

Exhibit P10.2: Students Like Learning Physics

Reported by Physics Students

Students were scored according to their degree of agreement with twelve statements on the *Students Like Learning Physics* scale. Students who **Very Much Like Learning Physics** had a score on the scale of at least 11.4, which corresponds to their “agreeing a lot” with six of the twelve statements and “agreeing a little” with the other six, on average. Students who **Do Not Like Learning Physics** had a score no higher than 8.8, which corresponds to their “disagreeing a little” with six of the twelve statements and “agreeing a little” with the other six, on average. All other students **Like Learning Physics**.

Country	Very Much Like Learning Physics		Like Learning Physics		Do Not Like Learning Physics		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Norway	36 (1.2)	560 (3.7)	49 (1.1)	494 (5.4)	15 (1.0)	422 (7.3)	10.7 (0.05)
Lebanon	35 (2.4)	439 (8.7)	52 (1.7)	400 (5.7)	13 (2.1)	392 (10.6)	10.7 (0.12)
Portugal	32 (1.7)	512 (6.0)	51 (1.3)	455 (5.6)	17 (1.1)	416 (5.9)	10.6 (0.08)
Russian Federation	28 (1.6)	568 (9.2)	50 (1.2)	501 (6.2)	22 (1.2)	447 (8.1)	10.3 (0.09)
United States	21 (1.6)	513 (8.7)	48 (1.0)	442 (8.0)	31 (1.9)	380 (11.9)	9.8 (0.10)
Sweden	15 (0.6)	540 (6.8)	46 (1.4)	472 (6.1)	39 (1.4)	403 (6.4)	9.3 (0.05)
Italy	15 (0.9)	467 (10.0)	45 (0.9)	384 (7.4)	40 (1.3)	331 (7.0)	9.4 (0.06)
Slovenia	15 (1.0)	599 (8.5)	63 (1.7)	538 (3.3)	23 (1.6)	472 (6.0)	9.8 (0.05)
France	11 (0.6)	454 (5.4)	54 (0.8)	386 (4.1)	35 (1.0)	329 (4.5)	9.4 (0.04)
International Avg.	23 (0.5)	517 (2.6)	51 (0.4)	452 (2.0)	26 (0.5)	399 (2.6)	

This TIMSS Advanced questionnaire scale was established in 2015 based on the combined response distribution of all countries that participated in TIMSS Advanced 2015. To provide a point of reference for country comparisons, the scale centerpoint of 10 was located at the mean of the combined distribution. The units of the scale were chosen so that 2 scale score points corresponded to the standard deviation of the distribution.

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

How much do you agree with these statements about the physics you are studying?

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
1) I enjoy conducting experiments or investigations in physics -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2) I get a sense of satisfaction when I solve physics problems -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3) I feel bored when I do my physics schoolwork* -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4) I like studying for my physics class outside of school -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5) It is interesting to learn physics laws and principles -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6) I dread my physics class* -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7) I am studying physics because I like to learn new things -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8) I enjoy figuring out challenging physics -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9) Physics is one of my favorite subjects -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10) Jobs that require physics skills seem interesting to me -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11) I wish I did not have to study physics* -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12) I enjoy thinking about the world in terms of laws of physics -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Reverse coded

Very Much Like Learning Physics 11.4 Do Not Like Learning Physics 8.8

Exhibit P10.2: Students Like Learning Physics (Continued)

Students Like Learning Physics by Gender

Reported by Physics Students

Country	Very Much Like Learning Physics		Like Learning Physics		Do Not Like Learning Physics	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Norway						
Females	27 (1.7)	541 (6.3)	52 (1.8)	487 (8.1)	20 (1.7)	425 (8.7)
Males	40 (1.5)	566 (4.4)	48 (1.4)	497 (5.5)	12 (1.0)	421 (8.5)
Lebanon						
Females	35 (3.2)	436 (11.7)	51 (2.5)	412 (6.9)	13 (2.9)	399 (12.7)
Males	35 (2.8)	440 (9.8)	53 (2.2)	393 (7.4)	13 (1.8)	388 (15.6)
Portugal						
Females	28 (3.4)	507 (10.7)	51 (3.3)	449 (7.5)	22 (2.9)	408 (11.9)
Males	34 (1.8)	514 (6.6)	51 (1.3)	456 (5.8)	15 (1.2)	419 (6.5)
Russian Federation						
Females	20 (1.6)	567 (14.5)	48 (1.5)	504 (6.7)	32 (1.6)	446 (10.4)
Males	34 (2.0)	568 (8.2)	51 (1.6)	499 (7.4)	15 (1.0)	448 (8.6)
United States						
Females	13 (1.9)	487 (14.5)	42 (2.1)	427 (11.5)	44 (3.1)	371 (13.1)
Males	27 (1.8)	521 (10.1)	51 (1.7)	450 (7.9)	22 (2.1)	391 (12.6)
Sweden						
Females	9 (0.8)	536 (13.2)	41 (2.1)	473 (6.7)	50 (2.1)	412 (6.6)
Males	19 (0.8)	541 (7.5)	49 (1.3)	471 (6.8)	32 (1.3)	393 (8.1)
Italy						
Females	11 (0.9)	430 (13.2)	42 (1.4)	366 (9.3)	47 (1.6)	332 (7.7)
Males	18 (1.5)	486 (11.1)	48 (1.4)	398 (8.4)	34 (1.5)	329 (9.6)
Slovenia						
Females	13 (1.9)	595 (15.3)	53 (2.8)	516 (8.8)	34 (2.5)	470 (9.0)
Males	16 (1.4)	601 (9.2)	67 (2.1)	545 (4.2)	18 (1.9)	474 (9.0)
France						
Females	7 (0.6)	428 (9.5)	52 (1.2)	372 (4.7)	41 (1.4)	322 (5.0)
Males	15 (1.0)	464 (5.9)	57 (1.1)	397 (5.0)	29 (1.2)	338 (5.7)
International Avg.						
Females	18 (0.7)	503 (4.1)	48 (0.7)	445 (2.7)	34 (0.8)	398 (3.3)
Males	26 (0.6)	522 (2.8)	53 (0.5)	456 (2.2)	21 (0.5)	400 (3.3)

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

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