2)	77 (3.5)	87 (2.8)	48 (4.5)	76 (3.7)
Turkey	80 (3.6)	60 (4.0)	78 (3.6)	74 (3.5)	75 (4.0)
United States	r 22 (2.9)	r 27 (4.1)	r 33 (3.4)	r 17 (3.5)	r 33 (3.4)
<b>International Avg.</b>	45 (0.6)	47 (0.6)	50 (0.7)	36 (0.6)	47 (0.6)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by schools.

† Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

An "r" indicates school response data available for 70-80% of students.

	Percentage of Students Affected by Shortage or Inadequacy					
	Science Laboratory Equipment and Materials	Computers for Science Instruction	Computer Software for Science Instruction	Calculators for Science Instruction	Library Materials Relevant to Science Instruction	Audio-Visual Resources for Science Instruction
Australia	27 (4.0)	48 (4.6)	45 (4.7)	11 (2.5)	23 (3.4)	23 (3.5)
Belgium (Flemish)	14 (3.5)	29 (4.5)	30 (4.6)	4 (1.4)	9 (2.4)	11 (3.8)
Bulgaria	88 (3.1)	78 (4.0)	77 (3.9)	45 (5.5)	85 (3.2)	86 (4.0)
Canada	37 (3.2)	49 (2.8)	54 (2.9)	27 (2.5)	39 (2.9)	33 (3.4)
Chile	67 (3.6)	55 (3.4)	58 (4.0)	42 (3.4)	44 (3.8)	48 (4.1)
Chinese Taipei	56 (4.1)	62 (4.1)	68 (4.2)	50 (4.4)	56 (4.5)	58 (4.5)
Cyprus	22 (0.3)	61 (0.2)	r 47 (0.2)	20 (0.3)	28 (0.3)	37 (0.2)
Czech Republic	27 (5.0)	37 (5.1)	40 (5.2)	8 (3.0)	13 (3.2)	13 (3.3)
England	r 41 (4.7)	r 54 (4.9)	r 53 (5.1)	r 26 (4.1)	r 30 (4.4)	r 26 (4.2)
Finland	45 (4.0)	49 (4.1)	50 (4.3)	10 (2.7)	19 (3.4)	15 (3.1)
Hong Kong, SAR	36 (4.5)	65 (4.3)	71 (4.1)	20 (3.6)	32 (4.3)	43 (4.7)
Hungary	61 (4.1)	47 (4.2)	53 (4.3)	20 (3.6)	26 (3.7)	39 (4.1)
Indonesia	61 (4.7)	37 (4.5)	37 (4.5)	34 (4.6)	55 (4.7)	47 (4.6)
Iran, Islamic Rep.	58 (3.6)	75 (4.1)	74 (4.1)	65 (4.2)	71 (3.6)	66 (4.5)
Israel	38 (4.6)	44 (4.3)	44 (4.5)	29 (4.0)	39 (4.1)	32 (4.3)
Italy	54 (3.6)	38 (3.8)	51 (4.0)	16 (2.8)	39 (3.9)	41 (3.4)
Japan	42 (4.1)	36 (4.3)	43 (4.4)	9 (2.5)	23 (3.7)	36 (3.8)
Jordan	87 (2.9)	56 (4.2)	55 (4.2)	45 (4.4)	72 (3.8)	75 (3.8)
Korea, Rep. of	60 (4.1)	65 (4.1)	77 (3.7)	43 (4.2)	62 (4.1)	68 (3.9)
Latvia (LSS)	78 (4.0)	71 (4.4)	69 (4.6)	40 (4.6)	66 (4.2)	70 (4.6)
Lithuania †	81 (3.0)	77 (3.6)	76 (3.7)	37 (4.0)	63 (4.4)	80 (3.5)
Macedonia, Rep. of	90 (2.1)	89 (2.8)	90 (2.6)	89 (2.6)	85 (3.1)	88 (2.1)
Malaysia	49 (4.3)	44 (4.5)	44 (4.5)	30 (3.8)	54 (4.3)	52 (4.0)
Moldova	96 (1.7)	88 (2.6)	87 (3.0)	78 (3.7)	88 (2.3)	91 (2.2)
Morocco	62 (4.0)	62 (4.8)	61 (4.7)	54 (4.7)	65 (4.1)	64 (4.8)
Netherlands	r 24 (5.5)	r 43 (6.7)	r 46 (7.4)	r 4 (1.7)	r 20 (4.7)	r 16 (4.6)
New Zealand	31 (3.9)	45 (4.3)	45 (4.3)	15 (3.0)	22 (3.9)	23 (3.7)
Philippines	64 (3.8)	63 (3.9)	64 (4.0)	56 (3.8)	69 (3.7)	68 (3.8)
Romania	81 (3.3)	88 (3.1)	89 (2.9)	67 (4.2)	69 (4.2)	83 (3.4)
Russian Federation	93 (1.9)	87 (3.0)	85 (3.6)	61 (4.1)	81 (3.2)	84 (4.0)
Singapore	11 (2.8)	32 (3.8)	37 (4.2)	6 (1.8)	14 (2.8)	17 (3.1)
Slovak Republic	81 (3.4)	88 (2.8)	87 (3.1)	32 (4.4)	51 (5.0)	68 (3.5)
Slovenia	72 (4.2)	54 (4.6)	56 (4.0)	18 (3.5)	42 (4.3)	61 (4.1)
South Africa	74 (3.6)	78 (3.5)	79 (3.5)	70 (4.0)	79 (3.3)	79 (3.4)
Thailand	85 (3.1)	80 (3.3)	81 (3.3)	61 (3.9)	88 (3.1)	88 (2.5)
Tunisia	80 (3.4)	42 (4.3)	44 (4.4)	27 (3.8)	56 (4.1)	77 (3.8)
Turkey	91 (2.7)	76 (3.3)	73 (3.1)	43 (3.9)	80 (3.0)	80 (3.6)
United States	r 38 (4.2)	r 45 (4.1)	r 47 (4.1)	r 29 (3.8)	r 29 (3.9)	r 30 (4.0)
<b>International Avg.</b>	<b>58 (0.6)</b>	<b>59 (0.7)</b>	<b>60 (0.7)</b>	<b>35 (0.6)</b>	<b>50 (0.6)</b>	<b>53 (0.6)</b>

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by schools.

† Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

An "r" indicates school response data available for 70-80% of students.

	Percentage of Students by Number of Students per Computer <sup>1</sup>				Percentage of Students in Schools Without Any Computers
	Fewer than 15 Students per Computer	15-30 Students per Computer	31-50 Students per Computer	More than 50 Students per Computer	
Australia r	100 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Belgium (Flemish) r	83 (3.0)	9 (2.2)	1 (0.8)	4 (1.7)	4 (1.6)
Bulgaria	48 (5.9)	9 (2.3)	4 (1.5)	2 (1.1)	37 (5.3)
Canada	100 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Chile	70 (2.8)	6 (1.9)	2 (1.1)	4 (1.0)	18 (3.0)
Chinese Taipei	90 (2.5)	9 (2.6)	1 (0.8)	0 (0.0)	0 (0.0)
Cyprus	6 (0.1)	9 (0.1)	16 (0.1)	48 (0.2)	22 (0.2)
Czech Republic	89 (3.0)	2 (1.4)	5 (2.4)	0 (0.0)	3 (1.2)
England r	100 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Finland r	98 (1.2)	1 (0.0)	0 (0.0)	0 (0.0)	1 (0.0)
Hong Kong, SAR r	86 (3.3)	3 (1.5)	4 (1.8)	3 (1.3)	5 (2.2)
Hungary	98 (1.1)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.1)
Indonesia	6 (1.4)	12 (3.6)	3 (1.0)	22 (4.4)	57 (4.5)
Iran, Islamic Rep.	1 (1.1)	1 (0.6)	1 (0.7)	5 (1.7)	92 (2.1)
Israel s	92 (2.8)	4 (2.4)	1 (0.0)	0 (0.0)	3 (1.7)
Italy	64 (3.4)	19 (2.9)	7 (2.2)	3 (1.3)	6 (1.6)
Japan	92 (2.7)	5 (1.8)	0 (0.0)	0 (0.0)	3 (1.9)
Jordan	44 (3.4)	9 (2.5)	1 (0.0)	1 (0.8)	45 (3.7)
Korea, Rep. of	75 (3.6)	14 (3.2)	6 (1.8)	5 (1.8)	1 (0.0)
Latvia (LSS) r	88 (3.0)	2 (1.7)	1 (1.1)	1 (0.1)	7 (2.3)
Lithuania †	81 (3.2)	8 (2.4)	1 (0.9)	1 (1.0)	8 (2.2)
Macedonia, Rep. of	20 (2.8)	26 (3.6)	5 (2.1)	3 (1.6)	45 (3.8)
Malaysia	6 (2.2)	10 (2.2)	7 (2.0)	26 (3.6)	50 (4.0)
Moldova	81 (3.6)	6 (2.0)	0 (0.0)	0 (0.0)	13 (3.0)
Morocco	3 (1.4)	4 (1.5)	8 (2.2)	16 (2.8)	68 (3.6)
Netherlands s	99 (1.0)	1 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)
New Zealand	99 (0.6)	0 (0.0)	0 (0.0)	1 (0.0)	0 (0.0)
Philippines	14 (2.2)	8 (2.2)	6 (2.0)	31 (3.9)	42 (4.2)
Romania	14 (3.2)	13 (2.9)	2 (1.2)	5 (1.8)	65 (4.3)
Russian Federation	37 (4.9)	6 (2.0)	1 (0.0)	3 (1.5)	53 (4.8)
Singapore	98 (1.3)	2 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)
Slovak Republic	21 (3.9)	10 (3.0)	4 (2.0)	4 (1.9)	61 (4.7)
Slovenia	95 (1.9)	3 (1.6)	0 (0.0)	1 (0.9)	1 (0.0)
South Africa	18 (2.9)	4 (1.6)	2 (0.9)	5 (1.5)	72 (3.0)
Thailand	58 (4.3)	16 (2.9)	5 (1.8)	10 (2.7)	11 (2.7)
Tunisia	0 (0.0)	0 (0.0)	1 (0.7)	6 (2.2)	93 (2.3)
Turkey s	21 (4.1)	2 (1.1)	2 (1.1)	2 (1.3)	73 (4.1)
United States s	97 (1.8)	3 (1.8)	0 (0.0)	0 (0.0)	0 (0.0)
<b>International Avg.</b>	<b>60 (0.4)</b>	<b>6 (0.3)</b>	<b>3 (0.2)</b>	<b>6 (0.3)</b>	<b>25 (0.4)</b>

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by schools.

<sup>1</sup> Ratio of grade 8 enrollment to total computers for instructional use by grade 8 teachers and students.<sup>†</sup> Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

An "r" indicates school response data available for 70-84% of students. An "s" indicates school response data available for 50-69% of students.

	Percentage of Students by Level of Access			
	Access to World Wide Web (with or without e-mail)	Access to E-mail Only	No Internet Access but Planning to Get Internet Access by 2001	No Access to the Internet and No Immediate Plans to Obtain Access
Australia r	94 (1.9)	0 (0.0)	6 (1.9)	0 (0.0)
Belgium (Flemish)	73 (4.0)	1 (0.7)	24 (3.9)	2 (1.2)
Bulgaria	18 (6.5)	0 (0.0)	39 (5.0)	43 (5.2)
Canada	96 (1.2)	1 (0.5)	3 (1.0)	0 (0.3)
Chile	23 (3.5)	3 (1.3)	59 (4.3)	16 (2.8)
Chinese Taipei	89 (2.8)	5 (1.9)	6 (2.0)	0 (0.0)
Cyprus r	23 (0.1)	0 (0.0)	49 (0.2)	28 (0.2)
Czech Republic	34 (5.1)	2 (1.7)	45 (5.4)	19 (3.8)
England r	86 (3.4)	1 (0.1)	13 (3.3)	0 (0.0)
Finland	100 (0.5)	0 (0.0)	0 (0.5)	0 (0.0)
Hong Kong, SAR r	85 (3.7)	0 (0.0)	15 (3.7)	0 (0.0)
Hungary	46 (4.2)	3 (1.6)	42 (4.2)	9 (2.5)
Indonesia	0 (0.4)	0 (0.0)	15 (3.4)	85 (3.4)
Iran, Islamic Rep.	0 (0.0)	0 (0.0)	39 (4.4)	61 (4.4)
Israel r	68 (4.0)	0 (0.0)	26 (4.0)	6 (2.3)
Italy	41 (4.2)	4 (1.6)	54 (4.2)	2 (1.2)
Japan	29 (3.9)	2 (1.1)	29 (4.0)	41 (4.2)
Jordan	2 (1.4)	1 (0.0)	28 (3.8)	70 (3.7)
Korea, Rep. of	48 (4.4)	0 (0.0)	46 (4.3)	6 (1.9)
Latvia (LSS) r	48 (4.2)	9 (2.9)	20 (3.7)	23 (4.2)
Lithuania †	64 (3.7)	0 (0.0)	24 (3.4)	12 (2.7)
Macedonia, Rep. of	1 (0.9)	0 (0.0)	51 (4.5)	48 (4.4)
Malaysia	16 (3.3)	2 (1.0)	60 (4.4)	22 (3.5)
Moldova	2 (1.2)	0 (0.0)	14 (2.6)	84 (2.9)
Morocco	0 (0.0)	0 (0.0)	8 (2.2)	92 (2.2)
Netherlands r	81 (7.1)	3 (1.9)	15 (7.0)	1 (0.7)
New Zealand	87 (3.0)	1 (0.6)	12 (2.9)	1 (0.0)
Philippines	9 (2.6)	1 (1.0)	48 (4.2)	41 (3.9)
Romania	3 (1.6)	1 (0.7)	41 (4.2)	55 (4.1)
Russian Federation	5 (1.4)	0 (0.0)	16 (2.8)	79 (2.4)
Singapore	89 (3.0)	1 (0.9)	10 (2.8)	0 (0.0)
Slovak Republic	6 (2.1)	0 (0.0)	26 (4.1)	68 (4.4)
Slovenia	85 (3.6)	4 (1.9)	11 (3.1)	0 (0.0)
South Africa	7 (1.9)	0 (0.5)	33 (4.0)	60 (4.2)
Thailand	17 (2.5)	0 (0.0)	31 (3.6)	52 (3.5)
Tunisia	1 (0.0)	0 (0.0)	86 (3.2)	13 (3.1)
Turkey	3 (1.3)	1 (0.7)	46 (3.9)	50 (4.1)
United States r	91 (3.1)	0 (0.0)	9 (2.8)	0 (0.0)
<b>International Avg.</b>	41 (0.5)	1 (0.2)	29 (0.6)	29 (0.5)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by schools.

† Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

An "r" indicates school response data available for 70-84% of students.

