

## Exhibit E.1: Percentages of Students with Mathematics Achievement Too Low for Estimation

Country	Percentage of Students with Achievement Too Low for Estimation*	Percentage of Students with Zero Score Points**	Average Percent Correct Across Items	Average Percent Missing Across Items
Albania	2 (0.6)	1 (0.2)	52 (1.1)	9 (0.7)
Armenia	2 (0.3)	1 (0.1)	55 (0.7)	18 (0.5)
Australia	2 (0.2)	0 (0.1)	55 (0.6)	4 (0.2)
Azerbaijan	5 (0.6)	1 (0.2)	49 (0.7)	12 (0.5)
Bahrain	5 (0.4)	1 (0.2)	42 (0.8)	8 (0.3)
Belgium (Flemish)	1 (0.2)	0 (0.1)	53 (0.6)	4 (0.2)
Belgium (French)	2 (0.2)	0 (0.1)	47 (0.5)	7 (0.3)
Bosnia & Herzegovina	7 (0.6)	2 (0.3)	38 (0.7)	14 (0.5)
Ψ Brazil	16 (0.8)	5 (0.4)	30 (0.7)	15 (0.4)
Bulgaria	4 (0.7)	0 (0.1)	55 (0.8)	8 (0.8)
Canada	2 (0.2)	0 (0.1)	50 (0.4)	6 (0.2)
Chile	7 (0.5)	1 (0.2)	37 (0.5)	10 (0.4)
Chinese Taipei	0 (0.0)	0 (0.0)	71 (0.4)	1 (0.1)
Cyprus	4 (0.4)	1 (0.1)	51 (0.5)	10 (0.5)
Czech Republic	1 (0.2)	0 (0.1)	56 (0.5)	6 (0.2)
Denmark	1 (0.2)	0 (0.1)	55 (0.5)	8 (0.4)
England	1 (0.2)	0 (0.1)	61 (0.6)	4 (0.2)
Finland	1 (0.2)	0 (0.1)	56 (0.6)	5 (0.3)
France	3 (0.3)	1 (0.2)	46 (0.7)	12 (0.4)
Georgia	3 (0.3)	1 (0.2)	50 (0.8)	12 (0.4)
Germany	2 (0.3)	0 (0.1)	55 (0.5)	7 (0.2)
Hong Kong SAR	1 (0.1)	0 (0.1)	71 (0.9)	2 (0.2)
Hungary	2 (0.3)	0 (0.1)	54 (0.7)	3 (0.2)
Ψ Iran, Islamic Rep. of	21 (1.1)	4 (0.4)	33 (0.6)	22 (0.8)
Ireland	1 (0.2)	0 (0.1)	59 (0.7)	3 (0.1)
Italy	2 (0.2)	0 (0.1)	52 (0.6)	8 (0.3)
Japan	0 (0.1)	0 (0.0)	68 (0.5)	4 (0.2)
Jordan	10 (0.8)	1 (0.2)	37 (1.1)	7 (0.3)
Kazakhstan	3 (0.3)	1 (0.1)	46 (0.7)	5 (0.2)
Korea, Rep. of	0 (0.1)	0 (0.0)	69 (0.6)	2 (0.2)
Kosovo	4 (0.5)	1 (0.2)	41 (0.6)	8 (0.5)
Kuwait	9 (0.7)	1 (0.2)	43 (0.7)	11 (0.5)
Latvia	1 (0.1)	0 (0.1)	57 (0.6)	4 (0.2)
Lithuania	0 (0.1)	0 (0.0)	63 (0.6)	2 (0.1)
Macao SAR	0 (0.1)	0 (0.0)	67 (0.3)	2 (0.1)
Montenegro	3 (0.3)	1 (0.2)	44 (0.4)	13 (0.3)
Morocco	6 (0.5)	0 (0.1)	44 (0.9)	8 (0.5)
Netherlands	1 (0.2)	0 (0.1)	58 (0.5)	5 (0.3)
New Zealand	3 (0.3)	1 (0.2)	47 (0.5)	6 (0.2)
North Macedonia	5 (0.5)	1 (0.2)	44 (0.7)	13 (0.4)
Norway (5)	1 (0.2)	0 (0.1)	57 (0.5)	7 (0.3)
Oman	10 (0.6)	1 (0.2)	37 (0.8)	9 (0.3)
Poland	1 (0.1)	0 (0.0)	60 (0.5)	4 (0.2)
Portugal	1 (0.2)	0 (0.1)	53 (0.6)	6 (0.2)
Qatar	5 (0.5)	1 (0.2)	41 (0.7)	6 (0.3)
Romania	2 (0.4)	0 (0.1)	59 (1.1)	5 (0.4)
Saudi Arabia	9 (0.6)	1 (0.2)	36 (0.8)	6 (0.3)
Serbia	1 (0.3)	0 (0.1)	55 (0.8)	6 (0.3)
Singapore	0 (0.1)	0 (0.0)	72 (0.6)	1 (0.1)
Slovak Republic	2 (0.3)	0 (0.1)	53 (0.7)	5 (0.3)
Slovenia	2 (0.2)	0 (0.1)	52 (0.4)	6 (0.2)
South Africa (5)	10 (0.5)	1 (0.1)	36 (0.6)	4 (0.2)
Spain	2 (0.2)	0 (0.1)	49 (0.4)	8 (0.2)
Sweden	1 (0.2)	1 (0.1)	57 (0.6)	7 (0.3)
Türkiye (5)	1 (0.2)	0 (0.1)	61 (0.9)	2 (0.1)
United Arab Emirates	4 (0.1)	1 (0.0)	50 (0.2)	5 (0.1)
United States	2 (0.2)	0 (0.1)	53 (0.7)	5 (0.2)
Uzbekistan	5 (0.5)	1 (0.2)	36 (0.6)	7 (0.3)
<b>Benchmarking Participants</b>				
Ontario, Canada	2 (0.3)	0 (0.1)	49 (0.8)	6 (0.4)
Quebec, Canada	1 (0.2)	0 (0.1)	53 (0.7)	5 (0.3)
Abu Dhabi, UAE	6 (0.3)	1 (0.1)	44 (0.4)	5 (0.1)
Dubai, UAE	1 (0.1)	0 (0.0)	62 (0.3)	4 (0.1)
Sharjah, UAE	3 (0.3)	1 (0.1)	50 (0.8)	6 (0.2)

\* Students were considered to have achievement too low for estimation if their performance on the assessment was no better than could be achieved by simply guessing on the multiple-choice assessment items. However, such students were assigned scale scores (plausible values) by the achievement scaling procedure, despite concerns about their reliability.

\*\* Students who received zero score points did not answer any assessment items correctly and have achievement too low for estimation.

Ψ Reservations about reliability because the percentage of students with achievement too low for estimation exceeds 15% but does not exceed 25%.

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