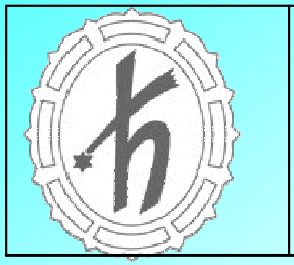

Środowiskowe
Seminarium
Dydaktyki Fizyki

Porównanie systemów szkolnych

według raportów PISA, TALIS, OECD

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Kierownik Zakładu Dydaktyki Fizyki UMK

Toruń, 16.03. 2011

W ostatnim raporcie PISA Polska wypadła szczególnie dobrze w naukach **przyrodniczych**

■ Figure I. ■
COMPARING COUNTRIES' AND ECONOMIES' PERFORMANCE

Statistically significantly **above** the OECD average
Not statistically significantly different from the OECD average
Statistically significantly **below** the OECD average

	On the overall reading scale	On the reading subscales					On the mathematics scale	On the science scale
		Access and retrieve	*Integrate and interpret*	*Reflect and evaluate*	*Continuous texts*	*Non-continuous texts*		
OECD average	493	495	493	494	494	493	496	501
Shanghai-China	556	549	558	557	564	539	600	575
Korea	539	542	541	542	538	542	546	538
Finland	536	532	538	536	535	535	541	554
Hong Kong-China	533	530	530	540	538	522	555	549
Singapore	526	526	525	529	522	539	562	542
Canada	524	517	522	535	524	527	527	529
New Zealand	521	521	517	531	518	532	519	532
Japan	520	530	520	521	520	518	529	539
Australia	515	513	513	523	513	524	514	527
Netherlands	508	519	504	510	506	514	526	522
Belgium	506	513	504	505	504	511	515	507
Norway	503	512	502	505	505	498	498	500
Estonia	501	503	500	503	497	512	512	528
Switzerland	501	505	502	497	498	505	534	517
Poland	500	500	503	498	502	496	495	508
Iceland	500	507	503	496	501	499	507	496
United States	500	492	495	512	500	503	487	502
Liechtenstein	499	508	498	498	495	506	536	520
Sweden	497	505	494	502	499	498	494	495
Germany	497	501	501	491	496	497	513	520
Ireland	496	498	494	502	497	496	487	508
France	496	492	497	495	492	498	497	498

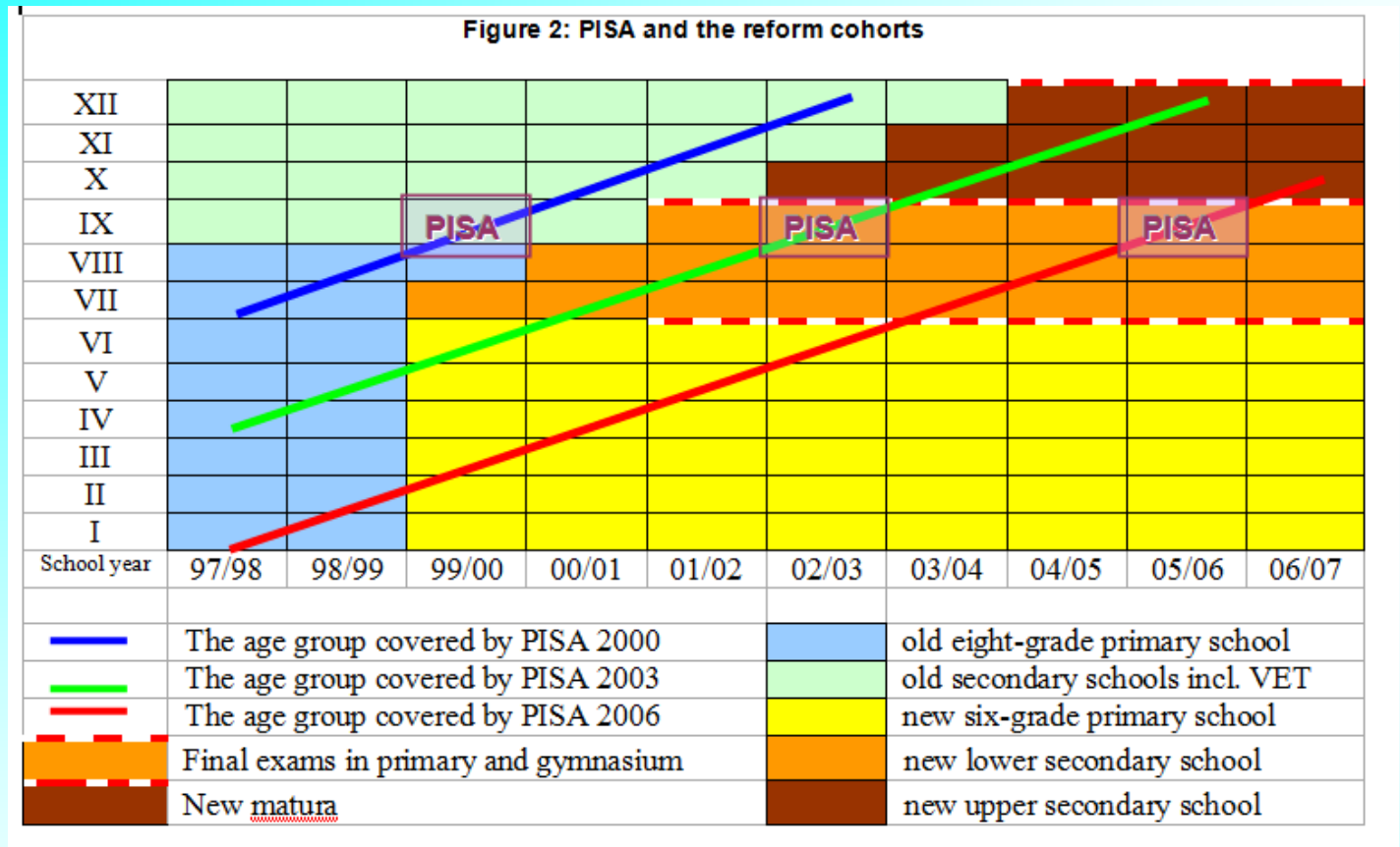
PISA-46643496.pdf

Table 1: Top 10 reading over time, PISA

	2000		2003		2006	
1	Finland	549	Finland	543	Korea	556
2	Netherlands	537	Korea	534	Finland	547
3	Canada	535	Canada	528	Hong Kong	536
4	Hong Kong	532	Australia	525	Canada	527
5	Australia	528	Liechtenstein	525	New Zealand	521
6	Ireland	528	New Zealand	522	Ireland	517
7	New Zealand	526	Ireland	515	Australia	513
8	Japan	525	Sweden	514	Liechtenstein	510
9	United Kingdom	524	Netherlands	513	Poland	508
10	Korea	522	Hong Kong	510	Sweden	507

Polska dokonała znacznego postępu w wynikach PISA. W czytaniu Polska jest na 9-tym miejscu na świecie (508 pkt). Wynik w naukach przyrodniczych wrósł z 483 pkt. w 2000 r. do 498 w 2003 r. i 498 w 2006 r.

Improvements in student performance in Poland, measured by PISA, have been impressive. In math, Poland improved its score from 470 points in 2000, to 490 in 2003, and to 495 in 2006 (see Table 1). Reading scores have steadily improved over time, from 479, to 497, to 508 in the latest round. In fact, in the first assessment, Poland ranked below the OECD country average in reading. In 2003, Poland reached the OECD average; and by 2006, Poland scored above average, ranking 9th among all countries in the world. In science, the scores are 483, 498 and 498.

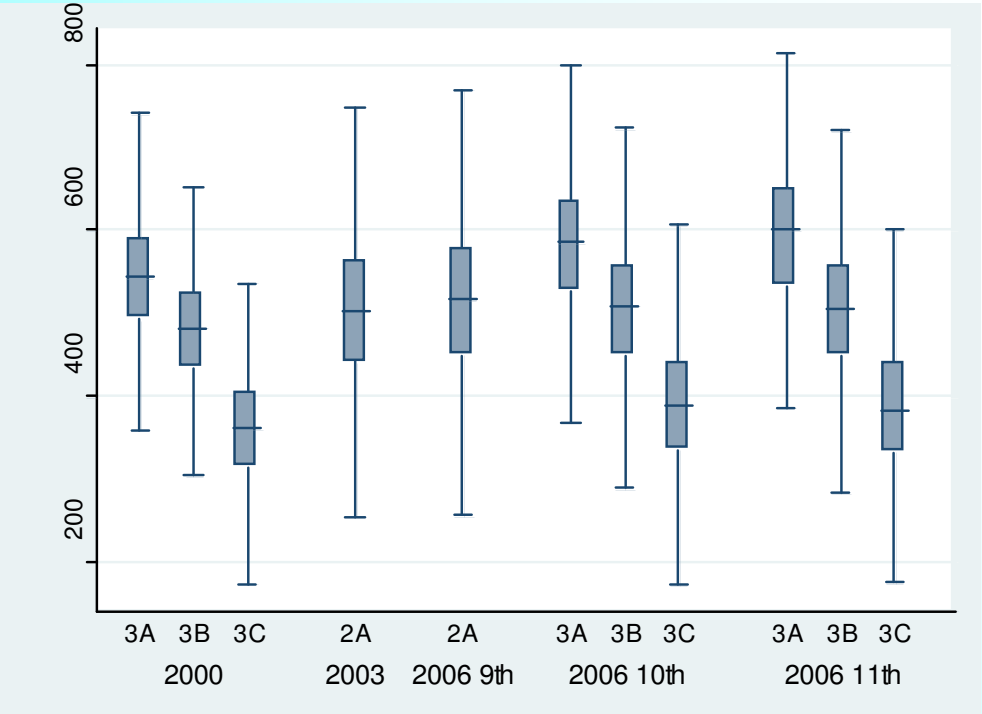


Dalszy komentarz z ww. cytowanego raportu OECD
W testach PISA 2006 brała udział młodzież znacznie lepiej przygotowana do egzaminów testowych niż młodzież w latach 2000 i 2003

22. PISA 2006 participants were well acquainted with doing tests. They took the final primary school test and had three years of preparation for the gymnasium exam. Konarzewski (2004) shows that teachers took the 2002 final exams, the first of their kind, very seriously. One-third of teachers in a representative sampling said that they changed their teaching to familiarise students with test requirements. Testing was also considered when choosing textbooks and other supporting teaching materials. Twenty-six percent of the teachers said that unsatisfactory test results were not caused by students' poor knowledge or low skills, but by their lack of experience in taking such tests. Teachers thus concluded that it was important to practice taking tests. Konarzewski (2008) shows that a substantial amount of time is devoted to solving test-type problems and doing mock exams in all gymnasia. Some five percent of the respondents have changed their assessment schemes, making them more test-like. In his conclusion, Konarzewski (2008) writes: "The test exam, being so predictable as ours, each year less and less measures the competences of gymnasium leavers but more and more the effort and time spent by schools on training students to do the exams."

Raport sugeruje (2º zdanie), że ta znaczna poprawa wyniku PISA może wynikać z przeniesienia 15-latków ze szkół zawodowych do gimnazjów i powątpiewa, czy ta zmiana przenosi się też na starsze lata.

60. There is thus no doubt that students who were in vocational tracks in 2000 would have scored much lower without the reform. The results show that the reform improved the overall mean performance of 15-year-olds in Poland, mainly by boosting the performance of students in former vocational and mixed general-vocational tracks. Two questions remain for policy makers: will the positive impact of the reform last, that is, will 15-year-old students in lower secondary schools still have higher achievement one or two years later, after they were again separated into tracks at the upper secondary school level? And what particular changes in curriculum or in the structure of the school system boosted student scores? These two issues are investigated below by using data from the PISA 2006 national option in Poland, which provides performance scores for 16 and 17-year-olds, and by employing decomposition analysis.



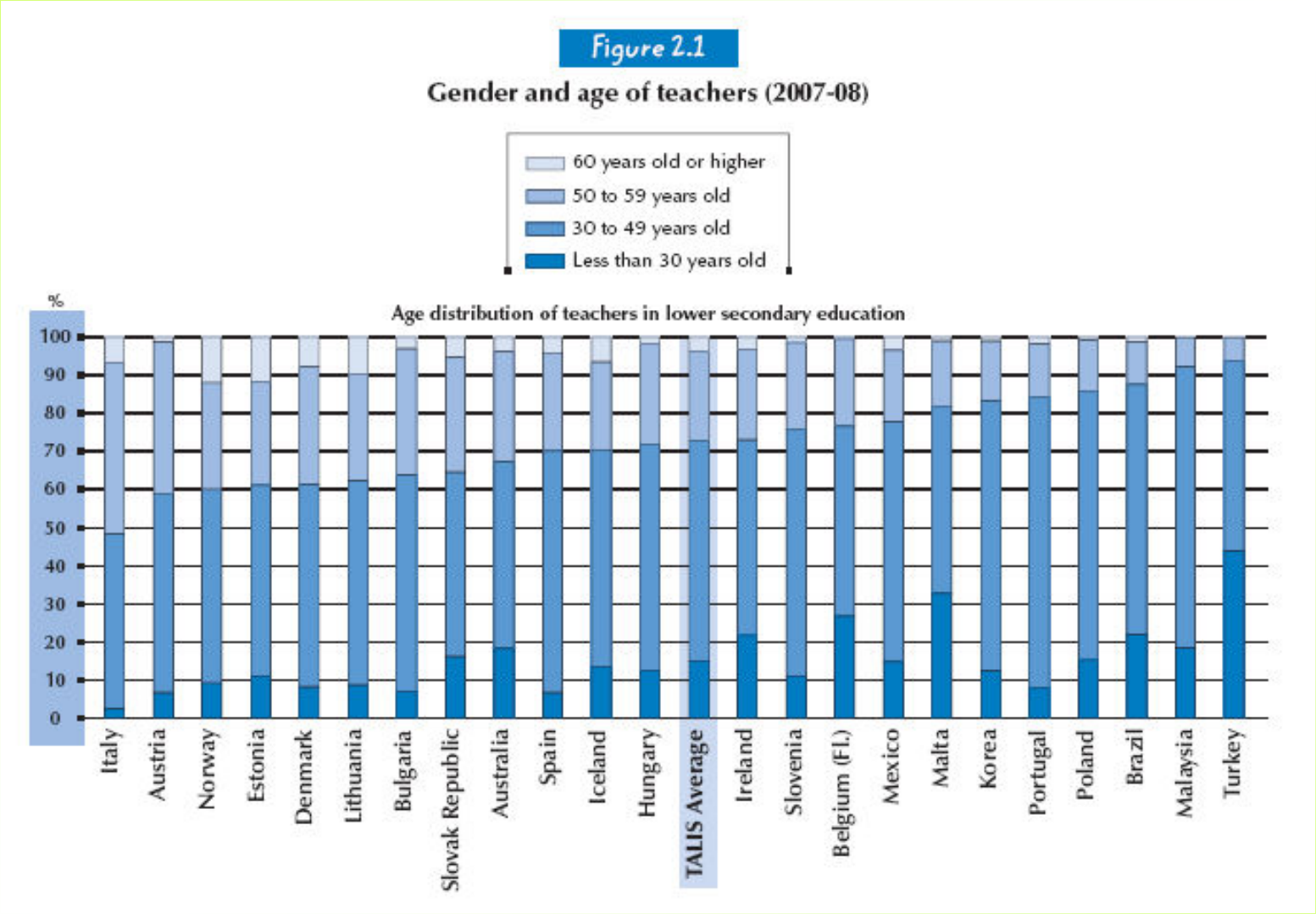
64. Table 7 gives estimates of the relative difference between achievement of students in vocational and other tracks in 2000 and in 2006, separately for the tenth and eleventh grades. The results are striking. While the overall mean performance of Polish students improved significantly, the difference between students in vocational and other tracks remained almost the same, and even increased for 17-year-olds.

Thus, the stratification of Polish students in the old secondary school system remains under the new name of upper secondary schools.

Figure 6: PISA scores compared over time and with 16 and 17-year-olds

Dokument
ıu Microsoft Office

Raport TALIS (Teaching And Learning International Survey)
jest ogólnie dla Polski pozytywny.
Wskazuje na ogół na znane, z obserwacji lokalnej, trendy.



Adobe Acrobat Document

Nauczyciele w Polsce są w przeważającej części młodzi.

http://www.oecd.org/document/0/0,3746,en_2649_39263238_38052160_1_1_1_1,00.html

	Teachers with qualification at ISCED level 5B or below		Teachers with an ISCED level 5A Bachelor degree		Teachers with an ISCED level 5A Master degree or a higher level of qualification	
	Mean	(S.E.)	Mean	(S.E.)	Mean	(S.E.)
Australia	9.8	(1.24)	8.7	(0.20)	10.6	(0.51)
Austria	11.3	(0.22)	14.1	(2.72)	10.2	(0.25)
Belgium (Fl.)	8.6	(0.44)	15.5	(4.03)	8.0	(0.72)
Brazil	18.9	(2.00)	20.8	(0.87)	24.8	(2.87)
Bulgaria	28.0	(4.37)	28.4	(3.40)	32.3	(2.93)
Denmark	12.8	(4.47)	12.4	(0.39)	18.7	(1.83)
Estonia	14.7	(1.02)	13.3	(0.43)	14.9	(0.43)
Hungary	23.2	(6.28)	17.1	(0.53)	15.7	(0.59)
Iceland	10.4	(0.79)	15.1	(0.74)	17.8	(2.41)
Ireland	5.9	(0.66)	5.9	(0.25)	7.9	(0.65)
Italy	28.4	(1.53)	26.3	(3.81)	32.0	(1.25)
Korea	55.5	(11.32)	31.5	(0.65)	34.4	(0.82)
Lithuania	11.1	(0.54)	11.5	(0.32)	12.5	(0.34)
Malaysia	10.5	(0.65)	12.0	(0.34)	13.6	(0.76)
Malta	7.6	(0.57)	7.8	(0.30)	8.0	(0.67)
Mexico	27.4	(2.62)	36.4	(2.26)	53.1	(5.31)
Norway	16.0	(3.02)	9.9	(0.39)	12.7	(0.81)
Poland	28.7	(8.87)	27.5	(4.46)	29.0	(1.21)
Portugal	21.1	(3.54)	19.8	(1.07)	35.3	(3.34)
Slovak Republic	12.4	(2.90)	9.9	(2.81)	9.6	(0.37)
Slovenia	7.7	(0.22)	9.3	(0.31)	14.0	(2.98)
Spain	23.8	(2.20)	22.1	(1.22)	26.2	(0.49)
Turkey	10.6	(1.07)	15.0	(0.76)	19.3	(2.95)
TALIS average	**17.6**	**(0.80)**	**17.0**	**(0.41)**	**20.0**	**(0.41)**

Denotes categories that include less than 5% of teachers.

Source: OECD, *TALIS Database*.

StatLink http://dx.doi.org/10.1787/607807256201

Nauczyciele w Polsce są dobrze wykształceni.

W Polsce 56.2% nauczycieli w gimnazjach ma wyższe wykształcenie, podobnie jak we Włoszech (54.5%),

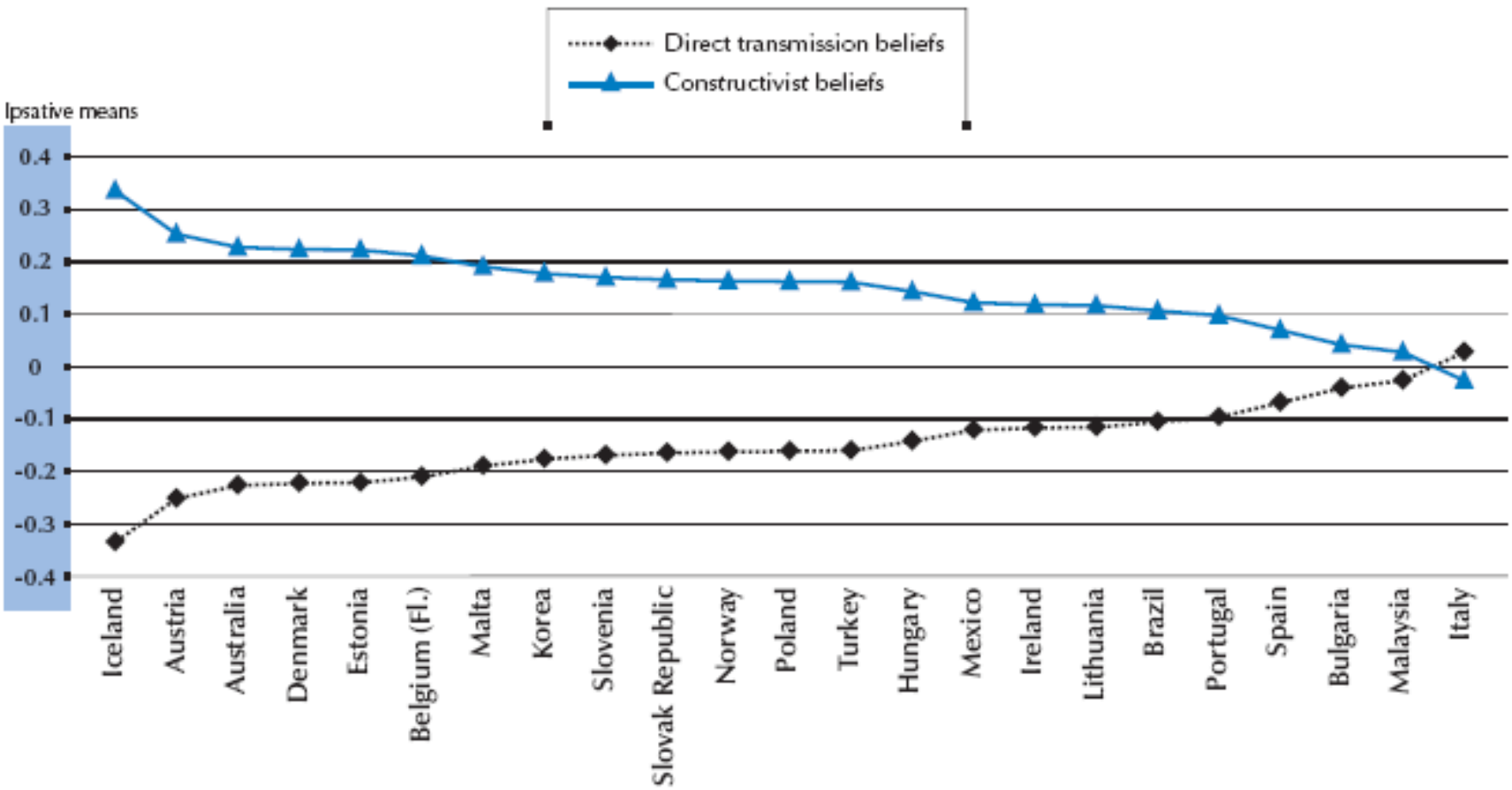
w Norwegii tylko 25.9% a w Irlandii 11.8%.

http://www.oecd.org/document/0/0,3746,en_2649_39263238_38052160_1_1_1_1,00.html

Figure 4.2

Country profiles of beliefs about the nature of teaching and learning (2007-08)

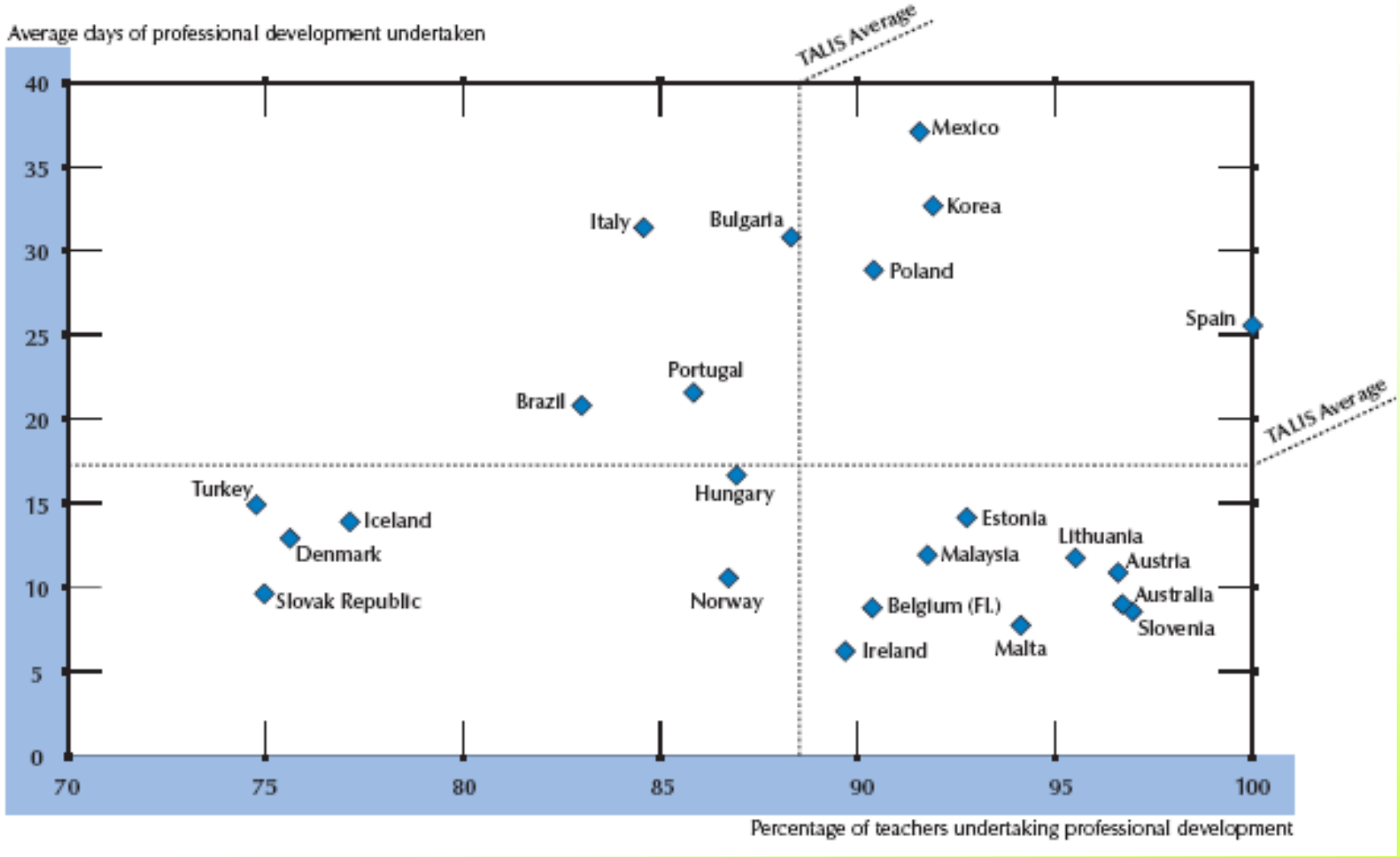
Country mean of ipsative scores



W Polsce dominuje konstruktywistyczny sposób nauczania, co więcej, Polska jest w środku „stawki”.

Figure 3.2

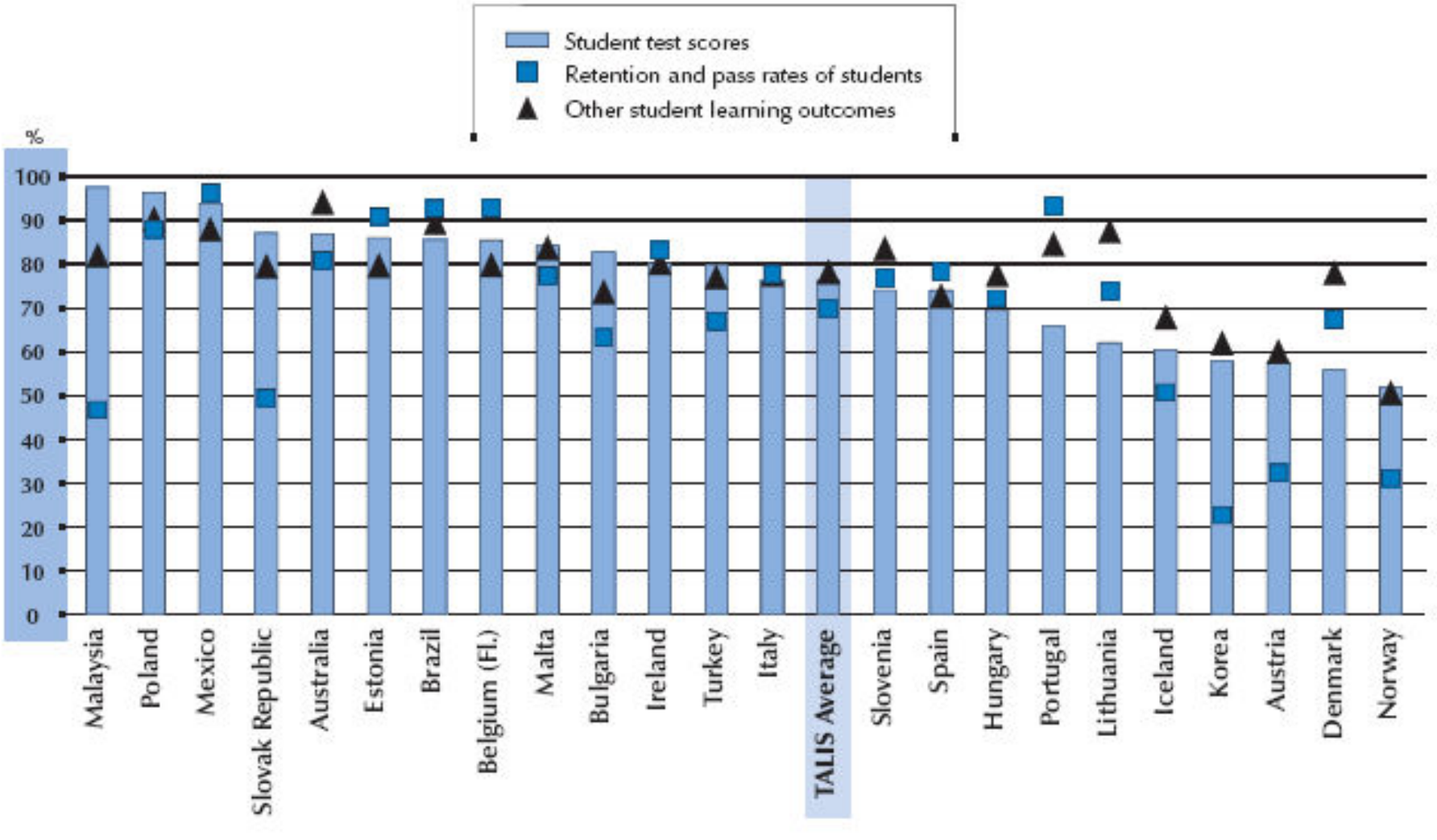
Comparison of the level and intensity of participation in professional development (2007-08)



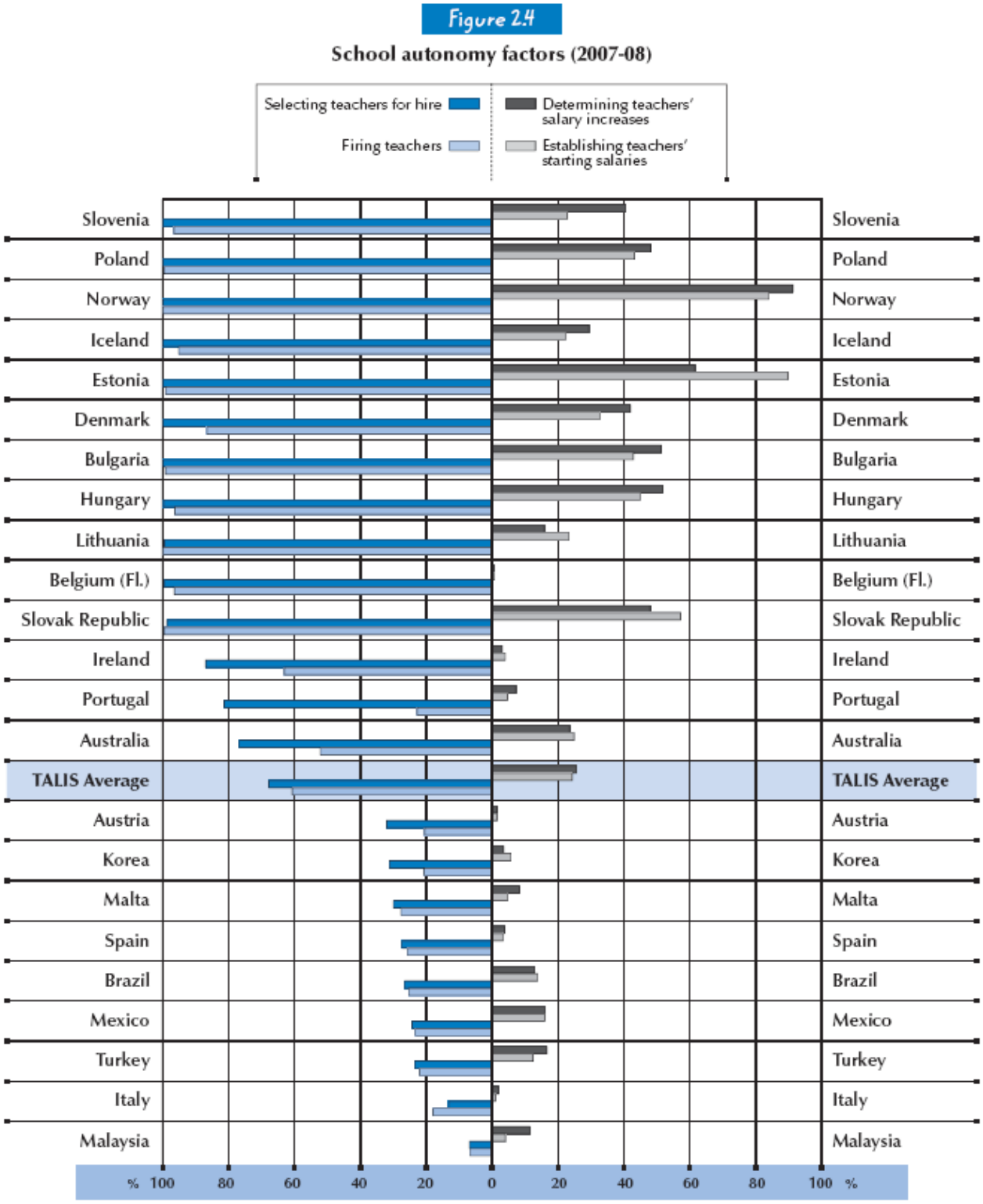
Nauczyciele kształcą się i są szkoleniami usatysfakcjonowani

Figure 5.2

Criteria of school evaluations (2007-08)



Ale niestety, testy egzaminacyjne i wyniki olimpiad pozostają głównym kryterium oceny szkół (i nauczycieli również).
Ustępujemy w tym względzie tylko Malezji, a „wyprzedzamy” Meksyk, Estonię i Brazylię.



Szkoły (a w zasadzie ich dyrektorzy) mają w Polsce przytłaczającą autonomię decyzyjną.

Osobiście uważam, że system managerski zarządzania szkołą jest efektywny.

Table 2.5

School resources (2007-08)

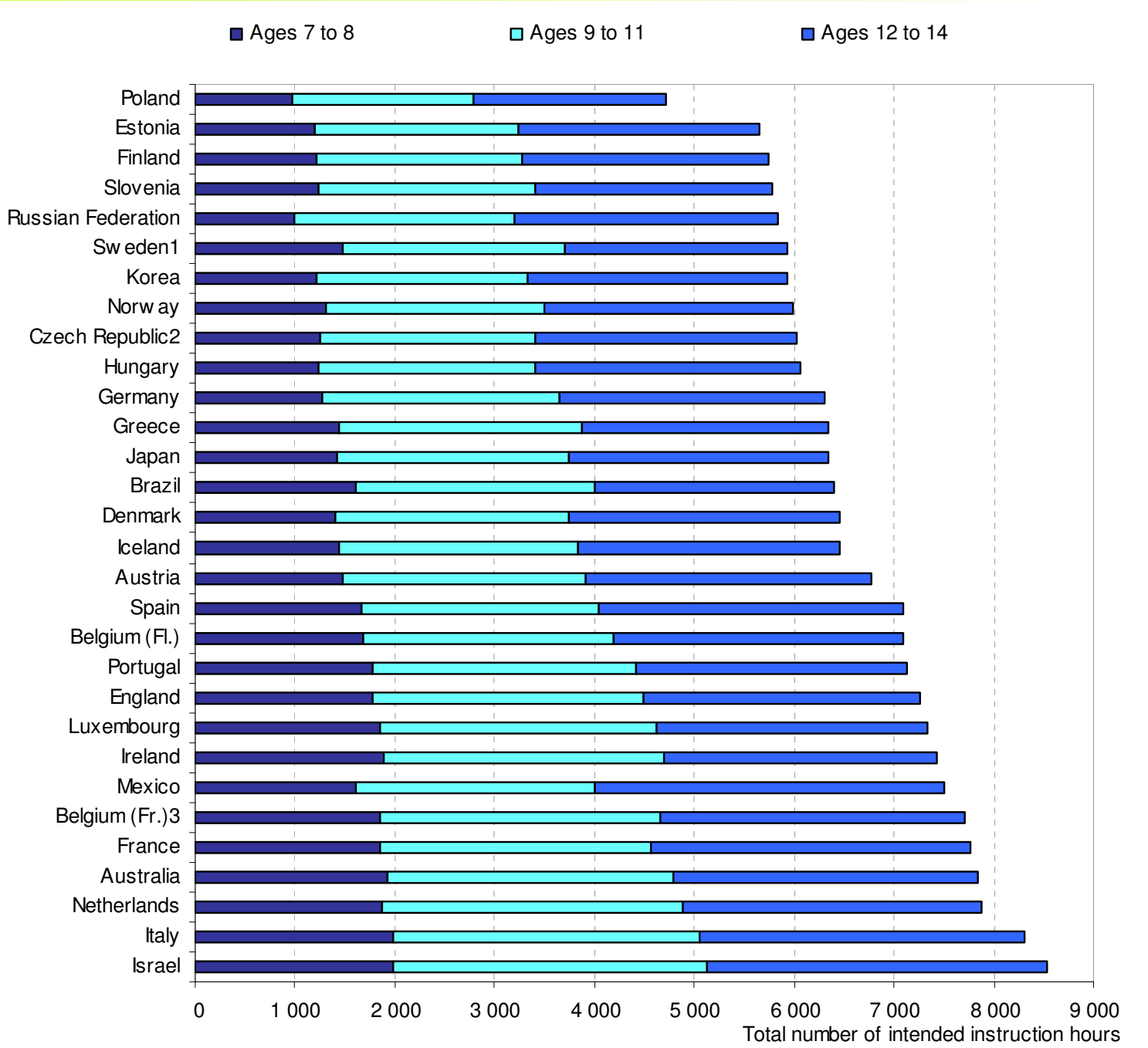
Percentage of teachers of lower secondary education whose school principal reported that the following resource issues hinder instruction "a lot" or "to some extent" in their school

	A lack of qualified teachers		A lack of laboratory technicians		A lack of instructional support personnel		A lack of other support personnel		Shortage or inadequacy of instructional materials		Shortage or inadequacy of computers for instruction		Shortage or inadequacy of library materials		Shortage or inadequacy of other equipment	
	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)
Australia	40.5	(4.73)	14.0	(3.25)	38.1	(4.17)	40.4	(4.24)	15.5	(3.13)	32.2	(4.56)	20.9	(3.67)	31.7	(4.36)
Austria	48.8	(3.12)	21.3	(2.66)	68.7	(3.08)	77.5	(2.82)	12.2	(2.30)	25.5	(2.90)	16.8	(2.55)	35.0	(3.44)
Belgium (Fl.)	31.5	(3.76)	7.3	(2.14)	36.7	(3.89)	35.5	(4.11)	13.7	(2.74)	33.2	(3.78)	23.9	(3.43)	29.7	(3.78)
Brazil	31.1	(3.08)	65.1	(3.03)	61.1	(2.98)	63.1	(3.19)	28.6	(2.73)	59.2	(3.18)	57.9	(2.61)	64.1	(2.75)
Bulgaria	25.2	(4.18)	17.8	(2.99)	15.2	(2.92)	13.3	(2.46)	44.7	(3.99)	51.0	(5.60)	55.6	(5.62)	67.0	(5.18)
Denmark	28.2	(4.44)	3.3	(1.84)	25.4	(4.13)	17.5	(3.77)	23.1	(4.10)	22.6	(4.13)	25.5	(4.55)	27.5	(5.01)
Estonia	65.6	(3.58)	17.1	(2.96)	51.6	(3.85)	41.0	(4.12)	36.4	(4.03)	27.1	(3.66)	44.2	(4.36)	45.3	(4.50)
Hungary	22.1	(5.03)	29.6	(6.57)	48.5	(6.36)	36.2	(3.77)	39.4	(4.09)	47.0	(6.26)	37.8	(6.64)	62.9	(5.83)
Iceland	39.0	(0.18)	30.8	(0.18)	36.8	(0.19)	34.1	(0.17)	15.8	(0.13)	27.6	(0.15)	24.6	(0.15)	20.4	(0.15)
Ireland	38.4	(4.63)	82.6	(3.64)	63.6	(5.00)	62.7	(4.69)	34.2	(4.44)	62.5	(4.42)	66.3	(4.78)	62.6	(4.63)
Italy	51.9	(3.45)	53.6	(3.09)	56.6	(3.34)	54.8	(3.41)	42.9	(3.39)	41.6	(3.03)	45.9	(3.13)	46.4	(3.37)
Korea	18.6	(3.36)	39.6	(4.28)	45.2	(4.59)	43.9	(4.28)	27.8	(3.90)	28.4	(3.97)	39.5	(4.30)	41.9	(4.11)
Lithuania	60.6	(3.77)	40.2	(3.91)	47.3	(3.91)	38.9	(4.34)	61.6	(3.72)	66.0	(3.46)	49.3	(3.86)	71.3	(3.79)
Malaysia	45.9	(4.05)	23.8	(2.80)	31.0	(3.46)	32.0	(3.63)	26.2	(3.53)	36.6	(3.83)	36.9	(2.98)	30.3	(3.19)
Malta	26.2	(0.22)	32.8	(0.23)	34.4	(0.18)	51.0	(0.20)	30.1	(0.23)	41.9	(0.20)	28.4	(0.21)	43.8	(0.19)
Mexico	63.8	(4.00)	64.9	(3.39)	64.9	(3.32)	69.2	(3.37)	60.6	(3.37)	68.0	(3.33)	69.3	(3.58)	70.5	(3.35)
Norway	29.7	(3.71)	29.6	(4.14)	51.1	(4.97)	43.7	(5.08)	43.1	(4.50)	41.1	(4.59)	37.3	(4.03)	53.1	(4.85)
Poland	11.8	(2.85)	21.0	(3.50)	21.3	(3.16)	19.0	(2.71)	51.7	(4.38)	35.8	(4.18)	46.5	(4.57)	54.4	(4.56)
Portugal	15.9	(3.23)	47.6	(3.73)	78.5	(3.08)	80.0	(3.18)	36.6	(4.30)	67.3	(3.57)	39.1	(4.33)	70.3	(3.60)
Slovak Republic	30.5	(3.87)	24.9	(4.10)	33.1	(4.57)	23.8	(3.54)	38.7	(4.69)	57.1	(4.27)	53.5	(4.51)	64.1	(4.06)
Slovenia	24.6	(3.34)	17.9	(3.09)	33.9	(3.85)	29.8	(3.41)	18.5	(2.95)	25.0	(3.15)	20.4	(3.07)	33.7	(3.35)
Spain	34.0	(3.40)	13.6	(2.76)	80.5	(3.00)	75.7	(2.61)	24.4	(3.62)	41.0	(3.41)	37.3	(3.62)	50.1	(3.55)
Turkey	78.1	(4.98)	58.7	(4.80)	69.5	(4.55)	72.0	(4.32)	61.3	(4.98)	56.6	(5.88)	61.9	(5.30)	67.0	(5.67)
TALIS average	**37.5**	**(0.77)**	**32.9**	**(0.72)**	**47.5**	**(0.80)**	**45.9**	**(0.74)**	**34.2**	**(0.76)**	**43.2**	**(0.83)**	**40.8**	**(0.83)**	**49.7**	**(0.84)**

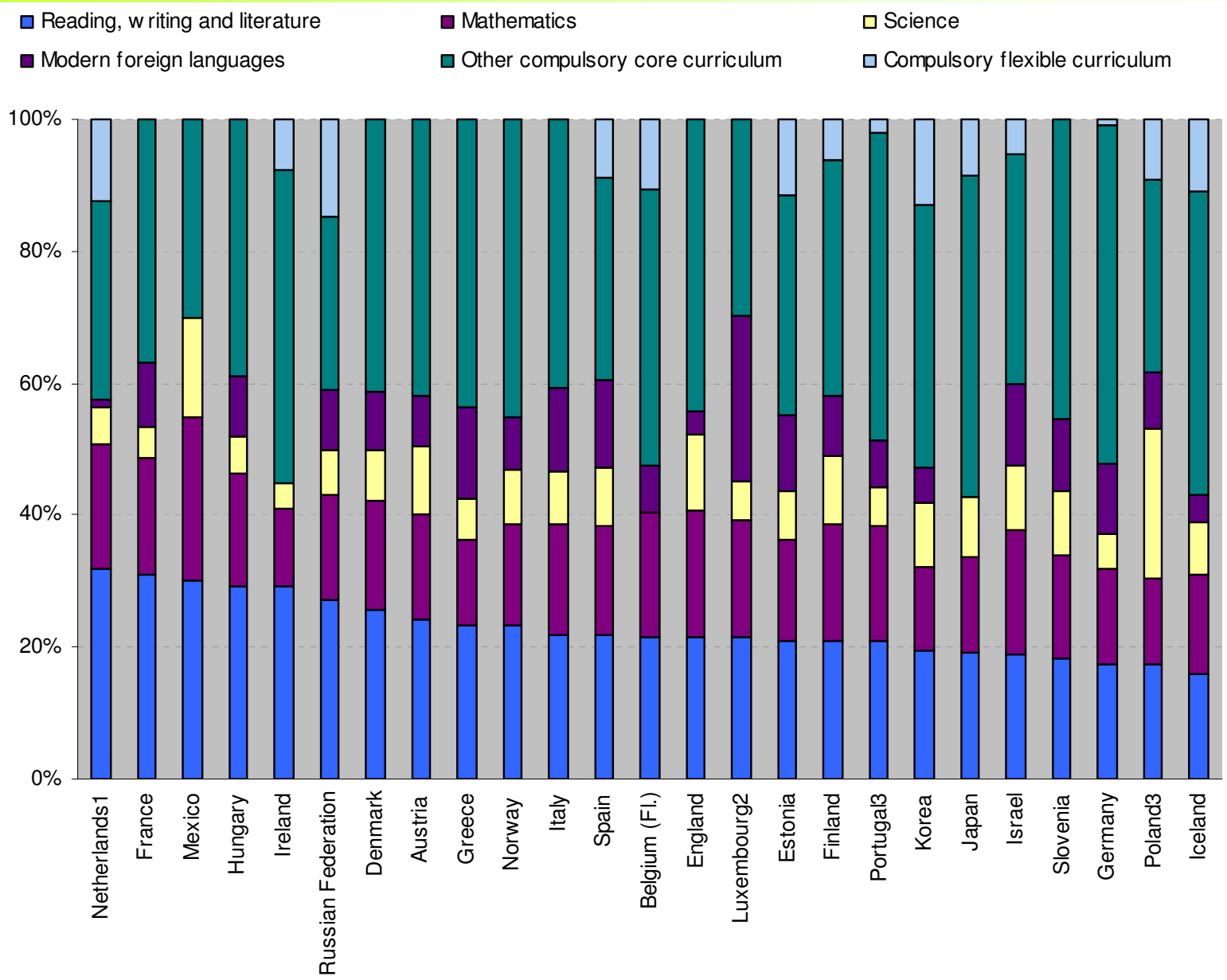
Source: OECD, *TALIS Database*.

StatLink http://dx.doi.org/10.1787/607784618372

Brak lub niewłaściwe podręczniki (51.7%) i brak wyposażenia (54.4%) są główną „bolączką" polskich nauczycieli.



Ilość godzin szkolnych w przedziale 7-14 lat jest najniższa w całym zestawieniu (!)

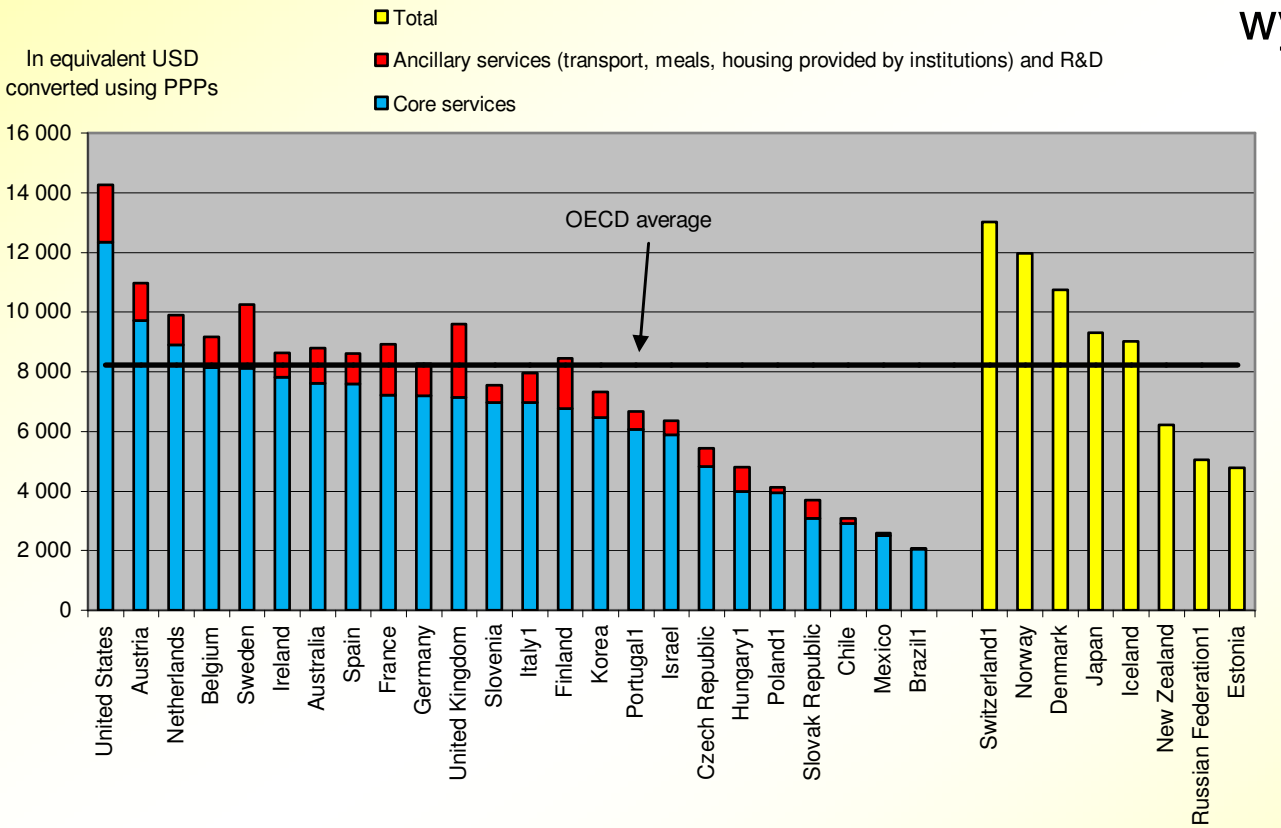


Na naukę języka ojczystego poświęca się w Polsce bardzo mało czasu na matematykę również prawie najmniej, dużo na nauki przyrodnicze.

Chart B1.1. Annual expenditure by educational institutions per student in primary through tertiary education, by type of services (2007)

Expenditure by educational institutions per student provides a measure of the unit costs of formal education. The chart shows annual expenditure by educational institutions per student by type of services in equivalent USD converted using purchasing power parities, based on full-time equivalents.

OECD countries as a whole spend USD 9 195 annually per student from primary through tertiary education: USD 6 756 per primary student, USD 8 153 per secondary student and USD 16 625 per tertiary student. On average, OECD countries spend nearly twice as much per student at the tertiary level as at the primary level. However, these averages mask a broad range of expenditure patterns across countries. When R&D activities and ancillary services are included, expenditure per student for all services may increase significantly. This is particularly true for Finland, France, Sweden and the United Kingdom.



1. Public institutions only.

Countries are ranked in descending order of expenditure by educational institutions per student for core services.

Source: OECD. Table B1.2. See Annex 3 for notes (*www.oecd.org/edu/eag2010*).

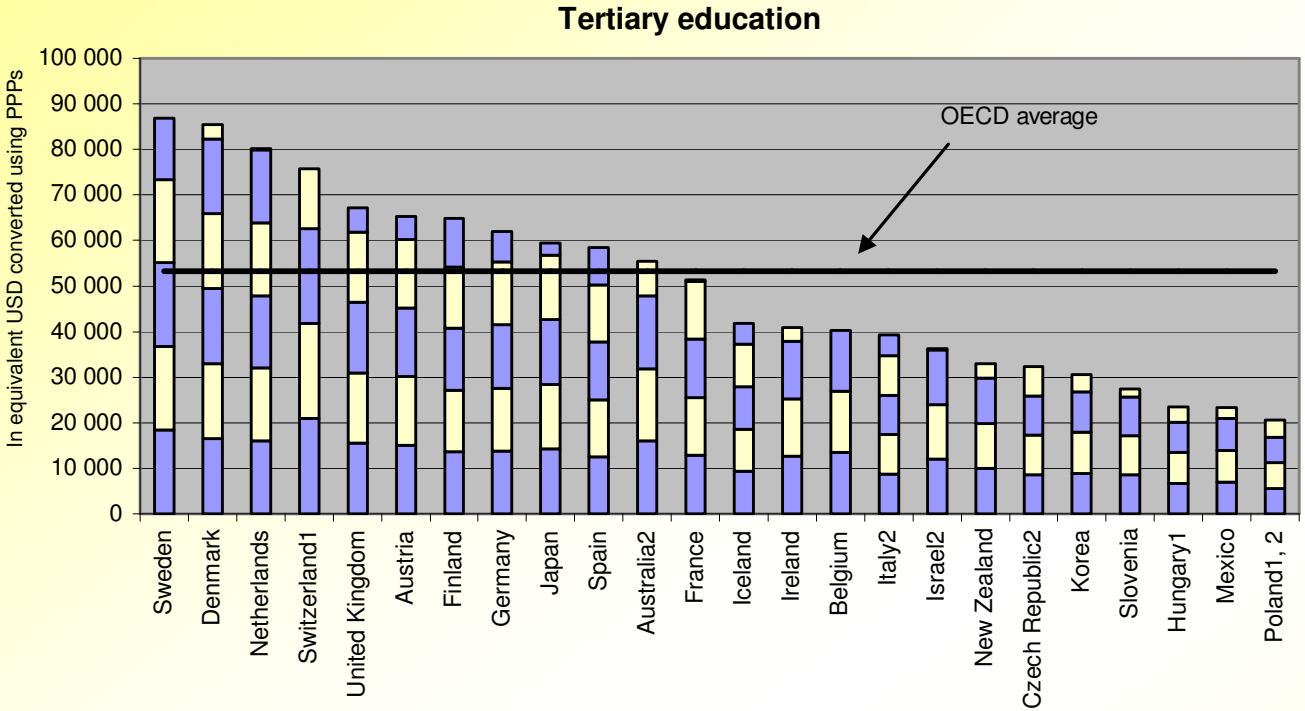
Raport OECD
„Education at glance”
jest mniej optymistyczny:

Polska, w liczbach bezwzględnych, wydaje na edukację mało...

http://www.oecd.org/document/52/0,3746,en_2649_39263238_45897844_1_1_1_1,00.html

Chart B1.5. Cumulative expenditure by educational institutions per student over the average duration of tertiary studies (2007)

Annual expenditure by educational institutions per student multiplied by the average duration of studies, in equivalent USD converted using PPPs



Note: Each segment of the bar represents the annual expenditure by educational institutions per student. The number of segments represents the average number of years a student remains in tertiary education.

1. Public institutions only.
2. Tertiary-type A and advanced research programmes only.

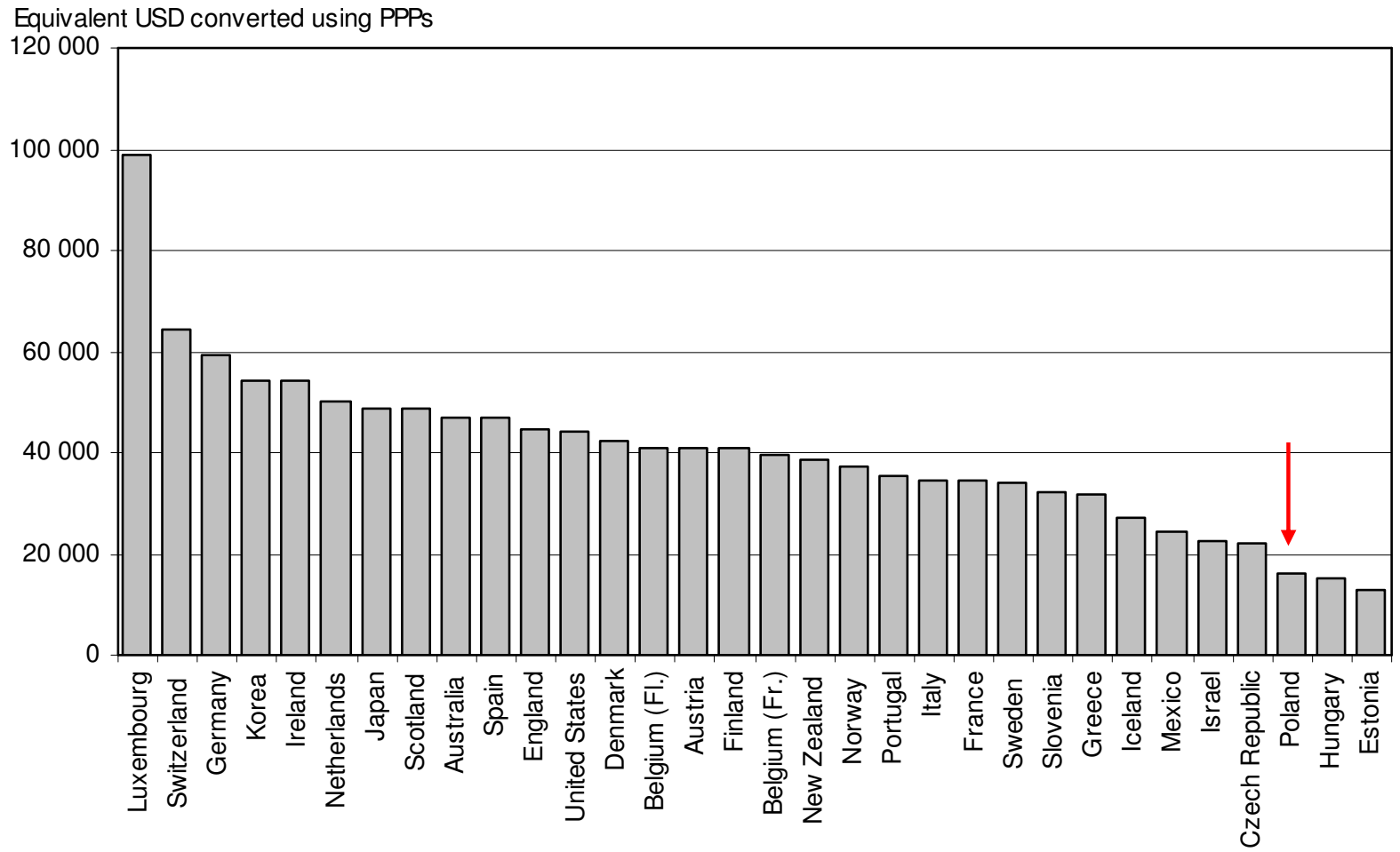
Countries are ranked in descending order of the total expenditure by educational institutions per student over the average duration of tertiary studies.

Source: OECD. Table B1.3b. See Annex 3 for notes (*www.oecd.org/edu/eag2010*).

Szczególnie mało Polska wydaje (ze środków publicznych) na kształcenie studentów...

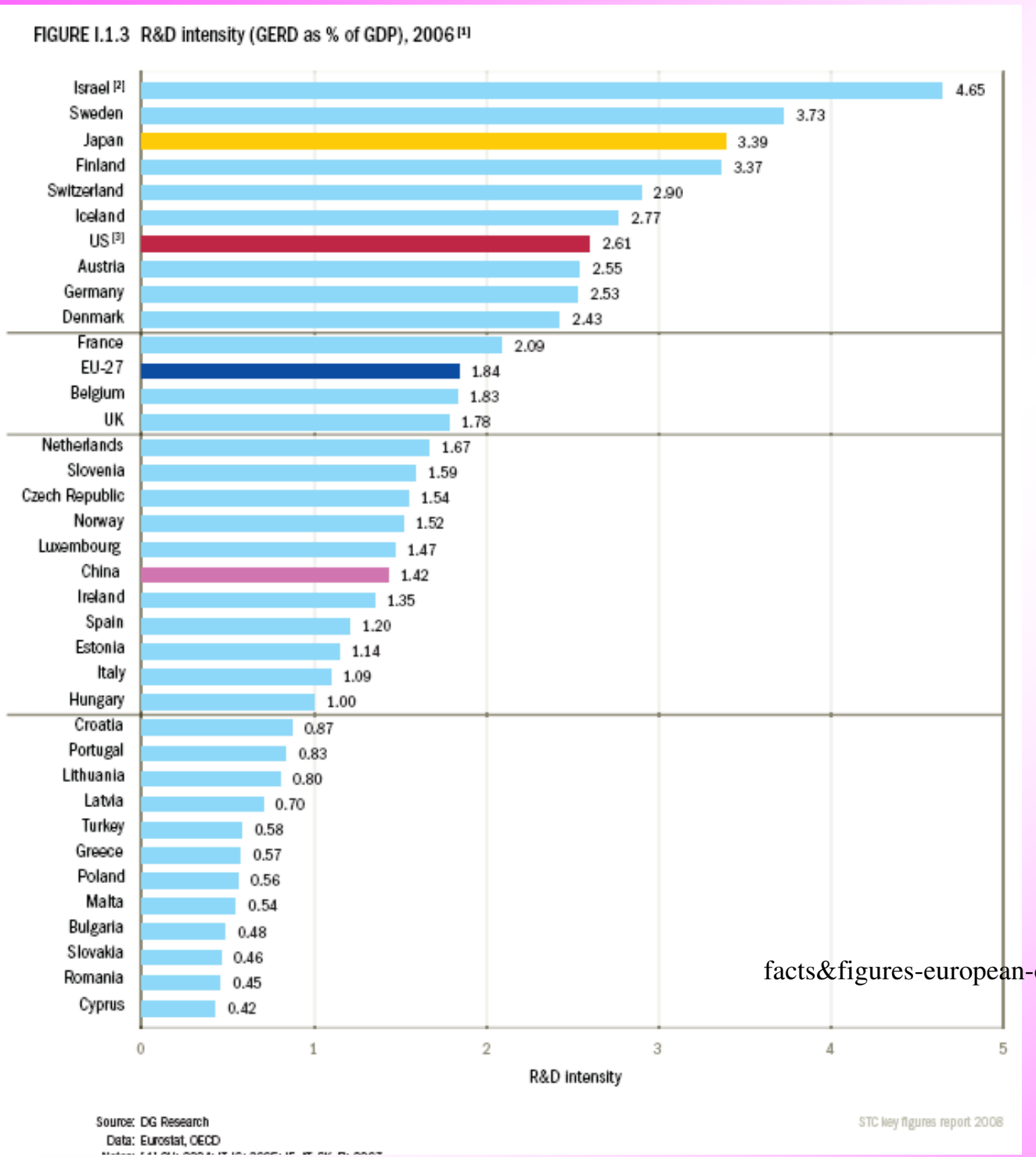
http://www.oecd.org/document/52/0,3746,en_2649_39263238_45897844_1_1_1_1,00.html

Salaries of teachers with at least 15 years of experience at the lower secondary level range from less than USD 16 000 in Hungary and in the partner country Estonia to USD 54 000 or more in Germany, Ireland, Korea and Switzerland, and exceed USD 98 000 in Luxembourg.



Pensje nauczycieli, w liczbach absolutnych, są jedne z najniższych w OECD

http://www.oecd.org/document/52/0,3746,en_2649_39263238_45897844_1_1_1_1,00.html



Nakłady na naukę, jako udział GNP, pozostają jedne z najniższych w UE.

facts&figures-european-commission-key-figures2008-2009-en.pdf

Komentarz końcowy:

1. Przedstawione statystyki wskazują na pewne mankamenty polskiego systemu szkolnictwa, jak słabość systemu kształcenia zawodowego, mała liczba zajęć szkolnych, mała ilość godzin matematyki i języka polskiego, nadmierna parametryzacja oceny (rankingów) szkół, słabość podręczników.

2. Przedstawione statystyki, w tym nakładów na kształcenie studentów dotyczą tylko wydatków publicznych. Należy szacować, że nakłady (prywatne) na kształcenie się w wyższych szkołach niepaństwowych są cyfrą znaczącą w całości statystyki.

3. Nakłady są podane jako liczby bezwzględne. Porównanie danych z tego samego dokumentu OECD całości wydatków na oświatę z *budżetu* Państwa wskazuje, że Polska wydaje podobną cyfrę (ok. 11%) jak średnia OECD.

4. Niestety, niskie liczby bezwzględne nakładów (i zarobków) oddają miejsce Polski w statystykach *ekonomicznych* OECD.
Dochód *pro capita* (w 2007 r.) był w Polsce ciągle niższy niż na Węgrzech.

5. Ostatecznym sprawdzianem systemów edukacyjnych jest umiejętność wykształcenia społeczeństwa osiągającego *kulturowy, cywilizacyjny i ekonomiczny sukces.*
Brak tego sukcesu oznacza słabość systemu edukacji.

6. Z uwagi na punkt 4, wróć do punktu 1... [GK, 12.03.2011]