

### Exhibit 9.11: Students Arrive at School Feeling Tired or Hungry

Exhibit 9.11 contains students' reports about arriving at school feeling tired or hungry. On average, across countries, only 18 percent of the students reported "never" arriving at school feeling tired. Half (50%) reported "sometimes" arriving feeling tired and about one-third (32%) reported that they felt tired "every day or almost every day," with the "sometimes" tired students having higher achievement (520 vs. 501). Interestingly, the "never" tired students had average achievement in between (509) the moderate and daily frequencies of being tired. Perhaps there are many reasons why students might be sometimes tired ranging from too many video games to demanding busing schedules or having to walk to school.

Unfortunately, only one-third of the students (33%) reported that they "never" arrived at school hungry. Forty-one percent reported arriving at school hungry "sometimes" and one-fourth (26%) arriving hungry "every day or almost every day." There was a direct relationship between the frequency of arriving at school hungry and average reading achievement. The "never" hungry students had an average of 526, the "sometimes" hungry students an average of 515, and the students hungry "every day" had an average of 494—32 points lower than "never" being hungry.

**Exhibit 9.11: Students Arrive at School Feeling Tired or Hungry**

Students' Reports

Country	Students Feel Tired						Students Feel Hungry					
	Never		Sometimes		Every Day or Almost Every Day		Never		Sometimes		Every Day or Almost Every Day	
	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	Percent of Students	Average Achievement
Australia	13 (0.6)	539 (5.4)	56 (1.0)	553 (2.7)	31 (0.9)	534 (3.3)	28 (1.0)	563 (3.7)	45 (0.8)	550 (2.7)	27 (0.9)	522 (3.5)
Austria	10 (0.6)	533 (4.7)	51 (0.9)	547 (2.8)	39 (1.0)	536 (2.8)	31 (0.9)	556 (3.0)	44 (0.8)	542 (2.6)	25 (0.8)	523 (3.4)
Azerbaijan	36 (1.6)	489 (3.7)	44 (1.2)	477 (4.6)	20 (1.1)	445 (7.1)	37 (1.2)	489 (4.2)	39 (1.1)	478 (4.3)	24 (1.3)	460 (5.2)
Bahrain	22 (1.3)	456 (5.0)	41 (1.0)	455 (3.0)	37 (1.1)	436 (3.1)	25 (1.0)	475 (3.7)	36 (0.9)	454 (3.0)	39 (1.2)	430 (2.8)
Belgium (Flemish)	15 (0.7)	523 (3.7)	60 (1.0)	529 (2.0)	24 (0.8)	517 (3.0)	40 (1.1)	535 (2.2)	40 (0.8)	524 (2.3)	19 (0.7)	509 (3.4)
Belgium (French)	--	--	--	--	--	--	--	--	--	--	--	--
Bulgaria	17 (1.2)	535 (7.8)	51 (1.4)	563 (4.4)	33 (1.5)	545 (4.8)	38 (1.9)	568 (4.5)	36 (1.1)	556 (4.8)	26 (1.5)	531 (5.5)
Canada	11 (0.4)	538 (4.7)	50 (0.6)	552 (2.0)	40 (0.7)	535 (2.7)	26 (0.7)	558 (2.6)	44 (0.7)	547 (2.2)	31 (0.8)	529 (2.6)
Chile	20 (1.0)	488 (3.8)	46 (1.1)	506 (2.8)	34 (0.9)	485 (3.5)	24 (0.7)	514 (3.5)	43 (0.9)	497 (3.1)	33 (0.9)	484 (3.4)
Chinese Taipei	26 (0.8)	553 (3.1)	55 (0.9)	563 (2.4)	18 (0.6)	557 (2.7)	40 (0.8)	569 (2.6)	46 (0.8)	556 (2.4)	14 (0.7)	540 (4.4)
Czech Republic	10 (0.5)	543 (4.8)	47 (0.9)	552 (2.3)	43 (0.8)	534 (2.4)	39 (0.8)	560 (2.5)	38 (0.8)	545 (2.7)	23 (0.7)	518 (3.5)
Denmark	7 (0.6)	542 (6.0)	55 (1.1)	553 (2.3)	38 (1.3)	542 (3.1)	35 (1.0)	564 (2.8)	45 (0.9)	544 (2.6)	20 (0.8)	528 (3.8)
Egypt	29 (1.7)	337 (8.1)	54 (1.8)	340 (6.1)	17 (1.3)	307 (7.8)	23 (1.7)	342 (6.8)	36 (1.9)	345 (7.6)	41 (2.4)	321 (6.5)
England	11 (0.6)	554 (4.6)	53 (0.9)	570 (2.3)	36 (0.9)	546 (2.6)	31 (0.8)	579 (2.6)	44 (0.8)	562 (2.3)	25 (0.8)	534 (2.9)
Finland	6 (0.4)	567 (5.6)	63 (0.9)	573 (2.0)	31 (1.0)	552 (2.8)	23 (0.7)	581 (2.8)	55 (0.9)	571 (2.1)	22 (0.7)	541 (3.1)
France	15 (0.9)	497 (4.1)	52 (1.1)	515 (2.5)	33 (1.4)	513 (3.1)	28 (1.0)	516 (3.4)	40 (1.0)	518 (2.7)	32 (1.2)	500 (2.8)
Georgia	22 (1.3)	502 (4.6)	51 (1.3)	493 (3.0)	27 (1.2)	475 (4.5)	23 (1.3)	505 (4.8)	42 (1.4)	492 (3.3)	35 (1.3)	484 (4.0)
Germany	10 (0.6)	527 (6.9)	40 (1.1)	553 (3.5)	50 (1.1)	538 (2.9)	r 35 (1.2)	556 (3.2)	44 (1.0)	550 (2.8)	22 (0.8)	517 (5.1)
Hong Kong SAR	21 (0.9)	573 (4.1)	53 (0.9)	571 (2.8)	25 (0.9)	562 (4.0)	31 (1.0)	573 (3.3)	47 (1.1)	569 (3.1)	22 (0.9)	564 (4.0)
Hungary	9 (0.5)	548 (8.0)	48 (1.1)	558 (3.2)	43 (1.3)	552 (3.1)	37 (1.3)	563 (3.9)	44 (1.1)	555 (3.7)	19 (0.9)	539 (4.3)
Iran, Islamic Rep. of	39 (1.7)	421 (6.4)	42 (1.5)	444 (5.2)	19 (0.9)	413 (5.9)	35 (1.2)	440 (6.0)	42 (1.5)	432 (6.4)	23 (1.2)	412 (5.8)
Ireland	12 (0.8)	560 (5.5)	55 (1.1)	577 (2.4)	33 (1.2)	554 (3.2)	41 (1.2)	584 (2.7)	42 (1.0)	565 (3.3)	17 (0.7)	543 (4.2)
Israel	14 (0.7)	514 (4.3)	45 (0.8)	544 (2.9)	41 (1.0)	525 (3.3)	21 (0.8)	537 (4.8)	42 (0.8)	544 (3.0)	37 (0.9)	518 (3.2)
Italy	12 (0.6)	539 (4.7)	53 (1.0)	554 (2.3)	35 (0.9)	544 (2.9)	27 (0.9)	571 (2.5)	36 (0.9)	549 (2.7)	37 (1.2)	533 (2.9)
Kazakhstan	37 (1.3)	539 (2.8)	47 (1.2)	541 (2.8)	17 (0.7)	519 (3.8)	42 (1.2)	543 (2.9)	44 (1.1)	534 (2.7)	14 (0.6)	528 (3.8)
Kuwait	24 (1.4)	395 (5.2)	48 (1.6)	409 (4.2)	28 (1.2)	376 (7.6)	24 (1.5)	419 (6.4)	39 (2.5)	403 (4.5)	37 (2.7)	380 (5.4)
Latvia	9 (0.5)	560 (4.4)	54 (1.0)	562 (2.1)	36 (1.0)	551 (2.5)	25 (0.9)	569 (2.9)	50 (1.0)	562 (2.2)	26 (0.9)	542 (2.7)
Lithuania	21 (1.2)	550 (5.3)	55 (1.2)	556 (2.7)	24 (0.9)	534 (3.7)	49 (1.3)	560 (3.3)	38 (1.2)	546 (3.3)	13 (0.7)	522 (4.3)
Macao SAR	20 (0.6)	550 (2.4)	57 (0.7)	548 (1.5)	23 (0.6)	537 (2.3)	31 (0.7)	549 (2.3)	49 (0.7)	547 (1.4)	20 (0.6)	539 (2.5)
Malta	23 (0.7)	458 (3.3)	44 (0.8)	465 (2.2)	32 (0.8)	436 (3.1)	28 (0.7)	470 (3.0)	32 (0.8)	462 (2.5)	40 (0.7)	437 (2.8)
Morocco	38 (1.3)	357 (4.7)	43 (1.2)	377 (4.7)	19 (1.0)	332 (4.7)	27 (1.3)	367 (5.8)	41 (1.5)	367 (4.0)	32 (1.4)	351 (5.5)
Netherlands	11 (0.6)	541 (5.0)	63 (1.1)	548 (1.8)	27 (1.0)	540 (2.8)	40 (1.1)	556 (2.1)	44 (0.9)	542 (2.2)	17 (0.8)	528 (3.5)
New Zealand	8 (0.4)	501 (6.7)	49 (0.9)	540 (2.4)	43 (0.9)	518 (2.6)	28 (1.0)	545 (4.0)	38 (1.1)	535 (2.9)	33 (1.1)	503 (3.2)
Northern Ireland	9 (0.5)	555 (5.3)	51 (1.2)	578 (2.6)	40 (1.3)	553 (2.9)	32 (1.2)	584 (3.2)	43 (0.9)	571 (2.5)	25 (1.1)	533 (3.3)
Norway (5)	8 (0.5)	556 (4.6)	52 (1.0)	569 (2.6)	40 (1.1)	548 (2.5)	27 (0.9)	570 (2.7)	49 (0.9)	557 (2.8)	24 (1.0)	553 (3.5)
Oman	35 (1.0)	426 (3.6)	42 (0.9)	434 (4.1)	23 (0.9)	392 (4.4)	33 (1.2)	438 (3.5)	36 (1.0)	430 (4.5)	31 (1.1)	398 (4.2)
Poland	19 (0.9)	567 (2.9)	48 (0.9)	576 (2.7)	33 (1.1)	549 (3.2)	59 (1.1)	576 (2.4)	25 (0.9)	563 (3.4)	16 (0.7)	535 (4.5)
Portugal	33 (1.1)	522 (2.4)	45 (1.0)	536 (2.8)	22 (0.9)	520 (3.1)	57 (0.8)	535 (2.7)	28 (0.8)	525 (3.0)	14 (0.6)	511 (5.1)
Qatar	19 (0.5)	447 (3.1)	45 (0.8)	460 (2.2)	35 (0.7)	427 (3.1)	23 (0.6)	469 (3.7)	40 (0.5)	459 (2.6)	37 (0.6)	424 (2.5)
Russian Federation	26 (1.1)	578 (3.9)	52 (1.0)	586 (2.6)	23 (1.0)	574 (3.0)	46 (1.2)	584 (2.7)	37 (1.0)	585 (2.5)	17 (0.8)	570 (3.4)
Saudi Arabia	23 (1.0)	444 (5.3)	52 (1.3)	440 (4.5)	25 (1.0)	413 (5.6)	21 (1.0)	453 (5.1)	44 (1.5)	440 (4.6)	35 (1.3)	422 (5.5)
Singapore	12 (0.4)	576 (4.2)	50 (0.7)	582 (3.3)	39 (0.7)	570 (3.6)	34 (0.8)	597 (3.5)	42 (0.7)	577 (3.2)	24 (0.6)	548 (4.1)
Slovak Republic	9 (0.5)	525 (6.4)	49 (0.9)	541 (4.2)	42 (1.0)	532 (3.2)	32 (1.0)	548 (3.2)	42 (0.8)	536 (4.7)	26 (1.0)	522 (4.1)
Slovenia	10 (0.6)	537 (4.7)	52 (1.0)	551 (2.5)	38 (1.0)	532 (2.6)	34 (1.1)	556 (2.8)	42 (1.0)	545 (2.9)	24 (1.0)	523 (3.0)
South Africa	36 (1.0)	321 (3.5)	31 (0.9)	352 (5.6)	33 (0.8)	304 (6.4)	33 (1.1)	331 (4.9)	33 (0.8)	344 (4.6)	34 (0.9)	308 (4.9)
Spain	18 (0.6)	526 (2.3)	52 (0.7)	533 (1.6)	30 (0.7)	523 (2.7)	41 (0.8)	539 (1.8)	34 (0.7)	528 (2.0)	25 (0.7)	513 (3.1)
Sweden	7 (0.6)	555 (5.3)	55 (1.0)	561 (2.8)	37 (1.2)	548 (2.8)	36 (1.2)	573 (2.9)	45 (1.0)	553 (2.8)	19 (0.9)	534 (3.7)
Trinidad and Tobago	22 (1.0)	479 (4.4)	48 (1.3)	481 (3.7)	29 (1.2)	479 (4.7)	28 (1.1)	497 (4.5)	42 (1.1)	485 (3.5)	30 (1.1)	462 (3.7)
United Arab Emirates	24 (0.7)	460 (3.9)	46 (0.7)	462 (3.8)	31 (0.8)	435 (4.1)	25 (0.7)	479 (3.8)	41 (0.6)	461 (3.8)	34 (0.7)	428 (4.1)
United States	9 (0.6)	540 (5.8)	44 (1.0)	560 (3.5)	47 (1.0)	544 (3.4)	21 (0.9)	573 (3.8)	43 (0.8)	556 (3.5)	36 (0.9)	536 (3.6)
International Avg.	18 (0.1)	509 (0.7)	50 (0.2)	520 (0.5)	32 (0.1)	501 (0.6)	33 (0.2)	526 (0.5)	41 (0.2)	515 (0.5)	26 (0.2)	494 (0.6)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A dash (-) indicates comparable data not available.

An "r" indicates data are available for at least 70% but less than 85% of the students.

**Exhibit 9.11: Students Arrive at School Feeling Tired or Hungry (Continued)**

Country	Students Feel Tired						Students Feel Hungry					
	Never		Sometimes		Every Day or Almost Every Day		Never		Sometimes		Every Day or Almost Every Day	
	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	Percent of Students	Average Achievement
<b>Benchmarking Participants</b>												
Buenos Aires, Argentina	--	--	--	--	--	--	--	--	--	--	--	--
Ontario, Canada	11 (0.8)	542 (7.1)	48 (1.1)	553 (3.6)	41 (1.3)	535 (4.0)	25 (1.3)	559 (4.2)	44 (1.4)	549 (4.1)	30 (1.7)	527 (4.0)
Quebec, Canada	11 (1.0)	545 (5.9)	56 (1.4)	551 (3.3)	33 (1.3)	543 (3.6)	22 (1.4)	558 (4.4)	41 (1.0)	551 (3.1)	37 (1.5)	539 (3.8)
Denmark (3)	10 (0.6)	511 (5.6)	53 (1.1)	508 (3.3)	38 (1.3)	489 (3.5)	34 (1.3)	519 (3.7)	45 (1.0)	503 (3.5)	21 (1.0)	474 (4.9)
Norway (4)	9 (0.7)	512 (4.8)	51 (1.1)	523 (2.4)	40 (1.1)	512 (2.6)	25 (1.2)	525 (2.8)	50 (1.2)	522 (2.4)	25 (0.9)	500 (2.8)
Moscow City, Russian Fed.	20 (0.9)	612 (3.0)	52 (0.9)	619 (2.4)	28 (1.0)	601 (2.8)	39 (1.0)	618 (2.5)	40 (0.9)	615 (2.8)	21 (0.8)	599 (2.9)
Eng/Afr/Zulu - RSA (5)	29 (1.2)	394 (4.5)	45 (1.1)	427 (7.1)	25 (1.0)	396 (8.3)	33 (1.2)	414 (7.2)	39 (1.1)	418 (6.3)	27 (1.0)	394 (7.2)
Andalusia, Spain	18 (0.9)	523 (3.5)	48 (1.0)	529 (2.1)	34 (1.1)	521 (2.9)	41 (1.1)	534 (2.5)	32 (1.0)	525 (2.5)	26 (1.0)	514 (2.8)
Madrid, Spain	15 (0.8)	546 (3.8)	51 (1.0)	554 (2.1)	33 (1.1)	543 (2.9)	45 (1.2)	557 (2.3)	36 (1.0)	549 (2.9)	20 (0.8)	533 (3.1)
Abu Dhabi, UAE	22 (1.0)	424 (5.0)	44 (1.1)	426 (5.8)	34 (1.2)	404 (5.9)	21 (0.9)	440 (6.8)	41 (1.1)	428 (5.9)	38 (1.3)	400 (5.9)
Dubai, UAE	22 (0.8)	518 (3.5)	48 (0.9)	526 (2.4)	30 (0.8)	501 (3.2)	29 (0.7)	534 (2.9)	42 (0.6)	525 (2.2)	29 (0.8)	489 (3.0)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016