

REFERENCE 1

Students' Backgrounds
and Attitudes Towards
Mathematics

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	Have All Three Educational Aids		Do Not Have All Three Educational Aids		Percentage of Students		
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Have Dictionary	Have Study Desk/Table for Own Use	Have Computer
Australia	82 (1.1)	533 (4.8)	18 (1.1)	492 (6.3)	99 (0.2)	95 (0.4)	86 (1.0)
Belgium (Flemish)	82 (1.2)	567 (3.3)	18 (1.2)	520 (8.6)	98 (0.7)	96 (0.6)	86 (1.0)
Bulgaria	21 (2.4)	546 (13.1)	79 (2.4)	502 (4.8)	89 (0.9)	87 (1.2)	23 (2.3)
Canada	78 (0.8)	537 (2.6)	22 (0.8)	510 (3.1)	98 (0.2)	91 (0.6)	85 (0.8)
Chile	21 (1.7)	442 (9.8)	79 (1.7)	381 (3.2)	97 (0.4)	78 (0.9)	23 (1.7)
Chinese Taipei	61 (1.1)	608 (3.8)	39 (1.1)	551 (4.4)	98 (0.2)	94 (0.4)	63 (1.0)
Cyprus	56 (0.8)	493 (2.6)	44 (0.8)	459 (2.6)	97 (0.3)	97 (0.3)	58 (0.9)
Czech Republic	43 (1.2)	541 (4.5)	57 (1.2)	504 (4.6)	94 (0.8)	91 (0.7)	47 (1.2)
England	79 (0.9)	507 (4.0)	21 (0.9)	461 (6.0)	98 (0.3)	92 (0.6)	85 (0.8)
Finland	71 (1.2)	528 (3.0)	29 (1.2)	501 (3.5)	89 (0.7)	97 (0.4)	79 (0.9)
Hong Kong, SAR	57 (1.3)	592 (4.1)	43 (1.3)	571 (4.9)	99 (0.1)	75 (0.9)	72 (1.3)
Hungary	48 (1.4)	562 (4.0)	52 (1.4)	504 (3.9)	95 (0.8)	95 (0.5)	50 (1.4)
Indonesia	6 (0.8)	468 (15.0)	94 (0.8)	400 (4.8)	86 (0.9)	84 (1.1)	7 (0.8)
Iran, Islamic Rep.	5 (0.7)	457 (9.5)	95 (0.7)	422 (3.1)	51 (1.5)	47 (2.2)	7 (0.8)
Israel	78 (1.5)	486 (3.2)	22 (1.5)	409 (6.2)	98 (0.3)	97 (0.3)	80 (1.5)
Italy	59 (1.1)	492 (4.0)	41 (1.1)	461 (4.2)	98 (0.3)	93 (0.6)	63 (1.0)
Japan	52 (1.0)	592 (2.3)	48 (1.0)	566 (2.3)	99 (0.1)	97 (0.2)	52 (0.9)
Jordan	16 (0.9)	469 (6.9)	84 (0.9)	425 (3.7)	80 (0.9)	73 (1.1)	23 (1.1)
Korea, Rep. of	65 (0.9)	602 (1.7)	35 (0.9)	561 (3.0)	99 (0.2)	96 (0.2)	67 (0.9)
Latvia (LSS)	14 (1.0)	537 (6.0)	86 (1.0)	500 (3.5)	94 (0.7)	98 (0.3)	15 (1.0)
Lithuania [‡]	15 (1.1)	529 (8.1)	85 (1.1)	474 (4.1)	86 (0.9)	95 (0.5)	16 (1.1)
Macedonia, Rep. of	18 (1.2)	484 (5.6)	82 (1.2)	442 (4.3)	83 (1.2)	87 (0.8)	21 (1.3)
Malaysia	28 (1.2)	563 (5.5)	72 (1.2)	503 (4.1)	99 (0.2)	87 (0.6)	31 (1.3)
Moldova	5 (0.6)	489 (11.8)	95 (0.6)	469 (3.8)	72 (1.3)	79 (0.9)	7 (0.7)
Morocco	6 (0.7)	357 (11.5)	94 (0.7)	339 (2.3)	71 (1.2)	52 (1.1)	9 (0.9)
Netherlands	94 (1.0)	543 (7.2)	6 (1.0)	509 (8.7)	100 (0.2)	99 (0.2)	96 (1.0)
New Zealand	67 (1.3)	512 (5.6)	33 (1.3)	453 (4.5)	97 (0.4)	90 (0.6)	72 (1.2)
Philippines	11 (0.9)	392 (14.9)	89 (0.9)	342 (5.9)	89 (0.7)	74 (1.0)	15 (0.9)
Romania	11 (0.8)	509 (10.2)	89 (0.8)	471 (5.1)	69 (1.6)	76 (1.4)	14 (1.0)
Russian Federation	19 (1.2)	537 (6.6)	81 (1.2)	524 (6.3)	88 (1.3)	92 (0.8)	22 (1.2)
Singapore	75 (1.4)	615 (6.1)	25 (1.4)	573 (7.1)	99 (0.2)	92 (0.5)	80 (1.3)
Slovak Republic	36 (1.3)	556 (5.2)	64 (1.3)	522 (3.7)	96 (0.5)	88 (0.8)	41 (1.3)
Slovenia	61 (1.2)	547 (2.8)	39 (1.2)	506 (3.6)	92 (0.6)	96 (0.3)	66 (1.2)
South Africa	8 (1.0)	415 (15.1)	92 (1.0)	265 (6.6)	75 (1.1)	56 (1.1)	11 (1.1)
Thailand	8 (0.6)	538 (9.2)	92 (0.6)	462 (5.1)	75 (1.2)	63 (1.5)	8 (0.7)
Tunisia	23 (1.3)	462 (3.5)	77 (1.3)	444 (2.6)	87 (1.0)	92 (0.6)	24 (1.3)
Turkey	8 (0.6)	471 (7.1)	92 (0.6)	426 (4.4)	89 (0.7)	69 (1.3)	10 (0.7)
United States	74 (1.3)	518 (3.7)	26 (1.3)	463 (4.3)	97 (0.3)	90 (0.5)	80 (1.2)
International Avg.	41 (0.2)	516 (1.2)	59 (0.2)	471 (0.8)	90 (0.1)	86 (0.1)	45 (0.2)

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

Background data provided by students.

[‡] 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.

Exhibit R1.2 Trends in Educational Aids in the Home

	Have All Three Educational Aids		Have Dictionary		Have Study Desk/ Table for Own Use		Have Computer	
	Percent of Students	1995 - 1999 Difference	Percent of Students	1995 - 1999 Difference	Percent of Students	1995 - 1999 Difference	Percent of Students	1995 - 1999 Difference
Australia	82 (1.1)	16 (1.6) ▲	99 (0.2)	11 (0.8) ▲	95 (0.4)	-2 (0.5) ▼	86 (1.0)	13 (1.5) ▲
Belgium (Flemish)	82 (1.2)	19 (1.8) ▲	98 (0.7)	0 (0.8) ●	96 (0.6)	-1 (0.8) ●	86 (1.0)	19 (1.6) ▲
Canada	78 (0.8)	21 (1.6) ▲	98 (0.2)	2 (0.4) ▲	91 (0.6)	2 (0.8) ●	85 (0.8)	24 (1.6) ▲
Cyprus	56 (0.8)	18 (1.2) ▲	97 (0.3)	0 (0.5) ●	97 (0.3)	1 (0.6) ●	58 (0.9)	19 (1.3) ▲
Czech Republic	43 (1.2)	11 (1.8) ▲	94 (0.8)	-1 (0.9) ●	91 (0.7)	2 (0.9) ●	47 (1.2)	11 (1.7) ▲
England	79 (0.9)	-1 (1.4) ●	98 (0.3)	0 (0.5) ●	92 (0.6)	2 (1.0) ●	85 (0.8)	-4 (1.2) ▼
Hong Kong, SAR	57 (1.3)	24 (2.2) ▲	99 (0.1)	0 (0.2) ●	75 (0.9)	-5 (1.4) ▼	72 (1.3)	33 (2.3) ▲
Hungary	--	--	--	--	95 (0.5)	3 (0.9) ▲	50 (1.4)	13 (1.8) ▲
Iran, Islamic Rep.	5 (0.7)	4 (0.8) ▲	51 (1.5)	-2 (2.1) ●	47 (2.2)	8 (3.0) ●	7 (0.8)	3 (1.0) ▲
Israel [†]	83 (1.7)	9 (2.7) ▲	99 (0.2)	-1 (0.3) ●	98 (0.2)	0 (0.5) ●	85 (1.8)	9 (2.7) ▲
Italy	58 (1.4)	-1 (2.1) ●	98 (0.4)	-1 (0.4) ●	93 (0.6)	-1 (1.0) ●	62 (1.3)	0 (2.0) ●
Japan	--	--	--	--	--	--	--	--
Korea, Rep. of	65 (0.9)	27 (1.5) ▲	99 (0.2)	0 (0.3) ●	96 (0.2)	1 (0.5) ●	67 (0.9)	27 (1.5) ▲
Latvia (LSS)	14 (1.0)	2 (1.3) ●	94 (0.7)	1 (0.9) ●	98 (0.3)	0 (0.5) ●	15 (1.0)	2 (1.3) ●
Lithuania	--	--	86 (0.9)	-2 (1.4) ●	95 (0.5)	1 (0.8) ●	--	--
Netherlands	94 (1.0)	11 (1.6) ▲	100 (0.2)	0 (0.2) ●	99 (0.2)	0 (0.3) ●	96 (1.0)	11 (1.6) ▲
New Zealand	67 (1.3)	11 (1.9) ▲	97 (0.4)	-2 (0.4) ▼	90 (0.6)	0 (0.8) ●	72 (1.2)	12 (1.8) ▲
Romania	11 (0.8)	3 (1.3) ●	69 (1.6)	9 (2.2) ▲	76 (1.4)	7 (1.9) ▲	14 (1.0)	-5 (1.5) ▼
Russian Federation	19 (1.2)	-11 (1.9) ▼	88 (1.3)	-1 (1.7) ●	92 (0.8)	-3 (1.1) ●	22 (1.2)	-13 (2.0) ▼
Singapore	75 (1.4)	28 (2.0) ▲	99 (0.2)	0 (0.2) ●	92 (0.5)	0 (0.7) ●	80 (1.3)	31 (2.0) ▲
Slovak Republic	36 (1.3)	9 (1.8) ▲	96 (0.5)	0 (0.7) ●	88 (0.8)	1 (1.1) ●	41 (1.3)	10 (1.8) ▲
Slovenia	61 (1.2)	18 (1.8) ▲	92 (0.6)	-2 (0.8) ●	96 (0.3)	3 (0.7) ▲	66 (1.2)	19 (1.8) ▲
Thailand [†]	8 (0.6)	4 (1.0) ▲	75 (1.2)	8 (2.4) ▲	63 (1.5)	-2 (2.6) ●	8 (0.7)	4 (1.1) ▲
United States	74 (1.3)	18 (2.1) ▲	97 (0.3)	0 (0.5) ●	90 (0.5)	0 (0.9) ●	80 (1.2)	21 (2.1) ▲
International Avg.[§]	53 (0.2)	10 (0.4) ▲	93 (0.1)	1 (0.2) ▲	90 (0.2)	1 (0.2) ▲	57 (0.2)	10 (0.4) ▲

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

- ▲ 1999 significantly higher than 1995
- No significant difference between 1995 and 1999
- ▼ 1999 significantly lower than 1995

Significance tests adjusted for multiple comparisons

Background data provided by students.

[†] Countries with unapproved sampling procedures at the classroom level in 1995.

[§] International average is for countries that participated and met sampling guidelines in both 1995 and 1999.

Trend notes: Because coverage fell below 65% in 1995 and 1999, Latvia is annotated LSS for Latvian-Speaking Schools only. Lithuania tested later in 1999 than in 1995, at the beginning of the next school year. In 1995, Italy and Israel were unable to cover their International Desired Population; 1999 data are based on their comparable populations.

Background data for Bulgaria and South Africa are unavailable for 1995.

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

A dash (-) indicates data are not available.

Exhibit R1.3 Number of Books in the Home

	Three or More Bookcases (More Than 200 Books)		About Two Bookcases (101-200 Books)		About One Bookcase (26-100 Books)		About One Shelf (11-25 Books)		None or Very Few (0-10 Books)	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Australia	38 (1.2)	544 (5.0)	27 (0.9)	526 (5.9)	24 (0.9)	511 (5.0)	7 (0.6)	498 (8.6)	3 (0.4)	479 (13.3)
Belgium (Flemish)	14 (0.8)	580 (5.1)	14 (0.6)	578 (7.3)	31 (1.3)	569 (6.1)	21 (0.7)	549 (5.1)	19 (1.3)	523 (4.9)
Bulgaria	37 (2.2)	544 (8.2)	19 (0.9)	513 (6.3)	24 (1.1)	499 (5.6)	12 (1.0)	466 (6.7)	9 (1.3)	457 (9.6)
Canada	31 (0.9)	543 (3.5)	24 (0.8)	536 (3.5)	28 (0.7)	527 (3.3)	11 (0.5)	507 (5.1)	5 (0.3)	510 (5.9)
Chile	9 (0.6)	442 (13.1)	11 (0.6)	424 (8.3)	28 (0.9)	414 (4.9)	32 (0.9)	374 (4.0)	20 (1.1)	355 (3.0)
Chinese Taipei	16 (0.8)	637 (5.8)	12 (0.5)	629 (5.7)	31 (0.7)	599 (4.4)	23 (0.7)	563 (4.0)	17 (0.9)	513 (4.4)
Cyprus	17 (0.8)	497 (4.3)	23 (0.9)	494 (3.9)	36 (1.0)	479 (2.6)	19 (0.9)	450 (4.0)	5 (0.5)	428 (9.2)
Czech Republic	28 (1.4)	539 (5.0)	30 (1.4)	532 (5.6)	34 (1.1)	506 (5.1)	7 (0.8)	472 (7.2)	1 (0.2)	--
England	26 (1.2)	537 (6.1)	23 (0.8)	505 (4.9)	32 (1.1)	488 (3.8)	13 (0.8)	456 (5.8)	7 (0.7)	438 (9.7)
Finland	22 (1.1)	538 (5.0)	22 (0.9)	527 (4.3)	39 (1.1)	521 (3.3)	14 (0.8)	492 (3.7)	4 (0.4)	483 (8.3)
Hong Kong, SAR	8 (0.5)	588 (8.8)	10 (0.5)	590 (7.4)	27 (0.7)	592 (4.3)	27 (0.7)	584 (5.0)	28 (0.9)	568 (4.3)
Hungary	38 (1.4)	564 (4.0)	21 (0.8)	548 (4.3)	25 (1.0)	513 (3.5)	12 (0.8)	467 (6.6)	3 (0.5)	429 (10.2)
Indonesia	5 (0.5)	406 (12.1)	5 (0.4)	430 (11.8)	26 (0.9)	421 (5.1)	39 (1.0)	395 (5.1)	26 (1.3)	399 (7.0)
Iran, Islamic Rep.	9 (0.7)	461 (7.2)	8 (0.7)	452 (6.8)	22 (0.6)	441 (4.5)	32 (0.8)	417 (3.1)	29 (1.4)	397 (3.2)
Israel	22 (1.3)	495 (4.9)	21 (0.8)	497 (5.2)	33 (1.0)	469 (4.7)	18 (0.9)	431 (5.2)	6 (0.5)	412 (9.8)
Italy	20 (0.9)	505 (5.6)	15 (0.7)	495 (4.9)	28 (0.9)	487 (4.5)	25 (0.9)	460 (5.4)	12 (0.8)	444 (7.0)
Japan	18 (0.7)	605 (4.6)	18 (0.6)	598 (4.0)	31 (0.7)	577 (2.7)	19 (0.6)	565 (4.3)	14 (0.6)	549 (4.8)
Jordan	10 (0.6)	462 (6.1)	10 (0.6)	467 (8.8)	28 (0.8)	448 (4.4)	31 (1.1)	423 (3.9)	21 (1.2)	395 (4.7)
Korea, Rep. of	20 (0.8)	625 (2.9)	23 (0.6)	605 (3.1)	36 (0.7)	581 (2.2)	10 (0.5)	550 (3.8)	10 (0.4)	527 (5.1)
Latvia (LSS)	47 (1.4)	525 (4.2)	25 (0.9)	501 (4.5)	21 (0.9)	483 (4.4)	6 (0.7)	455 (9.4)	1 (0.2)	--
Lithuania [†]	17 (1.0)	524 (5.8)	21 (1.0)	513 (4.8)	36 (1.2)	478 (4.3)	20 (1.1)	440 (5.9)	7 (0.8)	417 (7.4)
Macedonia, Rep. of	7 (0.7)	475 (8.7)	9 (0.6)	483 (7.2)	30 (1.2)	475 (5.0)	38 (1.3)	438 (4.5)	15 (1.3)	401 (8.4)
Malaysia	9 (0.7)	566 (6.8)	12 (0.6)	546 (5.8)	32 (0.9)	536 (5.0)	34 (0.9)	499 (3.9)	13 (0.8)	477 (4.8)
Moldova	9 (0.7)	497 (7.0)	11 (0.8)	498 (6.4)	28 (1.0)	482 (4.6)	33 (1.2)	462 (5.3)	20 (1.1)	445 (6.0)
Morocco	3 (0.3)	352 (18.8)	5 (0.4)	352 (8.6)	20 (1.0)	347 (6.3)	35 (0.9)	344 (6.1)	37 (1.7)	330 (6.9)
Netherlands	24 (1.8)	564 (8.5)	23 (1.2)	551 (8.1)	31 (1.1)	540 (8.2)	15 (1.4)	512 (9.6)	8 (1.4)	499 (11.1)
New Zealand	33 (1.1)	518 (6.3)	24 (0.8)	507 (5.7)	27 (0.8)	480 (5.6)	10 (0.7)	450 (6.6)	6 (0.5)	408 (9.1)
Philippines	5 (0.4)	358 (16.9)	5 (0.4)	376 (15.9)	15 (0.8)	378 (10.4)	33 (0.9)	353 (7.2)	41 (1.4)	325 (4.8)
Romania	15 (1.3)	517 (8.5)	15 (0.9)	509 (8.3)	32 (1.1)	476 (5.1)	24 (1.6)	450 (8.4)	14 (1.1)	431 (7.6)
Russian Federation	23 (1.5)	556 (6.3)	29 (1.1)	539 (5.5)	31 (1.3)	517 (5.3)	13 (1.0)	485 (9.0)	4 (0.5)	460 (16.2)
Singapore	12 (0.6)	618 (8.3)	14 (0.7)	627 (9.0)	40 (1.1)	613 (6.1)	22 (1.0)	586 (6.8)	12 (0.8)	572 (7.2)
Slovak Republic	17 (0.9)	565 (5.3)	24 (1.0)	554 (4.4)	43 (1.1)	528 (3.8)	14 (1.0)	490 (4.9)	2 (0.4)	--
Slovenia	14 (0.9)	561 (5.4)	20 (0.8)	555 (4.2)	46 (1.0)	530 (2.8)	16 (0.8)	488 (6.2)	4 (0.4)	479 (11.4)
South Africa	7 (0.5)	320 (16.8)	6 (0.5)	343 (17.8)	14 (0.8)	317 (10.4)	31 (0.8)	281 (6.6)	43 (1.6)	248 (9.6)
Thailand	6 (0.5)	504 (9.1)	8 (0.5)	488 (7.9)	27 (0.9)	486 (5.9)	37 (1.1)	459 (4.8)	22 (1.0)	443 (6.5)
Tunisia	9 (0.6)	462 (5.8)	9 (0.6)	468 (5.5)	25 (0.7)	459 (3.3)	36 (0.9)	438 (2.7)	21 (1.1)	438 (3.3)
Turkey	6 (0.4)	444 (8.6)	8 (0.5)	457 (6.5)	28 (0.8)	448 (6.0)	37 (0.8)	421 (4.7)	22 (1.1)	405 (5.2)
United States	28 (1.2)	537 (5.5)	22 (0.6)	523 (3.5)	29 (0.8)	495 (3.1)	14 (0.7)	461 (5.0)	8 (0.6)	439 (5.2)
International Avg.	18 (0.2)	515 (1.3)	16 (0.1)	509 (1.1)	29 (0.2)	492 (0.8)	22 (0.1)	464 (0.9)	14 (0.2)	443 (1.6)

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

Background data provided by students.

[†] 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.

A tilde (~) indicates insufficient data to report achievement.

Exhibit R1.4 Trends in Number of Books in the Home

	Two or More Bookcases (More Than 100 Books)		About One Bookcase (26-100 Books)		About One Shelf or Fewer (0-25 Books)	
	Percent of Students 1999	1995 - 1999 Difference	Percent of Students 1999	1995 - 1999 Difference	Percent of Students 1999	1995 - 1999 Difference
Australia	65 (1.3)	-2 (1.9) ●	24 (0.9)	1 (1.3) ●	11 (0.8)	1 (1.1) ●
Belgium (Flemish)	28 (1.0)	-11 (1.7) ▼	31 (1.3)	-2 (1.7) ●	41 (1.6)	13 (2.3) ▲
Canada	56 (1.1)	-2 (1.7) ●	28 (0.7)	0 (1.3) ●	16 (0.6)	2 (1.0) ●
Cyprus	40 (1.0)	-2 (1.5) ●	36 (1.0)	2 (1.3) ●	24 (1.0)	0 (1.5) ●
Czech Republic	58 (1.5)	-8 (2.4) ▼	34 (1.1)	4 (1.9) ●	8 (0.8)	4 (1.0) ▲
England	49 (1.6)	-5 (2.3) ●	32 (1.1)	5 (1.7) ●	19 (1.1)	0 (1.5) ●
Hong Kong, SAR	17 (0.8)	-3 (1.6) ●	27 (0.7)	-2 (1.2) ●	55 (1.2)	4 (1.9) ●
Hungary	60 (1.5)	-4 (2.1) ●	25 (1.0)	1 (1.4) ●	15 (1.1)	3 (1.4) ●
Iran, Islamic Rep.	16 (1.3)	3 (1.6) ●	22 (0.6)	5 (1.1) ▲	62 (1.6)	-8 (2.2) ▼
Israel †	44 (1.9)	-7 (3.3) ●	34 (1.1)	2 (2.3) ●	23 (1.3)	5 (1.9) ●
Italy	34 (1.5)	-8 (2.2) ▼	28 (1.2)	-4 (1.8) ●	38 (1.5)	12 (1.9) ▲
Japan	--	--	--	--	--	--
Korea, Rep. of	44 (1.0)	-1 (1.6) ●	36 (0.7)	3 (1.2) ●	20 (0.7)	-2 (1.2) ●
Latvia (LSS)	72 (1.3)	-6 (1.8) ▼	21 (0.9)	4 (1.3) ▲	8 (0.8)	2 (1.0) ●
Lithuania	38 (1.6)	-6 (2.1) ▼	36 (1.2)	0 (1.7) ●	26 (1.6)	6 (1.9) ▲
Netherlands	47 (2.6)	5 (3.3) ●	31 (1.1)	-3 (1.7) ●	23 (2.3)	-2 (2.8) ●
New Zealand	56 (1.3)	-9 (1.8) ▼	27 (0.8)	3 (1.2) ●	16 (1.0)	6 (1.3) ▲
Romania	30 (1.8)	-5 (2.7) ●	32 (1.1)	12 (1.4) ▲	38 (2.0)	-8 (2.8) ●
Russian Federation	53 (2.0)	2 (2.7) ●	31 (1.3)	-5 (1.8) ●	17 (1.3)	3 (1.6) ●
Singapore	26 (1.2)	0 (1.8) ●	40 (1.1)	-1 (1.4) ●	34 (1.5)	1 (2.0) ●
Slovak Republic	41 (1.5)	-1 (2.1) ●	43 (1.1)	-2 (1.5) ●	16 (1.2)	3 (1.4) ●
Slovenia	34 (1.3)	-10 (1.9) ▼	46 (1.0)	7 (1.6) ▲	20 (1.1)	2 (1.4) ●
Thailand †	15 (0.7)	-3 (1.6) ●	27 (0.9)	-7 (1.5) ▼	59 (1.3)	10 (2.4) ▲
United States	50 (1.4)	-2 (2.2) ●	29 (0.8)	0 (1.2) ●	22 (1.1)	1 (1.8) ●
International Avg. §	43 (0.3)	-4 (0.4) ▼	31 (0.2)	1 (0.3) ▲	26 (0.3)	2 (0.4) ▲

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

▲	1999 significantly higher than 1995
●	No significant difference between 1995 and 1999
▼	1999 significantly lower than 1995
Significance tests adjusted for multiple comparisons	

Background data provided by students.

† Countries with unapproved sampling procedures at the classroom level in 1995.

§ International average is for countries that participated and met sampling guidelines in both 1995 and 1999.

Trend notes: Because coverage fell below 65% in 1995 and 1999, Latvia is annotated LSS for Latvian-Speaking Schools only. Lithuania tested later in 1999 than in 1995, at the beginning of the next school year. In 1995, Italy and Israel were unable to cover their International Desired Population; 1999 data are based on their comparable populations.

Background data for Bulgaria and South Africa are unavailable for 1995.

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

A dash (–) indicates data are not available.

Exhibit R1.5 Highest Level of Education of Either Parent*

	Finished University ¹		Finished Upper Secondary School But Not University ²		Finished Primary School But Not Upper Secondary School ³		Did Not Finish Primary School ⁴		Do Not Know	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Australia	28 (1.8)	563 (5.0)	30 (1.1)	528 (5.7)	21 (1.1)	512 (5.5)	0 (0.1)	~ ~	21 (1.0)	499 (6.5)
Belgium (Flemish)	16 (1.0)	595 (6.9)	45 (0.9)	568 (3.8)	10 (0.7)	540 (6.3)	0 (0.1)	~ ~	29 (1.0)	534 (4.2)
Bulgaria	34 (2.9)	541 (10.3)	51 (2.4)	502 (4.4)	7 (0.8)	460 (7.4)	1 (0.2)	~ ~	7 (0.7)	490 (11.7)
Canada	45 (1.3)	543 (3.5)	34 (1.0)	530 (2.8)	6 (0.5)	509 (8.1)	0 (0.1)	~ ~	15 (0.7)	506 (4.0)
Chile ^r	14 (1.4)	470 (11.5)	30 (1.2)	415 (5.4)	34 (1.4)	366 (3.1)	13 (0.8)	351 (6.2)	10 (0.6)	376 (6.5)
Chinese Taipei	15 (1.0)	635 (6.5)	64 (0.8)	590 (3.8)	14 (0.7)	550 (4.8)	1 (0.1)	~ ~	7 (0.4)	527 (7.5)
Cyprus	22 (0.7)	513 (4.3)	48 (0.9)	484 (2.3)	26 (0.9)	444 (3.2)	1 (0.2)	~ ~	3 (0.3)	448 (8.7)
Czech Republic	22 (1.2)	555 (6.2)	46 (1.3)	527 (4.5)	21 (1.2)	503 (5.5)	0 (0.0)	~ ~	11 (0.9)	480 (7.1)
England	--	--	--	--	--	--	--	--	--	--
Finland	7 (0.8)	559 (5.8)	28 (1.1)	538 (3.9)	11 (0.7)	503 (5.4)	3 (0.4)	508 (8.9)	51 (1.5)	515 (3.4)
Hong Kong, SAR	7 (0.7)	607 (8.5)	38 (1.0)	591 (4.3)	32 (0.9)	583 (4.2)	9 (0.7)	558 (7.6)	13 (0.6)	568 (5.7)
Hungary	27 (1.4)	583 (4.9)	59 (1.3)	525 (3.2)	7 (0.7)	462 (7.0)	0 (0.0)	~ ~	7 (0.7)	491 (9.4)
Indonesia	9 (0.9)	450 (12.8)	30 (1.2)	431 (5.5)	44 (1.4)	385 (5.0)	10 (0.6)	385 (8.3)	7 (0.6)	391 (9.3)
Iran, Islamic Rep.	8 (1.1)	469 (7.7)	17 (1.4)	455 (6.0)	48 (1.5)	421 (3.0)	25 (1.5)	402 (3.8)	2 (0.2)	~ ~
Israel	34 (1.6)	507 (4.9)	42 (1.3)	469 (3.4)	10 (0.6)	428 (7.3)	3 (0.7)	356 (23.6)	11 (1.0)	442 (9.6)
Italy	10 (0.8)	513 (6.4)	45 (1.3)	499 (3.6)	40 (1.5)	455 (4.5)	2 (0.3)	~ ~	3 (0.4)	453 (12.0)
Japan	--	--	--	--	--	--	--	--	--	--
Jordan	29 (1.1)	467 (6.3)	34 (1.0)	435 (4.3)	23 (0.9)	401 (5.8)	5 (0.5)	383 (10.1)	8 (0.7)	405 (7.7)
Korea, Rep. of	25 (1.0)	620 (2.5)	48 (0.8)	587 (2.7)	14 (0.5)	566 (3.2)	5 (0.4)	559 (6.1)	8 (0.4)	545 (4.3)
Latvia (LSS)	29 (1.5)	538 (5.1)	42 (1.3)	509 (3.9)	7 (0.7)	456 (9.7)	0 (0.1)	~ ~	21 (1.3)	481 (5.0)
Lithuania [†]	29 (1.6)	523 (5.8)	54 (1.5)	476 (3.9)	4 (0.6)	436 (11.9)	0 (0.1)	~ ~	13 (0.9)	449 (7.5)
Macedonia, Rep. of	18 (1.2)	507 (6.8)	51 (1.2)	465 (4.1)	24 (1.5)	395 (7.5)	3 (0.6)	383 (18.8)	3 (0.4)	411 (9.8)
Malaysia	12 (0.9)	569 (6.6)	44 (0.9)	525 (4.8)	29 (1.0)	506 (5.1)	3 (0.3)	496 (8.4)	12 (0.9)	489 (6.4)
Moldova	28 (1.5)	493 (5.8)	49 (1.6)	471 (4.9)	8 (0.8)	460 (9.5)	1 (0.1)	~ ~	14 (1.2)	445 (6.4)
Morocco ^r	7 (0.7)	366 (11.6)	14 (0.8)	356 (6.2)	27 (0.9)	341 (7.7)	42 (1.9)	330 (4.3)	9 (0.7)	337 (8.6)
Netherlands	12 (1.1)	572 (9.8)	53 (2.4)	553 (6.8)	7 (1.0)	518 (12.6)	1 (0.5)	~ ~	27 (2.1)	516 (9.1)
New Zealand	28 (1.4)	531 (6.2)	34 (0.7)	486 (5.3)	12 (0.7)	475 (5.9)	0 (0.1)	~ ~	25 (1.1)	467 (6.1)
Philippines	30 (1.5)	385 (9.8)	37 (0.9)	341 (6.8)	25 (1.1)	327 (7.4)	5 (0.4)	304 (11.1)	4 (0.4)	331 (12.8)
Romania	20 (1.7)	516 (9.1)	49 (1.6)	484 (5.1)	17 (1.6)	459 (7.7)	3 (0.5)	419 (17.8)	11 (0.9)	432 (9.5)
Russian Federation	33 (1.4)	551 (6.4)	47 (1.2)	522 (6.4)	5 (0.5)	488 (10.2)	1 (0.2)	~ ~	14 (0.9)	504 (6.1)
Singapore	11 (1.0)	652 (8.4)	51 (1.0)	608 (5.8)	23 (1.0)	589 (6.9)	4 (0.3)	579 (9.2)	12 (0.6)	588 (7.0)
Slovak Republic	22 (1.5)	578 (4.7)	64 (1.3)	529 (3.8)	6 (0.7)	488 (8.9)	0 (0.1)	~ ~	8 (0.7)	492 (5.7)
Slovenia	19 (0.9)	573 (5.1)	65 (1.0)	528 (2.8)	10 (0.7)	495 (6.1)	1 (0.2)	~ ~	5 (0.5)	492 (9.9)
South Africa	15 (1.1)	323 (12.9)	30 (1.3)	293 (9.4)	32 (1.1)	256 (6.2)	11 (1.2)	225 (9.1)	12 (0.9)	266 (9.7)
Thailand	9 (0.9)	539 (10.2)	13 (0.8)	495 (6.5)	40 (1.3)	466 (5.4)	30 (1.5)	448 (6.2)	9 (0.7)	447 (6.9)
Tunisia	10 (0.8)	477 (4.6)	28 (1.1)	455 (3.1)	41 (1.3)	443 (2.8)	14 (0.9)	431 (3.7)	6 (0.9)	439 (6.3)
Turkey	9 (0.8)	486 (7.6)	20 (1.0)	447 (5.8)	60 (1.3)	419 (3.5)	10 (0.7)	416 (8.4)	2 (0.2)	~ ~
United States	35 (1.7)	535 (4.9)	46 (1.3)	496 (3.2)	5 (0.4)	456 (5.4)	1 (0.2)	~ ~	13 (0.7)	468 (5.6)
International Avg.	20 (0.2)	525 (1.4)	41 (0.2)	492 (0.8)	21 (0.2)	460 (1.1)	6 (0.1)	418 (3.0)	12 (0.1)	463 (1.3)

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

Background data provided by students

* Response categories were defined by each country to conform to their own educational system and may not be strictly comparable across countries. See reference exhibit R1.6 for country modifications to the definitions of educational levels.

¹ In most countries, defined as completion of at least a 4-year degree program at a university or an equivalent institute of higher education.

² Finished upper secondary school with or without some tertiary education not equivalent to a university degree. In most countries, finished secondary corresponds to completion of an upper-secondary track terminating after 11 to 13 years of schooling (ISCED level 3 vocational, apprenticeship or academic tracks).

³ Finished primary school or attended some secondary school not equivalent to completion of upper secondary.

⁴ Some primary school or did not go to school.

[†] 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.

A dash (–) indicates data are not available. A tilde (~) indicates insufficient data to report achievement.

An "r" indicates a 70-84% student response rate.



Exhibit R1.6 Overleaf

Exhibit R1.6 Country Modifications to the Definitions of Educational Levels for Parents' Education or Students' Expectations for Finishing School*

Internationally Defined Level	Finished University	Finished Upper Secondary School But Not University	
		Post-Secondary Level	Upper-Secondary Level ¹
	Finished University	Some Vocational-Technical Education After Secondary School or Some University	Finished Secondary School
Australia [§]			
Belgium (Flemish) [§]		Post-Secondary Tertiary Higher Education Outside University or Some Years of University	Finish Higher Secondary School
Canada	Finish University or College	Some Vocational-Technical Education After Secondary School or Some University or College	
Chile			
Cyprus [§]	University Degree		Finish Upper Secondary
Czech Republic (P) ^{§†}	Finish University (4-5 years university study)	Some Vocational-Technical Education After Secondary School or Some University	Vocational Training or Secondary With Maturita
Czech Republic (S)	Finish University (4-5 years university study)	Medium-cycle higher education or bachelor studies (3 years university study or special higher education)	Vocational Training or Secondary With Maturita
Finland			Finish secondary school (about 12 years)
Hungary [§]	University or College Degree	Not Included	Apprenticeship (3-year trade school) or Final Exam in Secondary School (4-year academic/vocational)
Indonesia	Completed University Degree (Sarjana 1/2/3)	Academy (3 years or less of higher education outside university - Diploma D1/D2/D3) or Some University (Did Not Complete Degree)	Finish Secondary (SMP, SMA, SMEA, STM, etc.)
Italy [§]	Finish University (Laurea or Dottorato di Ricerca; 4-6 Year Diploma)	Vocational/Professional Course After Secondary Diploma or Some University (2-3 Year Short-Course Diploma)	Finish Secondary School With Maturita (Classical/Technical) or Vocational Training Diploma
Japan (S) [‡]	University or Graduate School	Vocational/Technical Education After Secondary or 2-year college	Upper secondary
Korea, Rep. of [§]			
Latvia (LSS) [§]	Higher Education (5 years)	Vocational School (Post-Secondary) or Technikum (3 years) or Some Higher Education	Finish Secondary or Vocational School (11 years)
Lithuania [§]	University or Other Higher Education	Vocational or Agricultural School or College (Technical, Art, Music)	
Netherlands	University With Diploma	Vocational/Technical Education After Secondary (bv, hbo, hts, pedagogical academy) or Some Years At University (Without Diploma)	Finish Secondary School With Diploma
New Zealand (P) [†]	University or Teachers' College (College of Education)	Vocational/Polytechnic Education After Secondary School or Some University	Complete Form 6 or Form 7
New Zealand (S) [§]	University, College of Education (teacher training) or degree or national diploma course at polytech	Certificate course at polytech (e.g., trade certificate) or some university	Finish secondary school (complete Form 6 or Form 7)
Philippines [§]	Finish College/University	Some Vocational/Technical Education After High School or Some College/University	Finish High School
Romania [§]	Finish University (facultate)	Post-Secondary Technical School or Did Not Complete University	Finish Senior Secondary (liceu)
Singapore [§]		Finish JC/Pre-U or Polytechnic or Some Other Vocational/Technical Education After Secondary (e.g., ITE, VITB) [includes GCE 'A' level, which is 2 years additional schooling beyond completion of secondary.]	Finish Secondary School
Slovenia (S) ^{§†}			Finish gymnasium or secondary school
South Africa [§]		Finish Technikon or Some University	Finish Secondary
Thailand [§]	Graduate level (Finish Tertiary Education, 4 years)	Diploma/Undergraduate Level (higher certificate, 2 years)	Finish Academic or Vocational/Technical Upper-Secondary Track
Tunisia	Bachelor's Degree (BA)		
United States (P) [†]	Completed Bachelor's Degree at College or University	Some Vocational-Technical Education After Secondary School or Some Community College, College or University Courses	Finish High School
United States (S) [§]	Finish community college, college or university	Some Vocational-Technical Education After Secondary School or Some Community College, College or University Courses	Finish High School

■ National educational level is the same as the internationally-defined level

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

* Educational levels were translated and defined in most countries to be comparable to the internationally-defined levels. Countries that used modified response options to conform to their national education systems are indicated to aid in the interpretation of the reporting categories in exhibits 4.4 and R1.5. National modifications pertain to both the parents' education and students' expectations questions unless otherwise indicated.

¹ Upper-secondary corresponds to ISCED level 3 tracks terminating after 11 to 13 years in most countries. (Education at a Glance, OECD, 1995.)

² Primary school or lower educational levels were included only in the parents' education question.

³ Japan administered the question pertaining to students' expectations but not the question pertaining to parents' education.

[§] Some educational levels modified from 1995.

[†] Educational levels differ for the parents' education (P) question and the students' expectations (S) question.

Finished Primary School But Not Upper Secondary School		Did Not Finish Primary School ²	Internationally Defined Level
Lower-Secondary Level	Primary Level ²		
Finished Some Secondary School	Finished Primary School	Some Primary School or Did Not Go to School	Australia
		Less Than Year 6 in Primary School	Australia
Finish Lower Secondary School	Finish Basic School	Some Years of Basic School or Did Not Go to School	Belgium (Flemish)
			Canada
	Finish Primary School (grade 8)		Chile
Finish Lower Secondary (Gymnasium - grade 9)			Cyprus
Vocational Training or Secondary School Without Maturita		Not Included	Czech Republic (P)
Vocational Training or Secondary School Without Maturita			Czech Republic (S)
Some Secondary School (10 - 11 years)	Finish Primary School (about 9 years)	Did Not Go to School, Primary School or Part of Lower Secondary (< 9 years)	Finland
Finish General School (grade 8)	Some General School	Not Included	Hungary
	Finish Primary School (SD)		Indonesia
Finish Middle School			Italy
Lower Secondary			Japan (S)
Some High School	Finish Middle School	Some middle school or did not go to school	Korea, Rep. of
			Latvia (LSS)
	Finish Basic School (grade 10)	Some Basic School or Did Not Go to School	Lithuania
Some Years of Secondary School (mavo, havo, vwo) without Diploma	Finish Primary School (grade 8)		Netherlands
			New Zealand (P)
			New Zealand (S)
Some High School	Finish Elementary School	Some Elementary School or Did Not Go to School	Philippines
Did Not Complete Senior Secondary	Finish Junior Secondary (Gymnasium - grade 8)	Did Not Finish Grade 8 or Did Not Go to School	Romania
			Singapore
			Slovenia (S)
			South Africa
Finish Lower Secondary School	Finish Upper Primary School	Finish Lower Primary School or Did Not Go to School	Thailand
			Tunisia
Some High School	Finish Elementary School	Finish elementary school or did not go to school	United States (P)
Some High School			United States (S)

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

■ National educational level is the same as the internationally-defined level

Exhibit R1.7 Students' Perception of the Importance of Various Activities

	Percentage of Students Agreeing That It Is Important to Do Each Activity				
	Do Well in Mathematics	Do Well in Science	Do Well in Language	Have Time to Have Fun	Be Good at Sports
Australia	97 (0.3)	92 (0.6)	97 (0.4)	99 (0.2)	83 (0.8)
Belgium (Flemish)	98 (0.3)	91 (0.8)	96 (0.4)	98 (0.4)	77 (0.9)
Bulgaria	96 (0.6)	91 (0.8)	96 (0.5)	96 (0.5)	83 (1.0)
Canada	98 (0.2)	95 (0.4)	97 (0.5)	99 (0.2)	82 (0.6)
Chile	99 (0.2)	98 (0.2)	98 (0.2)	98 (0.3)	95 (0.4)
Chinese Taipei	89 (0.5)	89 (0.5)	89 (0.5)	99 (0.1)	94 (0.3)
Cyprus	96 (0.3)	91 (0.5)	96 (0.3)	97 (0.3)	90 (0.5)
Czech Republic	98 (0.3)	93 (0.6)	97 (0.4)	97 (0.4)	82 (1.0)
England	99 (0.2)	97 (0.3)	99 (0.2)	98 (0.3)	79 (0.9)
Finland	93 (0.6)	84 (0.9)	91 (0.6)	96 (0.4)	82 (1.0)
Hong Kong, SAR	95 (0.4)	86 (0.7)	96 (0.4)	97 (0.3)	84 (0.6)
Hungary	97 (0.3)	87 (0.6)	97 (0.4)	96 (0.4)	68 (0.9)
Indonesia	97 (0.3)	98 (0.2)	98 (0.2)	71 (1.0)	96 (0.3)
Iran, Islamic Rep.	96 (0.4)	96 (0.3)	94 (0.5)	89 (0.6)	93 (0.5)
Israel	98 (0.3)	90 (0.7)	92 (0.6)	96 (0.4)	86 (0.7)
Italy	97 (0.4)	94 (0.5)	97 (0.3)	98 (0.3)	89 (0.6)
Japan	88 (0.5)	83 (0.7)	89 (0.6)	99 (0.2)	82 (0.6)
Jordan	96 (0.4)	97 (0.3)	95 (0.4)	87 (0.7)	89 (0.5)
Korea, Rep. of	90 (0.4)	87 (0.5)	89 (0.4)	92 (0.3)	88 (0.5)
Latvia (LSS)	98 (0.3)	86 (0.9)	98 (0.3)	97 (0.3)	88 (0.7)
Lithuania †	97 (0.4)	84 (1.0)	98 (0.3)	96 (0.4)	92 (0.6)
Macedonia, Rep. of	95 (0.4)	96 (0.4)	97 (0.3)	94 (0.5)	95 (0.4)
Malaysia	99 (0.1)	99 (0.1)	99 (0.2)	78 (1.0)	93 (0.5)
Moldova	93 (0.7)	95 (0.6)	95 (0.4)	92 (0.7)	91 (0.5)
Morocco	r 91 (0.5)	r 92 (0.6)	r 90 (0.5)	r 65 (1.1)	r 91 (0.5)
Netherlands	98 (0.3)	94 (0.9)	99 (0.3)	98 (0.3)	76 (1.5)
New Zealand	97 (0.3)	93 (0.5)	97 (0.3)	98 (0.2)	86 (0.8)
Philippines	91 (0.6)	93 (0.5)	90 (0.8)	78 (1.0)	87 (0.7)
Romania	97 (0.4)	94 (0.6)	98 (0.3)	91 (0.8)	83 (1.0)
Russian Federation	97 (0.4)	96 (0.3)	97 (0.4)	98 (0.3)	90 (0.6)
Singapore	99 (0.2)	98 (0.2)	100 (0.1)	93 (0.6)	90 (0.5)
Slovak Republic	99 (0.2)	96 (0.5)	99 (0.2)	99 (0.2)	91 (0.7)
Slovenia	91 (0.6)	80 (0.9)	92 (0.5)	97 (0.3)	87 (0.7)
South Africa	90 (0.5)	89 (1.3)	91 (0.6)	72 (1.1)	83 (0.7)
Thailand	95 (0.3)	96 (0.3)	97 (0.3)	92 (0.5)	95 (0.3)
Tunisia	96 (0.5)	97 (0.3)	96 (0.3)	83 (0.7)	91 (0.5)
Turkey	96 (0.3)	97 (0.3)	97 (0.2)	75 (1.0)	86 (0.6)
United States	97 (0.3)	96 (0.3)	96 (0.3)	99 (0.2)	84 (0.6)
International Avg.	96 (0.1)	92 (0.1)	96 (0.1)	92 (0.1)	87 (0.1)

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

Background data provided by students.

† 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 a 70-84% student response rate.

	Percentage of Students Agreeing That Their Mothers Think It Is Important to Do Each Activity				
	Do Well in Mathematics	Do Well in Science	Do Well in Language	Have Time to Have Fun	Be Good at Sports
Australia	98 (0.2)	96 (0.4)	98 (0.3)	95 (0.5)	78 (0.7)
Belgium (Flemish)	97 (0.4)	92 (0.6)	97 (0.5)	96 (0.5)	66 (1.6)
Bulgaria	97 (0.3)	92 (0.6)	96 (0.6)	90 (0.7)	79 (1.3)
Canada	99 (0.1)	98 (0.3)	99 (0.2)	96 (0.4)	76 (0.8)
Chile	99 (0.2)	98 (0.2)	99 (0.2)	93 (0.5)	95 (0.4)
Chinese Taipei	95 (0.5)	95 (0.4)	93 (0.4)	95 (0.3)	91 (0.4)
Cyprus	96 (0.4)	92 (0.5)	97 (0.3)	95 (0.4)	85 (0.8)
Czech Republic	99 (0.2)	96 (0.5)	99 (0.3)	90 (0.7)	72 (1.1)
England	99 (0.2)	98 (0.3)	99 (0.2)	94 (0.5)	74 (1.0)
Finland	96 (0.4)	90 (0.7)	95 (0.4)	88 (0.7)	74 (1.1)
Hong Kong, SAR	96 (0.3)	87 (0.7)	97 (0.3)	82 (0.7)	73 (0.9)
Hungary	97 (0.4)	86 (0.7)	97 (0.3)	83 (0.8)	46 (1.1)
Indonesia	97 (0.3)	98 (0.3)	98 (0.2)	65 (1.0)	95 (0.4)
Iran, Islamic Rep.	94 (0.4)	94 (0.5)	93 (0.5)	82 (0.8)	89 (0.6)
Israel	98 (0.2)	94 (0.5)	96 (0.3)	94 (0.4)	83 (0.8)
Italy	99 (0.3)	97 (0.3)	99 (0.2)	95 (0.4)	84 (0.8)
Japan	92 (0.5)	87 (0.6)	92 (0.5)	94 (0.4)	82 (0.6)
Jordan	95 (0.4)	96 (0.3)	95 (0.5)	82 (0.8)	86 (0.7)
Korea, Rep. of	95 (0.3)	90 (0.4)	92 (0.4)	66 (0.7)	78 (0.6)
Latvia (LSS)	98 (0.4)	90 (0.7)	98 (0.3)	90 (0.7)	82 (0.7)
Lithuania [†]	95 (0.5)	80 (1.0)	97 (0.4)	85 (0.8)	86 (0.8)
Macedonia, Rep. of	96 (0.3)	97 (0.3)	97 (0.3)	91 (0.7)	91 (0.6)
Malaysia	99 (0.1)	98 (0.2)	98 (0.2)	66 (1.2)	90 (0.5)
Moldova	91 (0.6)	91 (0.6)	93 (0.6)	85 (0.9)	86 (0.7)
Morocco	r 88 (0.7)	r 86 (0.7)	r 88 (0.6)	r 53 (1.2)	r 86 (0.7)
Netherlands	98 (0.3)	94 (0.8)	98 (0.3)	97 (0.5)	59 (1.9)
New Zealand	98 (0.2)	96 (0.3)	98 (0.2)	95 (0.4)	84 (0.9)
Philippines	90 (0.7)	93 (0.5)	89 (0.8)	75 (0.8)	85 (0.6)
Romania	97 (0.5)	96 (0.7)	98 (0.4)	79 (1.0)	75 (1.5)
Russian Federation	96 (0.4)	96 (0.4)	97 (0.4)	92 (0.4)	86 (0.7)
Singapore	99 (0.2)	98 (0.2)	98 (0.2)	76 (0.9)	80 (0.7)
Slovak Republic	99 (0.2)	98 (0.3)	99 (0.2)	96 (0.4)	89 (0.8)
Slovenia	91 (0.5)	83 (0.8)	94 (0.5)	89 (0.6)	82 (0.9)
South Africa	89 (0.6)	89 (1.2)	91 (0.6)	70 (1.0)	81 (0.8)
Thailand	94 (0.4)	96 (0.3)	97 (0.3)	80 (0.7)	93 (0.4)
Tunisia	92 (0.7)	96 (0.3)	94 (0.4)	72 (0.7)	87 (0.5)
Turkey	94 (0.5)	95 (0.4)	95 (0.4)	67 (1.0)	79 (0.9)
United States	98 (0.2)	98 (0.2)	98 (0.2)	93 (0.4)	76 (0.6)
International Avg.	96 (0.1)	93 (0.1)	96 (0.1)	85 (0.1)	81 (0.1)

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

Background data provided by students.

[†] 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 a 70-84% student response rate.

Exhibit R1.9 Students' Perception of Their Friends' View of the Importance of Various Activities

	Percentage of Students Agreeing That Their Friends Think It Is Important To Do Each Activity				
	Do Well in Mathematics	Do Well in Science	Do Well in Language	Have Time to Have Fun	Be Good at Sports
Australia	79 (1.0)	65 (1.4)	78 (1.0)	98 (0.2)	81 (0.8)
Belgium (Flemish)	81 (1.1)	66 (1.2)	77 (1.4)	98 (0.5)	76 (1.1)
Bulgaria	84 (0.8)	70 (1.7)	85 (0.9)	96 (0.4)	82 (1.2)
Canada	84 (0.6)	72 (0.9)	82 (0.7)	99 (0.1)	84 (0.9)
Chile	94 (0.3)	89 (0.6)	94 (0.4)	98 (0.3)	95 (0.4)
Chinese Taipei	84 (0.7)	82 (0.7)	84 (0.6)	98 (0.2)	94 (0.4)
Cyprus	87 (0.6)	75 (0.9)	88 (0.6)	94 (0.4)	89 (0.5)
Czech Republic	84 (0.9)	68 (1.0)	83 (0.8)	97 (0.4)	83 (0.9)
England	90 (0.8)	84 (1.0)	90 (0.7)	99 (0.2)	80 (1.0)
Finland	70 (1.2)	53 (1.2)	65 (1.2)	97 (0.4)	74 (1.2)
Hong Kong, SAR	84 (0.7)	66 (1.0)	87 (0.8)	96 (0.3)	83 (0.8)
Hungary	80 (0.9)	62 (0.9)	79 (1.0)	94 (0.5)	62 (1.0)
Indonesia	96 (0.2)	96 (0.3)	97 (0.3)	69 (1.0)	95 (0.4)
Iran, Islamic Rep.	92 (0.5)	90 (0.5)	89 (0.8)	87 (0.6)	92 (0.5)
Israel	92 (0.5)	68 (1.2)	79 (0.9)	96 (0.4)	81 (0.9)
Italy	80 (0.9)	66 (1.3)	84 (0.7)	98 (0.3)	94 (0.5)
Japan	85 (0.6)	78 (0.8)	85 (0.8)	99 (0.2)	80 (0.7)
Jordan	93 (0.5)	95 (0.4)	93 (0.4)	85 (0.7)	88 (0.6)
Korea, Rep. of	77 (0.7)	72 (0.8)	73 (0.8)	93 (0.3)	80 (0.8)
Latvia (LSS)	87 (0.9)	53 (1.6)	87 (0.8)	96 (0.4)	85 (0.7)
Lithuania †	87 (1.0)	54 (1.4)	88 (0.8)	96 (0.4)	90 (0.7)
Macedonia, Rep. of	89 (0.6)	86 (0.7)	92 (0.5)	93 (0.6)	93 (0.5)
Malaysia	99 (0.2)	98 (0.2)	97 (0.3)	77 (1.0)	91 (0.5)
Moldova	91 (0.7)	90 (0.7)	93 (0.6)	93 (0.5)	90 (0.6)
Morocco	r 88 (0.7)	r 86 (0.6)	r 86 (0.6)	r 63 (1.0)	r 89 (0.5)
Netherlands	88 (1.0)	79 (1.2)	90 (0.9)	98 (0.4)	70 (1.9)
New Zealand	76 (0.9)	67 (1.1)	75 (0.8)	97 (0.4)	86 (0.7)
Philippines	88 (0.7)	91 (0.6)	87 (0.7)	79 (0.9)	86 (0.7)
Romania	90 (0.9)	84 (1.2)	92 (0.6)	92 (0.9)	83 (1.0)
Russian Federation	89 (0.6)	83 (0.7)	89 (0.6)	97 (0.4)	87 (0.8)
Singapore	96 (0.3)	94 (0.6)	97 (0.3)	93 (0.6)	88 (0.6)
Slovak Republic	88 (0.9)	78 (1.2)	89 (0.7)	99 (0.2)	93 (0.6)
Slovenia	69 (1.2)	44 (1.4)	70 (1.1)	96 (0.3)	85 (0.9)
South Africa	88 (0.6)	85 (1.1)	90 (0.6)	72 (1.1)	81 (0.7)
Thailand	94 (0.4)	95 (0.4)	96 (0.3)	93 (0.4)	95 (0.4)
Tunisia	91 (0.7)	88 (0.6)	91 (0.6)	81 (0.7)	88 (0.5)
Turkey	93 (0.3)	93 (0.4)	94 (0.3)	77 (0.8)	85 (0.7)
United States	79 (0.8)	72 (0.8)	76 (1.0)	98 (0.2)	86 (0.5)
International Avg.	86 (0.1)	77 (0.2)	86 (0.1)	92 (0.1)	85 (0.1)

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

Background data provided by students.

† 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 a 70-84% student response rate.

	Percentage of Students Reporting								
	To Get Desired Job			To Please Parents			To Get Into Desired Secondary School or University		
	Strongly Agree	Agree	Disagree/Strongly Disagree	Strongly Agree	Agree	Disagree/Strongly Disagree	Strongly Agree	Agree	Disagree/Strongly Disagree
Australia	37 (1.2)	42 (1.0)	21 (1.0)	24 (1.0)	48 (1.0)	29 (1.0)	36 (1.2)	44 (1.0)	20 (1.0)
Belgium (Flemish)	18 (1.2)	40 (1.4)	42 (1.1)	15 (0.6)	52 (1.2)	33 (1.1)	24 (0.8)	46 (1.3)	30 (1.2)
Bulgaria	45 (1.2)	39 (1.1)	16 (1.0)	25 (1.1)	36 (1.3)	40 (1.3)	50 (1.4)	36 (1.3)	14 (0.9)
Canada	43 (1.1)	40 (0.9)	17 (0.6)	25 (0.5)	46 (0.6)	30 (0.6)	57 (0.8)	36 (0.6)	7 (0.5)
Chile	52 (1.0)	33 (0.8)	15 (0.6)	38 (0.9)	35 (0.7)	27 (1.0)	66 (0.9)	26 (0.8)	7 (0.5)
Chinese Taipei	27 (0.7)	50 (0.8)	23 (0.9)	29 (0.8)	50 (0.6)	20 (0.7)	42 (0.9)	46 (0.7)	11 (0.5)
Cyprus	55 (1.2)	33 (1.1)	12 (0.6)	29 (0.9)	37 (0.8)	35 (0.9)	53 (1.1)	32 (1.0)	16 (0.7)
Czech Republic	32 (1.2)	48 (1.2)	20 (1.0)	22 (1.1)	56 (1.0)	22 (1.0)	46 (1.3)	39 (1.0)	15 (0.9)
England	36 (1.2)	41 (1.0)	23 (1.0)	21 (1.0)	41 (0.9)	38 (1.0)	43 (1.3)	42 (1.1)	15 (0.9)
Finland	22 (1.1)	46 (1.0)	32 (1.3)	8 (0.6)	35 (1.1)	57 (1.1)	25 (1.0)	56 (1.0)	19 (0.9)
Hong Kong, SAR	28 (0.8)	53 (0.8)	19 (0.6)	26 (0.7)	55 (0.7)	19 (0.7)	29 (0.8)	49 (0.8)	22 (0.8)
Hungary	25 (0.9)	58 (1.0)	16 (0.8)	8 (0.5)	45 (1.0)	47 (1.1)	33 (1.0)	49 (1.0)	18 (1.0)
Indonesia	46 (0.9)	50 (0.8)	4 (0.3)	45 (0.9)	50 (0.8)	5 (0.4)	46 (0.9)	49 (0.7)	5 (0.3)
Iran, Islamic Rep.	50 (1.3)	35 (0.8)	15 (0.8)	60 (1.1)	34 (1.0)	6 (0.4)	59 (1.3)	32 (1.1)	9 (0.7)
Israel	51 (1.3)	31 (0.9)	18 (0.8)	37 (1.0)	35 (1.0)	29 (0.8)	66 (1.2)	27 (1.0)	7 (0.5)
Italy	30 (0.7)	45 (1.0)	24 (0.8)	27 (1.0)	51 (1.0)	22 (0.9)	33 (0.7)	46 (1.0)	20 (0.9)
Japan	12 (0.5)	39 (0.7)	49 (1.0)	6 (0.4)	25 (0.7)	69 (0.8)	34 (0.8)	54 (0.7)	11 (0.7)
Jordan	60 (0.8)	30 (0.8)	10 (0.5)	59 (1.0)	30 (0.9)	11 (0.7)	69 (0.9)	23 (0.7)	7 (0.6)
Korea, Rep. of	10 (0.5)	34 (0.6)	56 (0.7)	12 (0.5)	50 (0.7)	38 (0.7)	31 (0.7)	54 (0.7)	15 (0.5)
Latvia (LSS)	36 (1.2)	50 (1.3)	14 (0.8)	21 (0.9)	52 (1.1)	27 (1.2)	47 (1.2)	46 (1.1)	7 (0.5)
Lithuania [†]	43 (1.3)	46 (1.3)	11 (0.9)	10 (0.7)	28 (1.2)	62 (1.2)	44 (1.3)	44 (1.3)	12 (0.9)
Macedonia, Rep. of	41 (1.1)	40 (1.0)	19 (0.8)	35 (1.1)	34 (0.9)	31 (1.2)	53 (1.0)	37 (0.9)	9 (0.5)
Malaysia	61 (1.0)	34 (0.9)	5 (0.3)	59 (1.2)	35 (0.9)	7 (0.6)	64 (1.1)	32 (1.0)	4 (0.4)
Moldova	40 (1.1)	46 (1.1)	14 (0.8)	31 (1.2)	47 (1.0)	23 (1.2)	39 (1.1)	47 (0.9)	15 (0.8)
Morocco	r 59 (0.9)	32 (0.9)	10 (0.6)	r 61 (0.8)	31 (0.7)	8 (0.6)	r 58 (0.9)	33 (0.8)	9 (0.7)
Netherlands	18 (1.2)	37 (0.9)	45 (1.3)	7 (0.8)	36 (1.2)	57 (1.3)	20 (1.2)	45 (1.1)	35 (1.6)
New Zealand	41 (1.1)	43 (0.9)	17 (0.8)	24 (1.0)	46 (0.9)	31 (0.9)	39 (1.0)	45 (1.0)	16 (0.9)
Philippines	44 (1.1)	44 (0.8)	11 (0.7)	34 (0.8)	48 (0.7)	19 (0.7)	47 (1.0)	41 (0.8)	12 (0.8)
Romania	40 (1.3)	48 (1.2)	12 (0.8)	34 (1.3)	49 (1.1)	17 (1.4)	45 (1.3)	43 (1.1)	12 (0.7)
Russian Federation	42 (1.1)	42 (1.0)	16 (0.8)	20 (0.7)	40 (1.0)	39 (1.3)	40 (1.0)	48 (1.0)	12 (0.6)
Singapore	40 (1.0)	46 (0.8)	13 (0.6)	26 (0.8)	46 (0.6)	28 (0.8)	54 (1.1)	41 (1.0)	5 (0.4)
Slovak Republic	31 (1.1)	53 (1.1)	17 (1.0)	13 (0.8)	47 (1.3)	40 (1.6)	49 (1.1)	45 (0.9)	6 (0.5)
Slovenia	25 (1.0)	52 (1.0)	24 (1.0)	6 (0.6)	26 (0.9)	67 (1.1)	35 (1.0)	54 (1.0)	11 (0.6)
South Africa	58 (0.9)	29 (0.6)	13 (0.7)	43 (1.0)	35 (1.0)	22 (0.8)	57 (1.0)	28 (0.7)	15 (0.6)
Thailand	43 (0.9)	52 (0.9)	5 (0.4)	50 (0.9)	47 (0.9)	3 (0.3)	54 (1.0)	42 (0.9)	4 (0.3)
Tunisia	51 (1.0)	33 (0.9)	16 (0.6)	36 (0.9)	42 (0.7)	22 (0.8)	51 (0.9)	34 (0.7)	15 (0.6)
Turkey	43 (0.8)	44 (0.7)	13 (0.6)	36 (0.9)	42 (0.8)	22 (0.8)	55 (0.8)	38 (0.7)	8 (0.3)
United States	41 (0.8)	40 (0.7)	18 (0.6)	34 (0.8)	47 (0.7)	19 (0.6)	58 (1.2)	36 (1.0)	6 (0.3)
International Avg.	39 (0.2)	42 (0.2)	19 (0.1)	29 (0.1)	42 (0.1)	30 (0.2)	46 (0.2)	41 (0.2)	13 (0.1)

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

Background data provided by students.

[†] 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 a 70-84% student response rate.

Exhibit R1.11 Students' Daily Out-of-School Study Time

	Average Hours Spent Each Day Studying or Doing Homework ¹				Percentage of Students Reporting Spending Some Time Studying All Three Subjects: Mathematics, Science, and Other
	Mathematics	Science	Other School Subjects	Total	
Australia	0.7 (0.02)	0.6 (0.02)	0.8 (0.02)	2.0 (0.04)	74 (1.6)
Belgium (Flemish)	1.1 (0.03)	0.8 (0.03)	1.4 (0.04)	2.9 (0.05)	86 (1.2)
Bulgaria	1.1 (0.04)	1.1 (0.03)	1.3 (0.04)	3.0 (0.06)	74 (1.9)
Canada	0.8 (0.02)	0.6 (0.01)	1.0 (0.02)	2.2 (0.04)	78 (1.0)
Chile	0.9 (0.02)	0.9 (0.02)	1.2 (0.03)	2.4 (0.04)	75 (1.0)
Chinese Taipei	0.7 (0.02)	0.6 (0.02)	1.0 (0.02)	2.0 (0.05)	55 (1.3)
Cyprus	1.1 (0.03)	0.7 (0.02)	1.5 (0.03)	2.8 (0.04)	79 (0.8)
Czech Republic	0.7 (0.02)	0.6 (0.02)	0.7 (0.02)	1.9 (0.04)	74 (1.4)
England	--	--	--	--	--
Finland	0.6 (0.01)	0.5 (0.01)	0.7 (0.01)	1.8 (0.02)	90 (0.8)
Hong Kong, SAR	0.7 (0.02)	0.5 (0.01)	0.7 (0.02)	1.6 (0.04)	53 (1.3)
Hungary	0.8 (0.02)	1.1 (0.02)	1.2 (0.03)	2.8 (0.04)	90 (0.8)
Indonesia	1.2 (0.03)	1.1 (0.02)	1.3 (0.02)	3.0 (0.05)	83 (1.0)
Iran, Islamic Rep.	1.9 (0.03)	1.6 (0.03)	2.0 (0.04)	r 4.0 (0.05)	92 (0.5)
Israel	1.1 (0.03)	0.8 (0.02)	1.4 (0.04)	2.7 (0.05)	79 (0.9)
Italy	1.3 (0.03)	1.0 (0.02)	1.9 (0.03)	3.6 (0.04)	91 (0.8)
Japan	0.6 (0.01)	0.4 (0.01)	0.8 (0.02)	1.7 (0.04)	59 (1.4)
Jordan	1.7 (0.03)	1.5 (0.03)	2.4 (0.05)	r 3.7 (0.06)	r 87 (0.9)
Korea, Rep. of	0.6 (0.02)	0.4 (0.01)	0.7 (0.02)	1.6 (0.03)	50 (0.9)
Latvia (LSS)	1.0 (0.02)	0.8 (0.02)	1.5 (0.03)	3.0 (0.04)	89 (0.7)
Lithuania [‡]	0.9 (0.03)	0.8 (0.02)	1.5 (0.04)	2.8 (0.04)	89 (1.0)
Macedonia, Rep. of	1.2 (0.03)	2.0 (0.05)	1.5 (0.04)	r 3.4 (0.05)	90 (0.5)
Malaysia	1.6 (0.02)	1.3 (0.02)	1.8 (0.03)	3.8 (0.04)	94 (0.4)
Moldova	1.1 (0.03)	1.7 (0.04)	1.4 (0.04)	r 3.3 (0.05)	83 (0.8)
Morocco	r 1.7 (0.07)	r 1.5 (0.06)	r 1.8 (0.06)	s 3.1 (0.05)	s 77 (1.3)
Netherlands	0.6 (0.02)	0.6 (0.02)	1.0 (0.02)	2.2 (0.04)	89 (1.1)
New Zealand	0.7 (0.02)	0.6 (0.02)	0.9 (0.02)	2.0 (0.04)	76 (1.3)
Philippines	1.7 (0.04)	1.7 (0.04)	2.1 (0.04)	r 3.3 (0.04)	88 (0.7)
Romania	1.6 (0.05)	1.2 (0.03)	1.4 (0.04)	3.4 (0.06)	77 (1.2)
Russian Federation	1.1 (0.03)	1.5 (0.03)	1.2 (0.04)	3.1 (0.05)	89 (0.7)
Singapore	1.3 (0.02)	1.2 (0.02)	1.7 (0.03)	3.5 (0.04)	90 (0.8)
Slovak Republic	0.8 (0.02)	0.8 (0.02)	0.9 (0.02)	2.3 (0.03)	88 (0.8)
Slovenia	0.8 (0.02)	0.9 (0.02)	0.9 (0.02)	2.5 (0.03)	85 (1.0)
South Africa	1.8 (0.04)	1.5 (0.05)	2.0 (0.06)	r 3.1 (0.06)	71 (1.9)
Thailand	1.1 (0.02)	1.0 (0.02)	1.2 (0.02)	2.9 (0.04)	88 (0.6)
Tunisia	1.8 (0.03)	1.2 (0.03)	2.1 (0.03)	r 3.6 (0.04)	82 (0.8)
Turkey	1.2 (0.02)	1.2 (0.02)	1.9 (0.03)	3.5 (0.05)	90 (0.7)
United States	0.8 (0.02)	0.6 (0.01)	0.9 (0.02)	2.1 (0.04)	72 (1.6)
International Avg.	1.1 (0.00)	1.0 (0.00)	1.3 (0.01)	2.8 (0.01)	80 (0.2)

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

Background data provided by students.

¹ Average hours based on: No time=0; less than 1 hour=5; 1-2 hours=1.5; 3-5 hours=4; more than 5 hours=7.

[‡] 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.

A dash (–) indicates data are not available.

An "r" indicates a 70-84% student response rate. An "s" indicates a 50-69% student response rate.

	Spend Any Time Studying All Three Mathematics, Science, and Other Subjects		Spend At Least 3 Hours Studying Across Subjects		Spend 1 Hour or More Studying Mathematics	
	Percent of Students 1999	1995 - 1999 Difference	Percent of Students 1999	1995 - 1999 Difference	Percent of Students 1999	1995 - 1999 Difference
Australia	74 (1.6)	4 (2.1) ●	17 (0.9)	1 (1.1) ●	22 (1.0)	1 (1.4) ●
Belgium (Flemish)	85 (1.2)	-3 (1.5) ●	41 (1.3)	-1 (2.0) ●	47 (1.2)	1 (2.0) ●
Canada	78 (1.0)	7 (2.0) ▲	24 (0.8)	4 (1.3) ▲	28 (1.0)	4 (1.5) ●
Cyprus	79 (0.8)	4 (1.2) ●	35 (1.1)	-5 (1.4) ▼	40 (1.1)	-7 (1.4) ▼
Czech Republic	74 (1.4)	5 (2.2) ●	16 (1.1)	3 (1.3) ●	20 (1.1)	4 (1.5) ●
England	--	--	--	--	--	--
Hong Kong, SAR	53 (1.3)	-17 (2.1) ▼	16 (0.8)	-12 (1.4) ▼	24 (1.1)	-10 (1.6) ▼
Hungary	90 (0.8)	2 (1.1) ●	40 (1.3)	2 (1.9) ●	25 (1.1)	-3 (1.6) ●
Iran, Islamic Rep.	92 (0.5)	r -3 (0.7) ▼	69 (1.1)	s -4 (1.9) ●	75 (1.0)	-3 (1.5) ●
Israel †	80 (0.9)	4 (1.7) ●	33 (1.7)	2 (2.5) ●	44 (1.5)	3 (2.9) ●
Italy	92 (0.8)	0 (1.2) ●	60 (1.6)	0 (2.2) ●	57 (1.6)	-1 (2.4) ●
Japan	59 (1.4)	-13 (1.9) ▼	17 (0.9)	-10 (1.3) ▼	20 (0.9)	-10 (1.3) ▼
Korea, Rep. of	50 (0.9)	-15 (1.6) ▼	16 (0.7)	-11 (1.4) ▼	21 (0.9)	-12 (1.5) ▼
Latvia (LSS)	89 (0.7)	9 (1.6) ▲	40 (1.2)	13 (1.6) ▲	40 (1.3)	8 (1.8) ▲
Lithuania	89 (1.0)	7 (1.5) ▲	35 (1.2)	10 (1.8) ▲	29 (1.3)	5 (1.7) ●
Netherlands	89 (1.1)	-1 (1.6) ●	19 (1.4)	3 (1.6) ●	14 (1.5)	3 (1.8) ●
New Zealand	76 (1.3)	0 (1.8) ●	17 (1.0)	1 (1.3) ●	20 (1.2)	2 (1.5) ●
Romania	76 (1.2)	1 (1.8) ●	55 (1.6)	r 4 (2.2) ●	66 (1.8)	3 (2.6) ●
Russian Federation	89 (0.7)	4 (1.1) ▲	48 (1.3)	13 (1.9) ▲	45 (1.5)	10 (1.9) ▲
Singapore	90 (0.8)	-2 (1.0) ●	59 (1.2)	-18 (1.5) ▼	61 (1.1)	-16 (1.5) ▼
Slovak Republic	88 (0.8)	4 (1.3) ▲	24 (0.9)	2 (1.3) ●	23 (0.9)	4 (1.4) ●
Slovenia	85 (1.0)	-1 (1.3) ●	32 (1.0)	-3 (1.4) ●	29 (1.0)	-6 (1.5) ▼
Thailand †	88 (0.6)	-3 (1.0) ●	45 (1.2)	-6 (2.0) ▼	49 (1.2)	-6 (2.2) ●
United States	72 (1.6)	1 (2.1) ●	22 (0.8)	0 (1.1) ●	27 (1.1)	0 (1.5) ●
International Avg. §	79 (0.2)	0 (0.4) ●	33 (0.2)	0 (0.4) ●	35 (0.3)	-1 (0.4) ●

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

▲ 1999 significantly higher than 1995

● No significant difference between 1995 and 1999

▼ 1999 significantly lower than 1995

Significance tests adjusted for multiple comparisons

Background data provided by students.

† Countries with unapproved sampling procedures at the classroom level in 1995.

§ International average is for countries that participated and met sampling guidelines in both 1995 and 1999.

Trend notes: Because coverage fell below 65% in 1995 and 1999, Latvia is annotated LSS for Latvian Speaking Schools only. Lithuania tested later in 1999 than in 1995, at the beginning of the next school year. In 1995, Italy and Israel were unable to cover their International Desired Population; 1999 data are based on their comparable populations.

Background data for Bulgaria and South Africa are unavailable for 1995.

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

A dash (–) indicates data are not available.

An "r" indicates a 70-84% student response rate, based on the lower response rate in either 1995 or 1999. An "s" indicates a 50-69% student response rate, based on the lower response rate in either 1995 or 1999.

Exhibit R1.13 Students' Daily Leisure Time*

	Average Hours Spent Each Day ¹					
	Watching Television or Videos	Playing Computer Games	Playing or Talking With Friends	Doing Jobs at Home	Playing Sports	Reading a Book for Enjoyment
Australia	2.3 (0.05)	0.8 (0.03)	1.5 (0.03)	0.9 (0.03)	1.6 (0.03)	0.6 (0.02)
Belgium (Flemish)	2.1 (0.04)	0.9 (0.04)	1.8 (0.05)	1.0 (0.04)	1.8 (0.07)	0.6 (0.02)
Bulgaria	2.8 (0.05)	0.8 (0.04)	2.6 (0.06)	1.9 (0.04)	1.5 (0.05)	1.0 (0.03)
Canada	2.2 (0.03)	0.8 (0.02)	2.1 (0.04)	1.1 (0.03)	1.9 (0.03)	0.7 (0.04)
Chile	2.7 (0.05)	0.6 (0.02)	1.9 (0.04)	1.5 (0.03)	2.0 (0.03)	0.7 (0.02)
Chinese Taipei	2.0 (0.04)	0.9 (0.03)	1.3 (0.03)	1.0 (0.02)	1.2 (0.02)	0.9 (0.02)
Cyprus	2.2 (0.04)	1.0 (0.03)	1.8 (0.04)	0.9 (0.03)	1.4 (0.04)	0.7 (0.02)
Czech Republic	2.3 (0.05)	0.9 (0.06)	3.0 (0.07)	1.2 (0.03)	2.0 (0.05)	1.0 (0.04)
England	2.6 (0.05)	1.2 (0.04)	2.5 (0.08)	0.8 (0.02)	1.6 (0.04)	0.6 (0.02)
Finland	2.5 (0.04)	1.1 (0.03)	3.2 (0.07)	0.9 (0.02)	1.6 (0.04)	0.8 (0.02)
Hong Kong, SAR	2.4 (0.04)	1.0 (0.03)	1.3 (0.04)	0.6 (0.01)	1.0 (0.03)	0.8 (0.02)
Hungary	2.7 (0.05)	1.0 (0.03)	2.0 (0.05)	1.6 (0.04)	1.5 (0.04)	0.8 (0.02)
Indonesia	1.7 (0.05)	0.2 (0.02)	1.1 (0.02)	1.9 (0.03)	1.0 (0.02)	0.9 (0.02)
Iran, Islamic Rep.	1.8 (0.04)	0.3 (0.03)	1.3 (0.04)	1.7 (0.04)	1.3 (0.06)	0.9 (0.02)
Israel	3.1 (0.05)	1.5 (0.04)	2.4 (0.04)	1.3 (0.05)	1.8 (0.05)	1.0 (0.03)
Italy	1.8 (0.03)	1.0 (0.03)	2.7 (0.05)	1.1 (0.03)	1.7 (0.03)	0.7 (0.02)
Japan	3.1 (0.05)	0.9 (0.03)	1.8 (0.04)	0.5 (0.02)	1.1 (0.03)	0.8 (0.02)
Jordan	1.7 (0.04)	0.8 (0.04)	1.1 (0.04)	1.3 (0.05)	1.4 (0.05)	1.4 (0.04)
Korea, Rep. of	2.9 (0.04)	0.8 (0.03)	1.3 (0.03)	0.6 (0.01)	0.6 (0.02)	0.6 (0.01)
Latvia (LSS)	2.8 (0.05)	0.7 (0.03)	2.6 (0.06)	1.7 (0.03)	1.3 (0.03)	0.9 (0.03)
Lithuania †	2.4 (0.05)	0.6 (0.03)	2.4 (0.06)	1.6 (0.05)	1.0 (0.03)	0.7 (0.02)
Macedonia, Rep. of	2.2 (0.05)	0.7 (0.04)	1.8 (0.05)	1.9 (0.04)	1.8 (0.05)	1.2 (0.04)
Malaysia	1.9 (0.05)	0.5 (0.02)	1.2 (0.03)	1.8 (0.03)	1.1 (0.02)	1.1 (0.02)
Moldova	2.6 (0.07)	1.0 (0.05)	1.9 (0.06)	3.2 (0.09)	1.4 (0.04)	1.5 (0.04)
Morocco	r 1.1 (0.03)	r 0.7 (0.02)	r 0.9 (0.03)	r 1.5 (0.03)	r 1.5 (0.04)	r 1.4 (0.05)
Netherlands	2.4 (0.10)	0.9 (0.04)	2.6 (0.09)	0.8 (0.04)	1.8 (0.06)	0.7 (0.04)
New Zealand	2.5 (0.05)	0.9 (0.04)	1.6 (0.04)	1.0 (0.03)	1.5 (0.04)	0.7 (0.02)
Philippines	1.7 (0.04)	0.7 (0.03)	1.2 (0.03)	2.4 (0.05)	1.6 (0.04)	1.6 (0.04)
Romania	2.2 (0.06)	0.6 (0.04)	1.6 (0.05)	2.0 (0.06)	1.2 (0.04)	1.0 (0.03)
Russian Federation	2.6 (0.05)	0.7 (0.03)	3.0 (0.05)	1.5 (0.03)	1.3 (0.03)	1.2 (0.03)
Singapore	2.4 (0.04)	1.1 (0.03)	1.5 (0.04)	0.9 (0.02)	1.5 (0.04)	1.0 (0.02)
Slovak Republic	2.5 (0.06)	0.6 (0.03)	2.7 (0.06)	1.6 (0.05)	1.9 (0.04)	0.7 (0.02)
Slovenia	2.3 (0.05)	0.9 (0.03)	1.8 (0.04)	1.2 (0.03)	1.6 (0.04)	0.7 (0.02)
South Africa	2.0 (0.07)	0.8 (0.04)	1.5 (0.04)	2.0 (0.04)	2.0 (0.05)	1.8 (0.05)
Thailand	2.1 (0.05)	0.4 (0.02)	1.6 (0.04)	1.6 (0.02)	1.5 (0.03)	1.0 (0.02)
Tunisia	2.0 (0.04)	0.9 (0.03)	1.3 (0.03)	1.7 (0.04)	1.9 (0.04)	1.4 (0.03)
Turkey	1.6 (0.04)	r 0.4 (0.02)	1.5 (0.03)	1.1 (0.04)	1.4 (0.03)	1.2 (0.03)
United States	2.5 (0.06)	0.9 (0.02)	2.4 (0.05)	1.1 (0.03)	1.9 (0.03)	0.6 (0.02)
International Avg.	2.3 (0.01)	0.8 (0.01)	1.9 (0.01)	1.4 (0.01)	1.5 (0.01)	1.0 (0.00)

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

Background data provided by students.

* Activities are not necessarily exclusive; students may have reported engaging in more than one activity at the same time.

¹ Average hours based on: No time=0; less than 1 hour=.5; 1-2 hours=1.5; 3-5 hours=4; more than 5 hours=7.

† 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 a 70-84% student response rate.

	Strongly Disagree		Disagree		Agree		Strongly Agree		Average ¹
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Australia	18 (1.1)	573 (5.8)	36 (1.0)	546 (5.3)	28 (0.9)	499 (5.2)	17 (0.8)	478 (5.4)	2.4 (0.03)
Belgium (Flemish)	17 (0.8)	598 (5.4)	30 (0.9)	580 (4.8)	31 (1.0)	540 (4.5)	21 (0.9)	526 (3.8)	2.6 (0.02)
Bulgaria	18 (1.9)	560 (10.6)	26 (1.2)	541 (6.3)	30 (1.4)	494 (4.9)	25 (1.5)	476 (5.1)	2.6 (0.05)
Canada	26 (1.2)	577 (3.2)	31 (0.7)	542 (3.0)	26 (1.0)	502 (4.7)	17 (0.8)	485 (3.4)	2.3 (0.03)
Chile	15 (0.6)	444 (8.7)	27 (0.7)	408 (4.7)	35 (0.7)	382 (4.7)	23 (0.7)	367 (5.5)	2.7 (0.02)
Chinese Taipei	16 (0.6)	646 (6.1)	28 (0.7)	623 (4.3)	34 (0.7)	564 (4.5)	23 (0.7)	533 (3.9)	2.6 (0.02)
Cyprus	23 (1.0)	525 (4.3)	34 (0.8)	492 (2.8)	27 (0.9)	445 (2.9)	16 (0.6)	438 (4.3)	2.4 (0.02)
Czech Republic	12 (0.9)	567 (6.9)	35 (1.2)	541 (5.0)	36 (1.1)	500 (4.7)	16 (0.9)	486 (5.8)	2.6 (0.03)
England	19 (0.9)	539 (6.9)	40 (1.2)	512 (4.5)	28 (1.2)	471 (4.8)	13 (0.8)	458 (6.3)	2.4 (0.02)
Finland	17 (0.8)	570 (4.4)	34 (1.0)	543 (3.8)	31 (1.1)	498 (2.6)	18 (1.0)	474 (3.7)	2.5 (0.03)
Hong Kong, SAR	11 (0.5)	619 (5.5)	31 (0.8)	606 (3.9)	39 (0.7)	573 (4.4)	20 (0.8)	549 (5.0)	2.7 (0.02)
Hungary	15 (0.7)	598 (5.7)	34 (1.1)	552 (4.7)	40 (1.1)	503 (3.7)	11 (0.7)	493 (5.9)	2.5 (0.02)
Indonesia	6 (0.4)	411 (10.6)	31 (0.8)	418 (5.2)	53 (1.0)	404 (4.6)	10 (0.5)	359 (10.7)	2.7 (0.01)
Iran, Islamic Rep.	26 (1.0)	459 (4.6)	35 (0.7)	426 (3.3)	25 (0.9)	404 (4.5)	14 (0.6)	397 (5.2)	2.3 (0.02)
Israel	29 (1.0)	508 (4.2)	32 (0.8)	483 (4.5)	25 (0.8)	438 (4.0)	14 (0.7)	418 (6.3)	2.2 (0.02)
Italy	22 (0.9)	529 (5.6)	32 (0.9)	495 (3.6)	27 (0.8)	456 (4.9)	18 (0.9)	435 (5.0)	2.4 (0.02)
Japan	12 (0.5)	602 (4.9)	29 (0.7)	598 (2.7)	38 (0.6)	576 (2.7)	21 (0.7)	545 (3.3)	2.7 (0.02)
Jordan	27 (1.1)	491 (5.4)	29 (0.9)	446 (4.3)	26 (0.9)	401 (4.3)	17 (0.8)	386 (4.8)	2.3 (0.03)
Korea, Rep. of	10 (0.5)	648 (3.9)	33 (0.7)	621 (3.0)	41 (0.8)	564 (2.7)	15 (0.5)	536 (3.6)	2.6 (0.02)
Latvia (LSS)	10 (0.7)	572 (6.2)	28 (1.1)	534 (4.9)	41 (1.0)	487 (3.8)	20 (0.9)	470 (4.3)	2.7 (0.02)
Lithuania [‡]	11 (0.8)	536 (7.0)	35 (1.4)	508 (5.1)	42 (1.4)	461 (3.9)	12 (0.9)	436 (6.6)	2.6 (0.03)
Macedonia, Rep. of	13 (0.6)	501 (7.2)	27 (0.9)	474 (5.3)	37 (1.0)	441 (5.4)	24 (1.1)	423 (4.9)	2.7 (0.02)
Malaysia	23 (0.9)	544 (5.4)	45 (0.9)	525 (4.6)	27 (1.0)	497 (5.1)	5 (0.3)	481 (6.6)	2.1 (0.02)
Moldova	17 (1.0)	506 (6.0)	44 (1.2)	477 (4.6)	29 (1.0)	455 (5.5)	10 (0.7)	440 (6.9)	2.3 (0.02)
Morocco ^r	18 (0.7)	378 (6.1)	32 (1.2)	350 (5.9)	28 (0.9)	324 (4.2)	22 (0.7)	320 (6.0)	2.5 (0.02)
Netherlands	16 (0.8)	570 (7.4)	28 (1.4)	557 (7.9)	36 (1.5)	529 (8.2)	20 (1.0)	515 (9.2)	2.6 (0.03)
New Zealand	16 (0.8)	548 (6.7)	36 (1.1)	518 (5.4)	32 (0.9)	466 (4.7)	15 (0.8)	436 (5.1)	2.5 (0.03)
Philippines	14 (0.5)	374 (9.6)	37 (1.1)	368 (6.9)	31 (0.8)	337 (5.7)	17 (0.8)	309 (6.1)	2.5 (0.02)
Romania	11 (0.7)	517 (6.2)	26 (1.1)	498 (6.5)	44 (1.3)	466 (6.3)	19 (1.0)	450 (7.1)	2.7 (0.02)
Russian Federation	21 (0.9)	580 (5.8)	40 (0.9)	538 (5.6)	30 (1.2)	501 (7.3)	9 (0.6)	471 (10.0)	2.3 (0.03)
Singapore	16 (0.7)	631 (7.3)	37 (0.7)	614 (6.1)	33 (0.8)	593 (6.4)	13 (0.6)	575 (6.9)	2.4 (0.02)
Slovak Republic	12 (0.7)	586 (7.8)	34 (1.1)	554 (4.4)	40 (1.2)	516 (3.9)	14 (0.8)	498 (5.6)	2.6 (0.02)
Slovenia	24 (0.8)	583 (4.4)	40 (1.2)	542 (3.4)	24 (0.9)	490 (3.8)	12 (0.8)	471 (5.7)	2.2 (0.02)
South Africa	18 (0.6)	313 (8.5)	26 (1.0)	295 (12.4)	31 (0.8)	264 (6.8)	26 (0.9)	247 (5.2)	2.6 (0.02)
Thailand	7 (0.4)	515 (8.5)	34 (0.9)	490 (5.2)	46 (0.9)	454 (5.3)	13 (0.5)	435 (7.5)	2.6 (0.02)
Tunisia	25 (0.8)	476 (3.7)	31 (0.8)	452 (3.7)	25 (0.7)	432 (5.0)	19 (0.6)	428 (3.5)	2.4 (0.02)
Turkey	13 (0.5)	468 (5.9)	36 (0.8)	446 (4.8)	36 (0.8)	425 (3.8)	15 (0.6)	397 (6.4)	2.5 (0.02)
United States	26 (0.8)	547 (4.6)	33 (0.6)	517 (4.5)	24 (0.6)	478 (4.4)	18 (0.7)	455 (4.3)	2.3 (0.02)
International Avg.	17 (0.1)	532 (1.0)	33 (0.2)	506 (0.8)	33 (0.2)	469 (0.8)	17 (0.1)	450 (0.9)	2.5 (0.00)

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

Background data provided by students.

¹ Average scale value based on: Strongly disagree=4; disagree=3; agree=2; strongly agree=1.[‡] 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 a 70-84% student response rate.

Exhibit R1.15 Students' Liking Mathematics

	Like a Lot		Like		Dislike		Dislike a Lot		Average ¹
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Australia	17 (0.9)	552 (6.6)	51 (1.0)	528 (5.4)	23 (1.0)	512 (6.7)	10 (0.7)	496 (6.5)	2.7 (0.03)
Belgium (Flemish)	20 (0.9)	598 (5.1)	46 (1.3)	562 (4.2)	24 (1.3)	537 (6.8)	10 (0.7)	518 (5.1)	2.8 (0.02)
Bulgaria	22 (1.9)	540 (12.0)	46 (1.3)	520 (5.3)	23 (1.3)	491 (5.3)	9 (1.1)	475 (7.7)	2.8 (0.04)
Canada	24 (1.0)	561 (3.8)	49 (1.6)	531 (2.6)	18 (0.8)	513 (4.8)	9 (0.5)	486 (4.6)	2.9 (0.02)
Chile	26 (1.0)	416 (6.6)	47 (0.7)	392 (4.5)	20 (0.8)	378 (4.5)	6 (0.4)	364 (9.2)	2.9 (0.02)
Chinese Taipei	15 (0.7)	654 (5.3)	41 (0.8)	617 (3.5)	33 (0.8)	546 (5.2)	12 (0.6)	502 (5.3)	2.6 (0.02)
Cyprus	30 (1.0)	513 (3.3)	47 (1.1)	472 (2.8)	15 (0.8)	452 (4.9)	8 (0.6)	426 (5.4)	3.0 (0.02)
Czech Republic	11 (0.9)	580 (7.9)	44 (1.5)	530 (4.5)	34 (1.7)	498 (5.6)	11 (0.8)	489 (7.6)	2.5 (0.03)
England	23 (1.1)	514 (6.8)	54 (1.1)	497 (4.3)	16 (0.9)	487 (5.5)	6 (0.5)	470 (8.7)	3.0 (0.02)
Finland	17 (1.1)	558 (4.1)	47 (1.4)	522 (3.6)	27 (1.2)	508 (3.5)	9 (1.0)	480 (6.8)	2.7 (0.03)
Hong Kong, SAR	22 (0.7)	610 (4.7)	53 (0.7)	587 (4.0)	20 (0.8)	558 (4.7)	5 (0.4)	521 (7.3)	2.9 (0.02)
Hungary	14 (0.7)	592 (7.6)	48 (1.3)	537 (4.1)	30 (1.2)	506 (4.1)	8 (0.7)	501 (7.2)	2.7 (0.02)
Indonesia	22 (1.2)	418 (6.9)	70 (1.0)	403 (4.9)	8 (0.7)	377 (8.0)	1 (0.1)	~ ~	3.1 (0.02)
Iran, Islamic Rep.	35 (1.1)	447 (5.4)	49 (0.9)	416 (3.1)	10 (0.5)	394 (7.5)	6 (0.5)	389 (7.1)	3.1 (0.02)
Israel	29 (1.2)	469 (7.7)	45 (0.9)	476 (4.3)	17 (0.9)	472 (5.7)	8 (0.5)	429 (6.3)	3.0 (0.03)
Italy	30 (1.0)	517 (4.6)	38 (1.1)	482 (4.3)	22 (0.8)	446 (5.1)	10 (0.7)	433 (5.8)	2.9 (0.02)
Japan	9 (0.5)	631 (5.7)	39 (0.9)	600 (2.2)	38 (1.0)	563 (2.5)	14 (0.6)	530 (4.1)	2.4 (0.02)
Jordan	41 (1.4)	451 (5.8)	41 (0.9)	425 (3.4)	11 (0.7)	403 (5.6)	7 (0.6)	411 (6.7)	3.2 (0.03)
Korea, Rep. of	12 (0.5)	647 (4.2)	42 (0.8)	608 (2.4)	38 (0.7)	557 (2.7)	8 (0.4)	536 (3.8)	2.6 (0.02)
Latvia (LSS)	11 (0.7)	549 (6.7)	50 (1.3)	513 (4.1)	32 (1.3)	486 (4.5)	7 (0.6)	472 (7.5)	2.6 (0.02)
Lithuania †	16 (1.1)	527 (7.6)	55 (1.3)	483 (4.5)	24 (1.2)	458 (5.2)	4 (0.5)	446 (12.1)	2.8 (0.02)
Macedonia, Rep. of	30 (1.0)	460 (6.3)	51 (1.0)	451 (4.2)	14 (0.8)	440 (6.2)	5 (0.4)	446 (10.8)	3.1 (0.02)
Malaysia	42 (1.0)	540 (4.7)	53 (1.0)	505 (4.5)	4 (0.2)	486 (6.1)	1 (0.1)	~ ~	3.4 (0.01)
Moldova	26 (1.0)	455 (5.1)	17 (0.8)	453 (5.7)	53 (1.4)	486 (4.4)	4 (0.6)	485 (13.1)	2.6 (0.02)
Morocco r	54 (0.9)	352 (3.9)	33 (0.7)	335 (6.6)	9 (0.6)	307 (8.2)	3 (0.3)	308 (17.7)	3.4 (0.01)
Netherlands	--	--	--	--	--	--	--	--	--
New Zealand	20 (1.0)	516 (7.5)	53 (0.9)	496 (5.0)	20 (0.8)	478 (6.6)	8 (0.6)	441 (7.8)	2.8 (0.02)
Philippines	32 (1.0)	358 (8.0)	59 (1.0)	348 (5.9)	7 (0.5)	313 (10.7)	2 (0.2)	~ ~	3.2 (0.01)
Romania	19 (0.8)	513 (7.4)	50 (0.9)	483 (6.1)	25 (1.0)	445 (6.7)	6 (0.7)	435 (10.9)	2.8 (0.02)
Russian Federation	22 (1.0)	562 (5.5)	56 (0.8)	529 (5.8)	19 (0.9)	498 (8.1)	3 (0.3)	460 (13.3)	3.0 (0.02)
Singapore	30 (1.0)	626 (6.6)	49 (0.8)	602 (6.4)	14 (0.6)	583 (7.3)	6 (0.4)	564 (7.5)	3.0 (0.02)
Slovak Republic	16 (1.0)	584 (5.7)	54 (1.2)	536 (4.0)	24 (1.2)	507 (5.2)	6 (0.6)	492 (8.3)	2.8 (0.02)
Slovenia	12 (0.7)	585 (6.4)	48 (1.6)	536 (3.2)	29 (1.1)	513 (3.7)	11 (0.8)	496 (6.7)	2.6 (0.03)
South Africa	53 (1.0)	275 (6.5)	35 (0.9)	276 (9.2)	8 (0.4)	288 (11.3)	5 (0.3)	268 (16.6)	3.4 (0.02)
Thailand	13 (0.7)	518 (6.2)	66 (0.8)	467 (5.1)	18 (0.9)	441 (6.0)	2 (0.2)	~ ~	2.9 (0.02)
Tunisia	31 (0.9)	472 (3.5)	46 (0.8)	448 (3.1)	15 (0.6)	423 (4.0)	9 (0.5)	412 (3.1)	3.0 (0.02)
Turkey	27 (1.0)	460 (6.1)	50 (0.8)	428 (4.1)	17 (0.8)	409 (5.4)	7 (0.4)	393 (8.0)	3.0 (0.02)
United States	23 (0.9)	527 (4.5)	46 (0.6)	505 (4.0)	19 (0.7)	496 (4.5)	12 (0.7)	465 (5.6)	2.8 (0.02)
International Avg.	24 (0.2)	518 (0.9)	48 (0.2)	489 (0.8)	21 (0.2)	466 (1.0)	7 (0.1)	456 (1.4)	2.9 (0.00)

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

Background data provided by students.

¹ Average scale value based on: Like a lot=4; like=3; dislike=2; dislike a lot=1.

† 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.

A dash (-) indicates data are not available. A tilde (~) indicates insufficient data to report achievement.

An "r" indicates a 70-84% student response rate.