

Exhibit M8.3: Advanced Mathematics Teachers Majored in Mathematics and Education

Reported by Advanced Mathematics Teachers

Country	Major in Mathematics and Mathematics Education		Major in Mathematics but No Major in Mathematics Education		Major in Mathematics Education but No Major in Mathematics		All Other Majors	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
France	32 (2.7)	465 (4.1)	68 (2.7)	460 (3.9)	0 (0.4)	~ ~	0 (0.2)	~ ~
Italy	49 (4.1)	417 (10.9)	41 (3.8)	444 (8.7)	1 (0.6)	~ ~	9 (1.9)	379 (17.6)
Lebanon	61 (4.1)	534 (4.6)	33 (2.5)	538 (5.1)	1 (0.6)	~ ~	5 (4.2)	514 (14.0)
Norway	18 (3.5)	466 (11.4)	80 (3.7)	461 (4.0)	0 (0.0)	~ ~	2 (1.3)	~ ~
Portugal	76 (3.1)	480 (3.4)	19 (2.6)	489 (5.3)	3 (1.2)	496 (8.1)	2 (1.0)	~ ~
Russian Federation	60 (3.8)	492 (7.7)	39 (3.8)	468 (7.7)	0 (0.0)	~ ~	1 (0.5)	~ ~
Russian Federation 6hr+	69 (5.1)	555 (8.3)	30 (5.0)	505 (16.6)	0 (0.0)	~ ~	1 (0.5)	~ ~
Slovenia	56 (4.3)	465 (4.7)	29 (3.5)	452 (8.4)	13 (2.6)	458 (7.1)	2 (0.6)	~ ~
Sweden	71 (3.7)	440 (4.8)	20 (3.0)	426 (7.2)	7 (2.0)	437 (9.5)	2 (0.9)	~ ~
United States _r	58 (3.2)	478 (8.2)	22 (2.7)	500 (8.6)	11 (1.9)	497 (13.6)	9 (1.0)	482 (8.7)
International Avg.	53 (1.2)	471 (2.4)	39 (1.1)	471 (2.3)	4 (0.5)	472 (4.9)	4 (0.6)	458 (8.0)

SOURCE: IEA's Trends in International Mathematics and Science Study - TIMSS Advanced 2015

The Russian Federation 6hr+ results are for a subset of the Russian Federation students. This subset of students are in an Intensive stream that have at least 6 hours of mathematics lessons per week.

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

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

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