# WHAT IS THE STUDENT-TEACHER RATIO AND HOW BIG ARE CLASSES?

- The average class in primary education in OECD countries has more than 21 students. Among all countries with available data, this number varies from more than 29 in Chile and China to nearly half that number in Luxembourg and the Russian Federation.

- In two-thirds of the countries with comparable data for 2000 and 2009, classes have tended to become smaller in primary education, most notably in countries that had relatively large classes in 2000, such as Korea and Turkey.

- On average in OECD countries, the number of students per class grows by two or more between primary and lower secondary education. In lower secondary education, the average class in OECD countries has about 24 students.

Chart D2.1. Average class size in primary education (2000, 2009)

Number of students per classroom

□ 2009   ◆ 2000
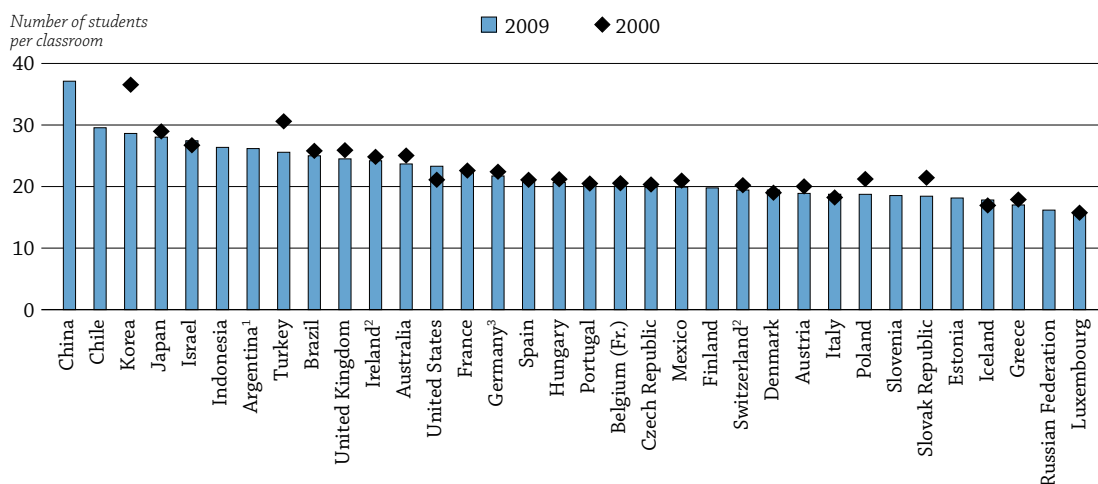
1. Year of reference 2008 instead of 2009.
2. Public institutions only.
3. Years of reference 2001 and 2009.
Countries are ranked in descending order of average class size in primary education in 2009.
Source: OECD. Argentina, China, Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme). 2009 data: Table D2.1. 2000 data: Table D2.4, available on line. See Annex 3 for notes (*www.oecd.org/edu/eag2011*).
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■ Context

Class size and student-teacher ratios are much-discussed aspects of education and, along with students' total instruction time (see Indicator D1), teachers' average working time (see Indicator D4), and the division of teachers' time between teaching and other duties, are among the determinants of the size of countries' teaching force. Together with teachers' salaries (see Indicator D3) and the age distribution of teachers (see Indicator D7, available on line), class size and student-teacher ratios also have a considerable impact on the level of current expenditure on education (see Indicator B6).

Smaller classes are often perceived as allowing teachers to focus more on the needs of individual students and reducing the amount of class time needed to deal with disruptions. Yet, while there is some evidence that smaller classes may benefit specific groups of students, such as those from disadvantaged backgrounds (Krueger, 2002), overall the evidence of the effects of differences in class size on student performance is weak. There is more evidence to support a positive

relationship between smaller class size and aspects of teachers' working conditions and outcomes (e.g. allowing for greater flexibility for innovation in the classroom, improved teacher morale and job satisfaction) (Hattie, 2009; OECD, 2009).

The ratio of students to teaching staff indicates how resources for education are allocated. Smaller student-teacher ratios often have to be weighed against higher salaries for teachers, increased professional development and teacher training, greater investment in teaching technology, or more widespread use of assistant teachers and other paraprofessionals whose salaries are often considerably lower than those of qualified teachers. And as larger numbers of children with special needs are integrated into mainstream classes, more use of specialised personnel and support services may limit the resources available for reducing student-teacher ratios.

■ Other findings

- **The student-teacher ratio decreases between primary and secondary level in 25 of the 34 countries with available data, despite a general increase in class size between these levels**. This decrease in the student-teacher ratio reflects differences in annual instruction time for students, which tends to increase with the level of education.

- On average in OECD countries, **the availability of teaching resources relative to the number of students in secondary education is more favourable in private than in public institutions**. This is most striking in Mexico where, at the secondary level, there are nearly 17 more students per teacher in public than in private institutions. On average across OECD countries, there is fewer than one student more per class in public than in private institutions at the lower and upper secondary levels.

■ Trends

From 2000 to 2009, the average class size in OECD countries decreased slightly in primary school and increased very slightly in lower secondary school, and the range of class size among OECD countries seemed to have narrowed. However, class size has tended to increase in some countries that had relatively small classes in 2000, most notably in Iceland.

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Analysis

Average class size in primary and lower secondary education

The average primary class in OECD countries has more than 21 students per class. When considering all countries with available data, that number varies widely: it ranges from fewer than 20 in Austria, the Czech Republic, Denmark, Estonia, Finland, Greece, Iceland, Italy, Luxembourg, Mexico, Poland, the Russian Federation, the Slovak Republic, Slovenia and Switzerland (public institutions) to more than 29 in Chile and China. At the lower secondary level, in general programmes, the average class in OECD countries has about 24 students. Among all countries with available data, that number varies from 20 or fewer in Denmark, Estonia, Finland, Iceland, Luxembourg, the Russian Federation, Slovenia, Switzerland (public institutions) and the United Kingdom to more than 35 students per class in Indonesia and Korea and to over 50 in China (Table D2.1). In one-third of OECD countries, lower secondary schools have between 22 and 25 students per class.

The number of students per class tends to increase between primary and lower secondary education. In Brazil, China, Greece, Indonesia, Israel, Japan, Korea, Mexico and Poland, the increase in average class size exceeds four students. Meanwhile, the United Kingdom and, to a lesser extent, Switzerland (public institutions only) and the United States show a drop in the number of students per class between these two levels of education (Chart D2.2).

The indicator on class size is limited to primary and lower secondary education because class size is difficult to define and compare at higher levels, where students often attend several different classes, depending on the subject area. However, data collected in the context of PISA 2009 give some insight into class size in a specific area (national language-of-instruction classes) for the grade attended by most 15-year-old students in the country (Box D2.1).

Box D2.1. National language-of-instruction class size in the grade attended by most 15-year-olds

Class size can affect how much time and attention a teacher can give to individual students, as well as the social dynamics among students. However, research on class size has generally found a weak relationship between class size and student performance (Ehrenberg, *et al.*, 2001; Piketty, 2006) or with other variables, like disciplinary climate or teacher-student relations (see *PISA 2009 Database*). Class size also seems to be more important in the earlier years of schooling than it is for 15-year-olds (Finn, 1998). However, all other things being equal, smaller classes will generally be beneficial; but PISA 2009 analysis has shown that reductions in class size are generally expensive (see also Indicator B7), and are a less efficient spending choice for improving learning outcomes than, for example, investing in the quality of teachers.

The 2009 PISA survey analysed the performance of 15-year-old students, with a focus on reading. As part of the contextual information collected, principals of institutions were asked to give the actual number of students in classes in the national language of instruction (reading, writing and literature) for the grade attended by most of the country's 15-year-old students. As the survey is representative of 15-year-olds, the size of classes is representative of class size in each country for this group of students.

Average class size, as well as the difference in class size between the smallest 10% of classes and largest 10% of classes, are shown on the chart below.

In OECD countries, the average class size corresponding to the grade attended by most of the country's 15-year-olds is 25 students. This is one more student than the class size reported in this indicator for lower secondary education. However, this difference should be interpreted with caution, owing to differences in methodology, and to differences in educational systems (15-year-olds can be enrolled in either lower or upper secondary levels). There are large differences in class size for 15-year-olds as there are at the lower secondary level, as shown in table D2.1. For the grade attended by most 15-year-olds, average class size varies from fewer than 20 students in Belgium, Denmark, Finland, Iceland and Switzerland, to nearly twice this number in Japan (37.1). Among the ten countries with the smallest class sizes for 15-year-olds, six are among the ten countries with the smallest class sizes at the lower secondary level (Denmark, Finland, Iceland, Luxembourg,

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the Russian Federation and Switzerland). Similarly, among countries with available data for both class size in Table D2.1 and in the grade attended by most of the country's 15-year-olds, the five countries with more than 30 students in the grade attended by most of the country's 15-year-olds (Brazil, Chile, Japan, Korea and Mexico) are among the six countries with the largest class size at the lower secondary level.

Average class size in national language-of-instruction classes for 15-year-olds (2009)
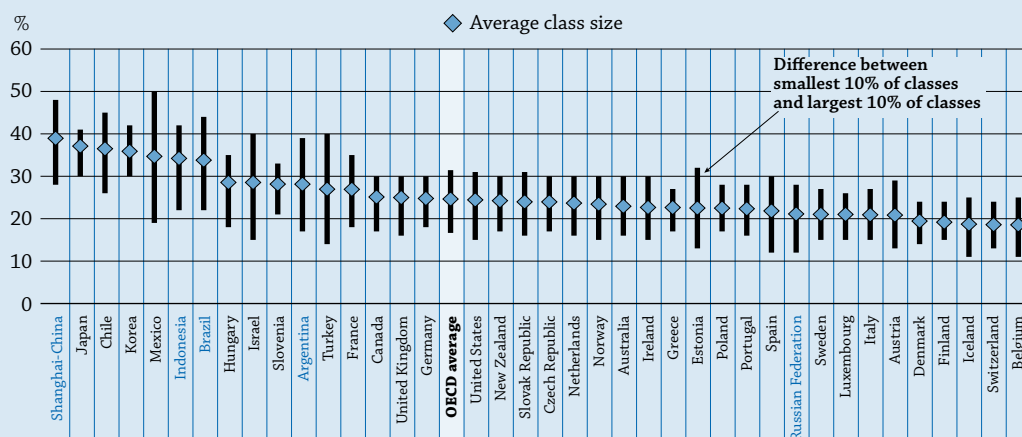
Countries are ranked in descending order of average class size in national language of instruction classes.
Source: OECD, *PISA 2009 Database.* See Annex 3 for notes (*www.oecd.org/edu/eag2011*).
*StatLink* ⛁ᴦ http://dx.doi.org/10.1787/888932461959

Average class size in the grade attended by most 15-year-olds varies widely among countries, but the distribution of class size within each country also varies. In some countries, such as Denmark and Finland, not only is the average class size among the smallest, but within the country, the difference between the smallest 10% of classes and the largest 10% is also small (10 students or fewer). In contrast, the difference between the smallest 10% and largest 10% of classes reaches at least twice this number in Brazil, Israel and Turkey, and at least three times this number in Mexico. The average class size in the grade attended by most 15-year-olds in these four countries is larger than the OECD average. However, the extent of the variation between the smallest and largest class size in each country is not necessarily linked to average class size. In Korea, the average class size is among the largest in OECD countries; but the difference between the smallest 10% and the largest 10% of class size is about 12 students, which is less than the average across OECD countries (14.8). In Spain, the average class size of nearly 22 students is smaller than the OECD average, but there are more variations in class size than on average in OECD countries (18 and 14.8 students, respectively).

Although the data on class size at the lower secondary level do not refer to reading classes, it is interesting to look at the relationship between PISA performance in reading and average class size. The class size in the language of instruction does not seem to have a direct impact on PISA performance in reading. For example, a country like Finland has both a small average class size in the language of instruction and holds the top ranking for performance in reading among the countries taken into account. However, countries like Japan and Korea, which are also among the top five countries in PISA reading performance, have an average class size that is among the largest. Large classes do not prevent these countries from having above-average performance in reading.

However, another important feature of schools is whether they create a climate that is conducive to teaching and learning. Similar class sizes may hide differences in the disciplinary climate or in teacher-student relations that may affect the reading performance of students. Even after accounting for socio-economic background and other aspects of the learning environment measured by PISA, student performance in reading in PISA 2009 is positively related to better teacher-student relations or a better disciplinary climate. For example, whereas Japan and Chile have similar class size, differences in disciplinary climate and teacher-students relations, and in the impact of these factors on performance, may help to explain the differences in overall average performance in reading between these countries.

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The size of the average primary school class in OECD countries has decreased slightly between 2000 and 2009 (21.4 students per class in 2009 as compared to 22 in 2000), even if some countries had implemented reforms on class size during that period. However, among countries with comparable data, class size decreased, and most notably (by more than three students) in countries that had larger class sizes in 2000, such as Korea and Turkey. Class size increased or was unchanged in countries that had the smallest class sizes in 2000, such as Denmark, Iceland, Italy and Luxembourg. Class size also increased between 2000 and 2009 in the United States (Chart D2.1). Variations in secondary school class size narrowed between 2000 and 2009: among countries with comparable data for both years, class size varied from 17.4 (Iceland) to 38.5 (Korea) in 2000 and from 19.5 (Iceland and Luxembourg) to 35.1 (Korea) in 2009 (Table D2.1 and Table D2.4, available on line).

Chart D2.2.   Average class size in educational institutions, by level of education (2009)
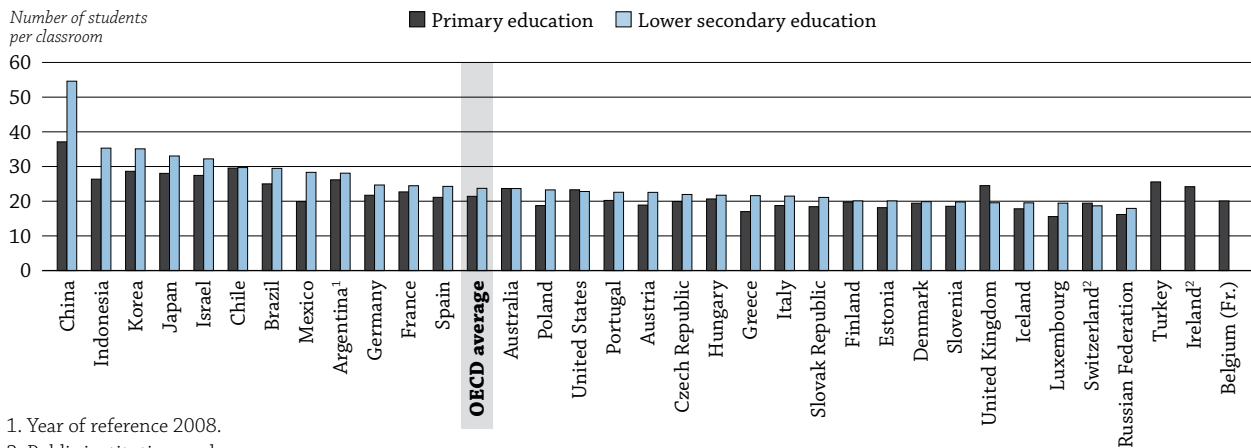
1. Year of reference 2008.
2. Public institutions only.
Countries are ranked in descending order of the average class size in lower secondary education.
Source: OECD. Argentina, China, Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme). Table D2.1. See Annex 3 for notes (*www.oecd.org/edu/eag2011*).
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Student-teacher ratios

The ratio of students to teaching staff compares the number of students (in full-time equivalent) to the number of teachers (in full-time equivalent) at a given level of education and in similar types of institutions. However, this ratio does not take into account the amount of instruction time for students compared to the length of a teacher's working day, nor how much time teachers spend teaching. It therefore cannot be interpreted in terms of class size (Box D2.2).

On average in OECD countries, there are 16 students for every teacher in primary schools. The student-teacher ratio ranges from 24 students or more per teacher in Brazil and Mexico, to fewer than 11 in Hungary, Italy, Norway and Poland (Chart D2.3).

Student-teacher ratios also vary, and to a larger extent, at the secondary school level, ranging from 30 students per full-time equivalent teacher in Mexico to fewer than 11 in Austria, Belgium, Iceland, Luxembourg, Norway, Portugal, the Russian Federation and Spain. On average among OECD countries, there are about 14 students per teacher at the secondary level (Table D2.2).

As the differences in student-teacher ratios indicate, there are fewer full-time equivalent students per full-time equivalent teachers at the secondary level than at the primary level of education. The student-teacher ratio decreases between primary and secondary school, despite a general increase in class size. This is true in all but nine OECD countries: Australia, Chile, Estonia, Hungary, Italy, Mexico, Poland, the United Kingdom and the United States.

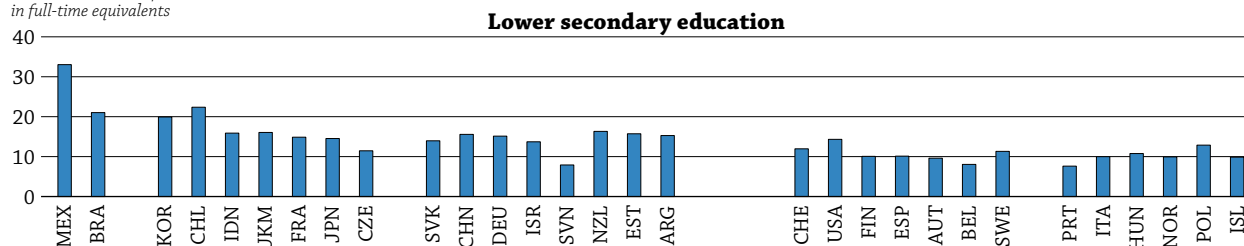**Chart D2.3.** **Ratio of students to teaching staff in educational institutions, by level of education (2009)**

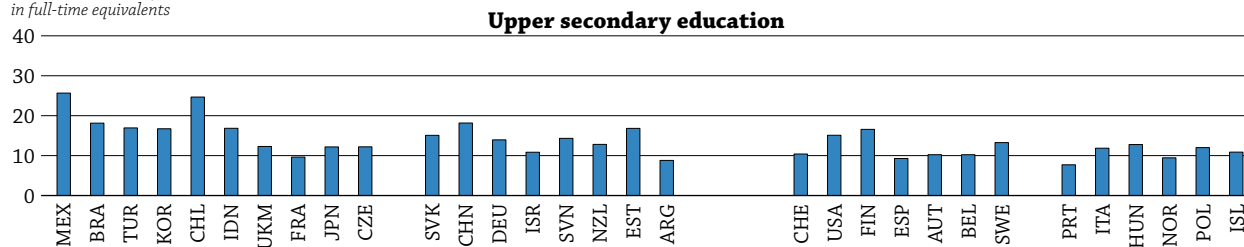*Number of students per teacher in full-time equivalents*
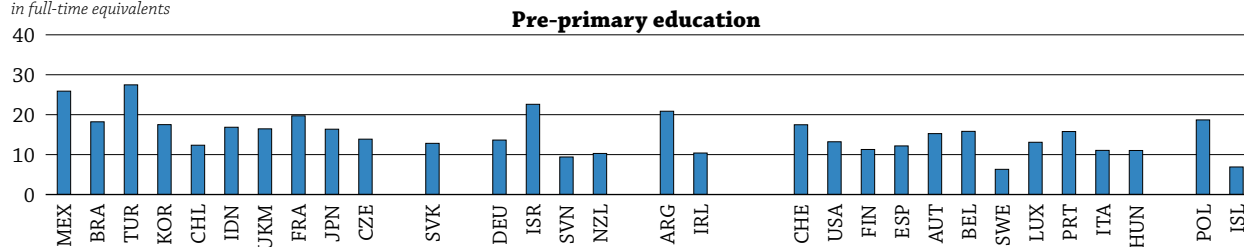
Pre-primary education

Number of students per teacher in full-time equivalents

Primary education

Number of students per teacher in full-time equivalents

Lower secondary education

Number of students per teacher in full-time equivalents

Upper secondary education

Number of students per teacher in full-time equivalents

Tertiary education
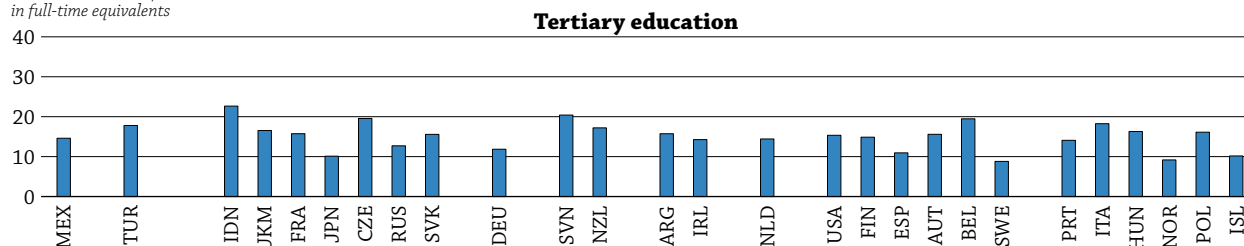
Countries are ranked in descending order of students to teaching staff ratios in primary education.

Source: OECD. Argentina, China, Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme). Table D2.2. See Annex 3 for notes (*www.oecd.org/edu/eag2011*).

Please refer to the Reader's Guide for list of country codes for country names used in this chart.

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Box D2.2. Relationship between class size and student-teacher ratio

The number of students per class is calculated from a number of different elements: the ratio of students to teaching staff, the number of classes or students for which a teacher is responsible, the amount of instruction time compared to the length of teachers' working days, the proportion of time teachers spend teaching, and how students are grouped within classes and team teaching.

For example, in a school of 48 full-time students and 8 full-time teachers, the student-teacher ratio is 6. If teachers' work week is estimated to be 35 hours, including 10 hours teaching, and if instruction time for each student is 40 hours per week, then, regardless of how students are grouped in the school, average class size can be estimated as follows:

Estimated class size = 6 students per teacher * (40 hours of instruction time per student/10 hours of teaching per teacher) = 24 students.

Using a different approach, the class size presented in Table D2.1 is defined as those students who are following a common course of study, based on the highest number of common courses (usually compulsory studies), and excludes teaching in subgroups. Thus, the estimated class size will be close to the average class size of Table D2.1 where teaching in subgroups is less frequent, such as in primary and lower secondary education.

Because of these definitions, similar student-teacher ratios between countries can result in different class sizes. For example, at the lower secondary level, France and Spain have similar average class sizes (24.5 students in France and 24.3 in Spain – Table D2.1), but the student-teacher ratio differs substantially, with 14.9 students per teaching staff in France compared to 10.1 in Spain (Table D2.2). The explanation may lie in the higher number of teaching hours required of teachers in Spain (713 in Spain compared with 642 in France – Table D4.1) and lower instruction time for students in Spain (Table D1.1).

This reduction in the student-teacher ratio reflects differences in annual instruction time, which tends to increase with the level of education (see Indicator D1). It may also result from delays in matching the teaching force to demographic changes, or from differences in teaching hours for teachers at different levels, which tends to decrease with the level of education, as teacher specialisation increases. The general trend is consistent among countries, but evidence is mixed as to whether smaller student-teacher ratios are more desirable from an educational perspective at higher levels of education.

For the pre-primary level, Table D2.2 shows the ratio of student to teaching staff and also the ratio of students to contact staff (teachers and teachers' aides). Some countries make extensive use of teachers' aides at the pre-primary level. Eleven countries reported smaller ratios of students to contact staff (column 1 of Table D2.2) than of students to teaching staff. For the Czech Republic, Japan, the Slovak Republic, Sweden and the United Kingdom, this difference is not substantial. However, Austria, Brazil, Chile, Germany, Ireland and Israel have larger numbers of teachers' aides. As a result, the ratios of students to contact staff are substantially lower than the ratios of students to teaching staff in these countries, particularly in Ireland and Israel.

At the tertiary level, the student-teacher ratio ranges from 20 or more students per teacher in Indonesia and Slovenia to fewer than 11 in Iceland, Japan, Norway, Spain and Sweden (Table D2.2). However, comparisons at this level should be made with caution since it is difficult to calculate full-time equivalent students and teachers on a comparable basis.

In 9 of the 13 countries with comparable data at the tertiary level, the ratio of students to teaching staff is lower in more vocationally oriented programmes (tertiary-type B) than in academic (tertiary-type A) and advanced research programmes. Turkey is the only country with a significantly higher student-teacher ratio in vocational programmes at that level (Table D2.2).

Teaching resources in public and private institutions

On average among countries for which data are available, ratios of students to teaching staff are slightly lower in private institutions than in public institutions at both lower secondary and upper secondary levels (Table D2.3). The largest differences are in Brazil and Mexico where, at the lower secondary level, there are at least ten more students per teacher in public institutions than in private institutions. At the upper secondary level in Mexico, the difference between student-teacher ratios in public and private institutions is as large as at the lower secondary level.

However, in some countries, the student-teacher ratio is lower in public institutions than in private institutions. This is most pronounced at the lower secondary level in Spain, which has some 16 students per teacher in private institutions but only 9 students per teacher in public institutions.

Among countries for which data are available, average class size does not differ between public and private institutions by more than one student per class for both primary and lower secondary education (Chart D2.4 and Table D2.1). However, there are marked differences among countries. For example, at the primary level, in Brazil, the Czech Republic, Indonesia, Poland, the Russian Federation, Turkey, the United Kingdom and the United States, average class size in public institutions is larger by four or more students per class.

Chart D2.4. **Average class size in public and private institutions, by level of education (2009)**
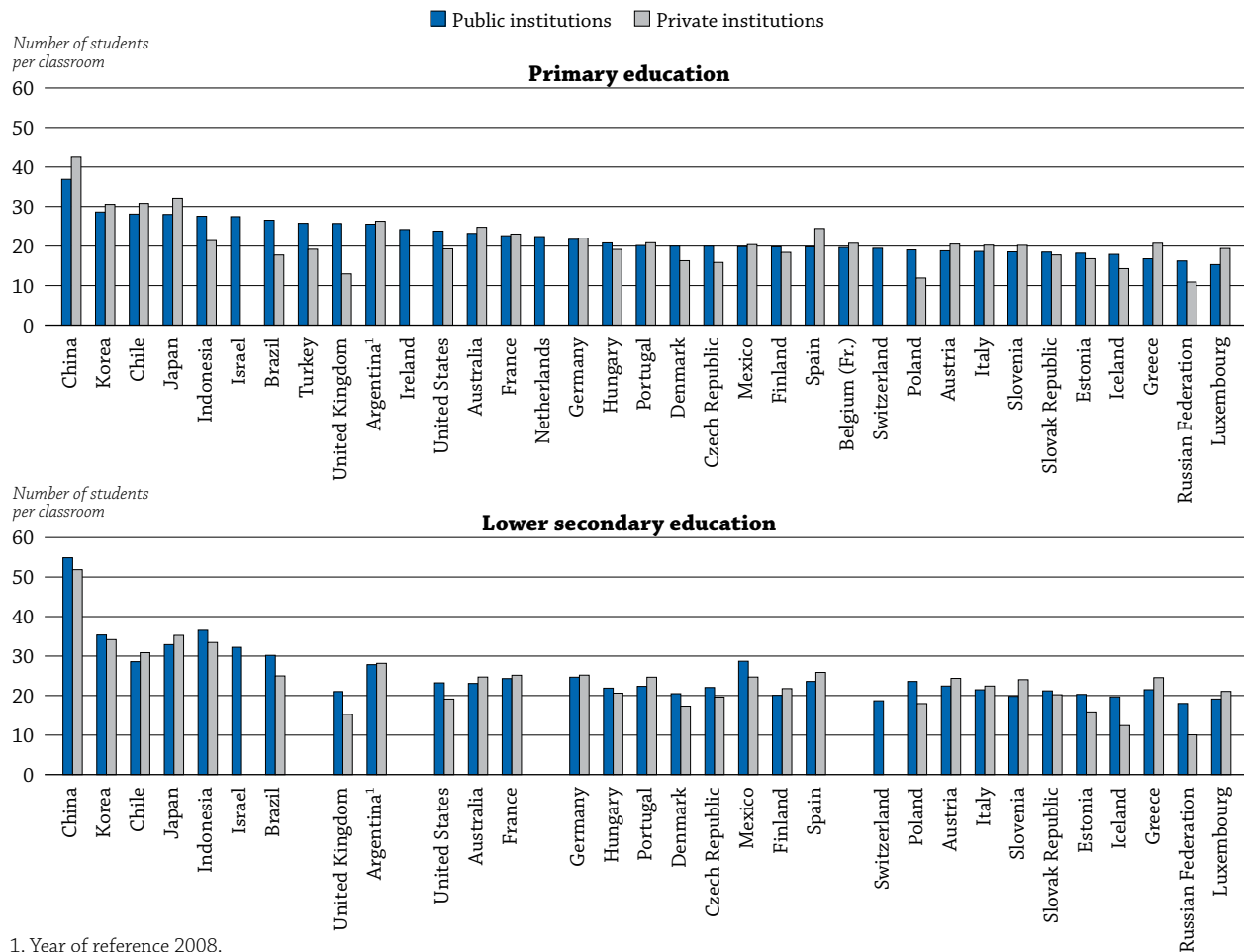
1. Year of reference 2008.
Countries are ranked in descending order of average class size in public institutions in primary education.
Source: OECD. Argentina, China, Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme). Table D2.1. See Annex 3 for notes (*www.oecd.org/edu/eag2011*).
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However, with the exception of Brazil and the United States, the private sector is relatively small in all of these countries, representing at most 5% of students at the primary level (see Table C1.5).

In contrast, the average class size in private institutions is larger than that in public institutions by four or more students in China, Japan, Luxembourg and Spain.

The comparison of class size between public and private institutions shows a mixed picture at the lower secondary level, where private education is more prevalent. Average class size in lower secondary schools is larger in private institutions than in public institutions in 13 OECD countries, although differences tend to be smaller than in primary education.

Countries encourage and provide resources for public and private schools for various reasons. One is to broaden the choices of schooling available to students and their families. Class size is one factor that parents often consider when deciding on a school for their children, and the difference in average class size between public and private schools could influence enrolment. Perhaps surprisingly, there are, on average, only marginal differences in class size between public and private institutions in countries where private institutions are more prevalent at primary and lower secondary levels, such as Australia, Belgium (French Community), Chile, France, Korea (lower secondary level only) and Luxembourg (see Table C1.5). Where large differences do exist, they tend to show that private institutions have more students per class than public schools. This indicates that in countries in which a substantial proportion of students and families choose private schools, class size is not a determining factor in their decision.

Definitions

Language of instruction is the term the OECD's Programme for International Student Assessment uses to denote classes in reading, writing and literature in the language in which students are taught.

Professional support for students includes professional staff who provide services to students that support their learning. In many cases, these staff originally qualified as teachers but then moved into other professional positions within the education system. This category also includes all personnel employed in education systems who provide health and social support services to students, such as guidance counsellors, librarians, doctors, dentists, nurses, psychiatrists and psychologists, and other staff with similar responsibilities.

Teachers' aides and teaching/research assistants include non-professional personnel or students who support teachers in providing instruction to students.

Teaching staff refers to professional personnel directly involved in teaching students. The classification includes classroom teachers, special-education teachers and other teachers who work with a whole class of students in a classroom, in small groups in a resource room, or in one-to-one teaching situations inside or outside a regular class. Teaching staff also includes department chairpersons whose duties include some teaching, but excludes non-professional personnel who support teachers in providing instruction to students, such as teachers' aides and other paraprofessional personnel.

Methodology

Data refer to the academic year 2008-09 and are based on the UOE data collection on education statistics administered by the OECD in 2010 (for details see Annex 3 at *www.oecd.org/edu/eag2011*).

Class size is calculated by dividing the number of students enrolled by the number of classes. In order to ensure comparability among countries, special-needs programmes are excluded. Data include only regular programmes at primary and lower secondary levels of education, and exclude teaching in sub-groups outside the regular classroom setting.

In the PISA 2009 study, class size was computed based on a questionnaire answered by principals of schools. Principals were asked to specify the size of classes according to the following nine categories: 15 students or fewer, from 16 to 20, from 21 to 25, from 26 to 30, from 31 to 35, from 36 to 40, from 41 to 45, from 46 to 50,

and more than 50. From these categories, average class size was computed using the middle class size value for each category and the values 15 and 51 for the two extremes.

The **ratio of students to teaching staff** is obtained by dividing the number of full-time equivalent students at a given level of education by the number of full-time equivalent teachers at that level and in similar types of institutions.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

References

Ehrenberg, R., *et al.* (2001), "Class Size and Student Achievement", *Psychological Science in the Public Interest*, Vol. 2, No. 1, pp. 1-30.

Finn, J. (1998), *Class Size and Students at Risk: What is Known? What is Next?*, US Department of Education, Office of Educational Research and Improvement, National Institute on the Education of At-Risk Students, Washington, DC.

Hattie, J. (2009), *Visible Learning; A synthesis of over 800 meta-analyses relating to achievement,* Routledge, London.

Krueger, A.B. (2002), "Economic Considerations and Class Size", *National Bureau of Economic Research Working Paper:* 8875.

OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS*, OECD, Paris.

Piketty, T. and M. Valdenaire (2006), *L'Impact de la taille des classes sur la réussite scolaire dans les écoles, collèges et lycées français : Estimations à partir du panel primaire 1997 et du panel secondaire 1995*, ministère de l'Éducation nationale, de l'Enseignement supérieur et de la Recherche, Direction de l'évaluation et de la prospective, Paris.

For more information on the gender and age breakdown of teachers, see Indicator D7 available on line.

Notes on definitions and methodologies regarding this indicator for each country are presented in Annex 3 at *www.oecd.org/edu/eag2011*.

The following additional material relevant to this indicator is available on line:

- *Table D2.4. Average class size, by type of institution and level of education (2000)*
  StatLink ⏷ http://dx.doi.org/10.1787/888932465227

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Table D2.1. Average class size, by type of institution and level of education (2009)
Calculations based on number of students and number of classes

	Primary education					Lower secondary education (general programmes)				
	Public institutions	Private institutions			Total: Public and private institutions	Public institutions	Private institutions			Total: Public and private institutions
		Total private institutions	Government-dependent private institutions	Independent private institutions			Total private institutions	Government-dependent private institutions	Independent private institutions	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Australia	23.2	24.8	24.8	a	**23.7**	23.0	24.7	24.7	a	**23.7**
Austria	18.8	20.5	x(2)	x(2)	**18.9**	22.4	24.3	x(7)	x(7)	**22.6**
Belgium	m	m	m	m	**m**	m	m	m	m	**m**
Belgium (Fr.)	19.6	20.7	20.7	m	**20.1**	m	m	m	m	**m**
Canada	m	m	m	m	**m**	m	m	m	m	**m**
Chile	28.1	30.8	32.4	22.4	**29.6**	28.6	30.8	32.2	23.9	**29.7**
Czech Republic	20.0	15.9	15.9	a	**19.9**	22.0	19.6	19.6	a	**22.0**
Denmark	20.0	16.3	16.3	a	**19.4**	20.5	17.3	17.3	a	**19.9**
Estonia	18.2	16.8	a	16.8	**18.1**	20.3	15.9	a	15.9	**20.1**
Finland	19.8	18.4	18.4	a	**19.8**	20.0	21.7	21.7	a	**20.1**
France	22.6	23.0	x(2)	x(2)	**22.7**	24.3	25.1	25.4	14.1	**24.5**
Germany	21.7	22.0	22.0	x(3)	**21.7**	24.6	25.2	25.2	x(8)	**24.7**
Greece	16.8	20.7	a	20.7	**17.0**	21.5	24.5	a	24.5	**21.6**
Hungary	20.8	19.2	19.2	a	**20.7**	21.9	20.6	20.6	a	**21.7**
Iceland	17.9	14.3	14.3	n	**17.8**	19.6	12.4	12.4	n	**19.5**
Ireland	24.2	m	a	m	**m**	m	m	a	m	**m**
Israel	27.4	a	a	a	**27.4**	32.2	a	a	a	**32.2**
Italy	18.7	20.2	a	20.2	**18.8**	21.4	22.4	a	22.4	**21.5**
Japan	28.0	32.1	a	32.1	**28.0**	32.9	35.2	a	35.2	**33.0**
Korea	28.6	30.5	a	30.5	**28.6**	35.3	34.1	34.1	a	**35.1**
Luxembourg	15.3	19.4	19.7	19.4	**15.6**	19.1	21.0	21.0	21.1	**19.5**
Mexico	19.9	20.4	a	20.4	**19.9**	28.7	24.7	a	24.7	**28.3**
Netherlands[1]	22.4	m	m	m	**m**	m	m	m	m	**m**
New Zealand	m	m	m	m	**m**	m	m	m	m	**m**
Norway	a	a	a	a	**a**	a	a	a	a	**a**
Poland	19.0	11.9	11.5	12.1	**18.7**	23.5	18.0	24.4	16.2	**23.3**
Portugal	20.2	20.8	23.2	20.0	**20.2**	22.3	24.6	23.9	25.8	**22.6**
Slovak Republic	18.5	17.8	17.8	n	**18.4**	21.2	20.2	20.2	n	**21.1**
Slovenia	18.5	20.2	20.2	n	**18.5**	19.8	24.0	24.0	n	**19.8**
Spain	19.8	24.5	24.5	24.5	**21.1**	23.5	25.8	26.0	24.2	**24.3**
Sweden	m	m	m	n	**m**	m	m	m	n	**m**
Switzerland	19.4	m	m	m	**m**	18.7	m	m	m	**m**
Turkey	25.8	19.2	a	19.2	**25.6**	a	a	a	a	**a**
United Kingdom	25.7	13.0	25.7	12.9	**24.5**	21.0	15.2	19.1	10.5	**19.6**
United States	23.8	19.3	a	19.3	**23.3**	23.2	19.1	a	19.1	**22.8**
OECD average	21.4	20.5	20.4	20.7	**21.4**	23.5	22.8	23.0	21.3	**23.7**
EU21 average	20.0	19.0	19.6	18.5	**19.8**	21.9	21.7	22.0	19.8	**21.9**
Argentina[2]	25.5	26.3	29.8	24.0	**26.2**	27.8	28.1	29.7	26.9	**28.1**
Brazil	26.5	17.7	a	17.7	**25.0**	30.2	25.0	a	25.0	**29.5**
China	36.9	42.5	x(2)	x(2)	**37.1**	54.9	51.8	x(7)	x(7)	**54.6**
India	m	m	m	m	**m**	m	m	m	m	**m**
Indonesia	27.5	21.4	a	21.4	**26.4**	36.5	33.4	a	33.4	**35.3**
Russian Federation	16.2	10.9	a	10.9	**16.2**	18.0	10.1	a	10.1	**17.9**
Saudi Arabia	m	m	m	m	**m**	m	m	m	m	**m**
South Africa	m	m	m	m	**m**	m	m	m	m	**m**
G20 average	24.7	22.9	~	~	**24.5**	26.8	24.9	~	~	**26.6**

1. Year of reference 2006.
2. Year of reference 2008.
Source: OECD. Argentina, China, Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme).
See Annex 3 for notes (*www.oecd.org/edu/eag2011*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.
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Table D2.2. Ratio of students to teaching staff in educational institutions (2009)
By level of education, calculations based on full-time equivalents

	Pre-primary education		Primary education	Secondary education			Post-secondary non-tertiary education	Tertiary education		
	Students to contact staff (teachers and teachers' aides)	Students to teaching staff		Lower secondary education	Upper secondary education	All secondary education		Tertiary-type B	Tertiary-type A and advanced research programmes	All tertiary education
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Australia[1,2]	m	m	15.8	x(6)	x(6)	12.0	m	m	14.4	m
Austria	10.7	15.2	12.6	9.6	10.2	9.9	10.8	x(10)	x(10)	15.6
Belgium[3]	15.8	15.8	12.5	8.1	10.2	9.5	x(5)	x(10)	x(10)	19.5
Canada[4]	m	x(4)	x(4)	16.6	14.7	15.9	m	m	m	m
Chile	9.5	12.3	22.4	22.4	24.7	23.8	a	m	23.3	m
Czech Republic	13.6	13.8	18.4	11.5	12.2	11.8	18.9	16.2	19.9	19.6
Denmark	m	5.5	x(4)	9.9	m	m	m	m	m	m
Estonia	m	m	16.2	15.7	16.8	16.3	x(5)	m	m	m
Finland	m	11.2	13.6	10.1	16.6	13.6	x(5)	n	14.9	14.9
France[3]	19.7	19.7	19.7	14.9	9.6	12.2	x(8)	16.4	15.6	15.7
Germany	10.6	13.6	17.4	15.1	13.9	14.8	15.0	14.1	11.5	11.9
Greece	m	m	m	m	m	m	m	m	m	m
Hungary	m	11.0	10.7	10.8	12.8	11.8	12.4	17.5	16.2	16.3
Iceland	6.9	6.9	x(4)	9.9	10.9	10.2	x(5, 10)	x(10)	x(10)	10.2
Ireland[2]	4.7	10.4	15.9	x(6)	x(6)	12.6	x(6)	x(10)	x(10)	14.3
Israel[2]	11.6	22.6	17.0	13.7	10.8	11.9	m	m	m	m
Italy[2]	11.0	11.0	10.7	10.0	11.8	11.0	m	7.2	18.4	18.3
Japan	15.6	16.3	18.6	14.5	12.2	13.2	x(5, 10)	7.0	11.5	10.1
Korea	17.5	17.5	22.5	19.9	16.7	18.2	a	m	m	m
Luxembourg	13.0	13.0	11.6	x(6)	x(6)	9.1	m	m	m	m
Mexico	25.9	25.9	28.1	33.0	25.6	30.1	a	13.8	14.6	14.6
Netherlands[2]	m	x(3)	15.8	x(6)	x(6)	16.1	x(6)	x(10)	x(10)	14.4
New Zealand	10.3	10.3	16.3	16.3	12.8	14.4	22.7	16.1	17.6	17.2
Norway[2]	m	m	10.7	9.9	9.4	9.7	x(5)	x(10)	x(10)	9.2
Poland	m	18.6	10.2	12.9	12.0	12.4	16.1	10.1	16.2	16.1
Portugal	m	15.7	11.3	7.6	7.7	7.7	x(5, 10)	x(10)	x(10)	14.1
Slovak Republic	12.7	12.8	17.7	14.0	15.1	14.5	12.7	8.2	15.7	15.6
Slovenia	9.4	9.4	16.7	7.9	14.3	11.0	x(5)	x(10)	x(10)	20.4
Spain	m	12.1	13.3	10.1	9.3	9.8	a	8.5	11.6	10.9
Sweden	6.2	6.3	12.1	11.3	13.2	12.3	12.9	x(10)	x(10)	8.8
Switzerland[1,2]	m	17.4	15.4	12.0	10.4	11.5	m	m	m	m
Turkey	m	27.4	22.9	a	16.9	16.9	a	58.8	13.4	17.8
United Kingdom	15.5	16.4	19.9	16.1	12.3	13.7	x(5)	x(10)	x(10)	16.5
United States	m	13.2	14.8	14.3	15.1	14.7	16.0	x(10)	x(10)	15.3
OECD average	12.6	14.3	16.0	13.5	13.5	13.5	15.3	14.9	15.7	14.9
EU21 average	11.9	12.9	14.5	11.5	12.4	12.1	14.1	12.3	15.5	15.5
Argentina[4]	m	20.8	16.0	15.3	8.8	11.9	a	18.1	14.7	15.7
Brazil	13.6	18.2	24.0	21.0	18.1	19.8	a	x(10)	x(10)	w
China	m	m	17.6	15.6	18.2	16.7	m	m	m	m
India	m	m	m	m	m	m	m	m	m	m
Indonesia	m	16.8	20.8	15.9	16.8	16.3	a	x(10)	x(10)	22.7
Russian Federation[2,5]	m	m	17.9	x(6)	x(6)	8.7	x(6)	9.5	13.9	12.7
Saudi Arabia	m	m	m	m	m	m	m	m	m	m
South Africa	m	m	m	m	m	m	m	m	m	m
G20 average	~	~	19.1	15.9	15.1	15.4	~	~	~	~

1. Includes only general programmes in upper secondary education.
2. Public institutions only (for Australia, for tertiary-type A and advanced research programmes only; for Ireland, at pre-primary and secondary levels only; for Israel, at pre-primary level only; for Italy, from pre-primary to secondary level; for the Russian Federation, at primary level only).
3. Excludes independent private institutions.
4. Year of reference 2008.
5. Excludes part-time personnel in public institutions at lower secondary and general upper secondary levels.
Source: OECD. Argentina, China, Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme). See Annex 3 for notes *(www.oecd.org/edu/eag2011).*
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.
StatLink ⌗ http://dx.doi.org/10.1787/888932465189

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Table D2.3. **Ratio of students to teaching staff, by type of institution (2009)**
By level of education, calculations based on full-time equivalents

	Lower secondary education				Upper secondary education				All secondary education			
		Private				Private				Private		
	Public	Total private institutions	Government-dependent private institutions	Independent private institutions	Public	Total private institutions	Government-dependent private institutions	Independent private institutions	Public	Total private institutions	Government-dependent private institutions	Independent private institutions
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD												
Australia[1]	x(9)	x(10)	x(11)	a	x(9)	x(10)	x(11)	a	12.3	11.7	11.7	a
Austria	9.5	11.2	x(2)	x(2)	10.3	9.5	x(6)	x(6)	9.8	10.2	x(10)	x(10)
Belgium[2]	7.4	m	8.5	m	10.9	m	9.8	m	9.6	m	9.4	m
Canada[3,4,5]	16.8	14.4	x(2)	x(2)	14.8	13.3	x(6)	x(6)	16.0	14.0	x(10)	x(10)
Chile	23.0	21.8	23.0	15.8	24.1	25.1	28.2	13.6	23.6	23.9	26.3	14.3
Czech Republic	11.5	10.1	10.1	a	11.8	15.0	15.0	a	11.6	14.2	14.2	a
Denmark[4]	10.0	9.9	9.9	m	m	m	m	m	m	m	m	m
Estonia	15.8	12.9	a	12.9	16.9	15.0	a	15.0	16.4	14.3	a	14.3
Finland[6]	10.0	10.6	10.6	a	16.2	19.1	19.1	a	13.3	17.2	17.2	a
France	14.6	m	16.1	m	9.5	m	10.0	m	12.0	m	12.9	m
Germany	15.2	14.3	14.3	x(3)	14.1	12.7	12.7	x(7)	14.9	13.8	13.8	x(11)
Greece	m	m	m	m	m	m	m	m	m	m	m	m
Hungary	10.9	9.9	9.9	a	12.8	12.5	12.5	a	11.8	11.6	11.6	a
Iceland[4,6]	9.9	9.3	9.3	n	10.9	10.6	10.6	n	10.1	10.3	10.3	n
Ireland[2]	x(9)	x(10)	a	x(12)	x(9)	x(10)	a	x(12)	12.6	m	a	m
Israel	13.7	a	a	a	10.8	a	a	a	11.9	a	a	a
Italy	10.0	m	a	m	11.8	m	a	m	11.0	m	a	m
Japan[6]	14.7	13.0	a	13.0	11.5	13.9	a	13.9	13.1	13.7	a	13.7
Korea	19.9	20.0	20.0	a	16.2	17.4	17.4	a	18.2	18.1	18.1	a
Luxembourg	8.9	x(10)	x(11)	x(12)	9.3	x(10)	x(11)	x(12)	9.1	8.8	9.2	8.4
Mexico	35.9	20.3	a	20.3	30.6	15.0	a	15.0	34.0	17.5	a	17.5
Netherlands[2]	x(9)	m	a	m	x(9)	m	a	m	16.1	m	a	m
New Zealand	16.6	15.2	16.2	13.2	14.8	9.4	14.5	6.4	15.7	11.1	15.2	7.6
Norway	9.9	m	m	m	9.4	m	m	m	9.7	m	m	m
Poland	13.0	9.8	11.3	9.2	12.0	11.5	14.0	11.1	12.5	10.9	12.7	10.5
Portugal	7.3	10.3	11.1	9.5	8.1	6.5	11.3	5.6	7.7	7.6	11.2	6.4
Slovak Republic	14.0	13.3	13.3	n	15.4	13.3	13.3	n	14.6	13.3	13.3	n
Slovenia[2]	7.9	4.5	4.5	n	14.3	13.2	x(6)	x(6)	10.9	12.6	x(10)	x(10)
Spain	8.6	15.5	15.5	15.6	8.3	14.1	14.3	13.8	8.5	15.1	15.3	14.4
Sweden	11.2	12.1	12.1	n	13.0	14.7	14.7	n	12.1	13.7	13.7	n
Switzerland[7]	12.0	m	m	m	10.4	m	m	m	11.5	m	m	m
Turkey	a	a	a	a	17.7	7.5	a	7.5	17.7	7.5	a	7.5
United Kingdom[2]	17.6	11.4	12.3	10.1	12.8	11.6	12.0	9.7	14.9	11.6	12.1	9.8
United States	14.8	10.9	a	10.9	15.9	10.0	a	10.0	15.3	10.5	a	10.5
OECD average	13.5	12.8	12.7	9.3	13.6	13.2	14.3	8.7	13.7	13.0	13.8	9.0
EU21 average	11.3	11.1	11.4	11.5	12.2	13.0	13.2	11.1	12.1	12.5	12.8	10.6
Other G20												
Argentina[3]	14.8	17.0	16.4	19.1	7.9	11.5	10.5	15.9	11.4	14.0	13.1	17.3
Brazil	22.8	12.5	a	12.5	19.9	11.8	a	11.8	21.6	12.1	a	12.1
China	m	m	m	m	m	m	m	m	m	m	m	m
India	m	m	m	m	m	m	m	m	m	m	m	m
Indonesia	18.6	12.7	a	12.7	18.2	15.7	a	15.7	18.5	14.0	a	14.0
Russian Federation	m	m	a	m	m	m	a	m	m	m	a	m
Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
South Africa	m	m	m	m	m	m	m	m	m	m	m	m
G20 average	m	m	m	m	m	m	m	m	m	m	m	m

1. Includes only general programmes in lower and upper secondary education.
2. Upper secondary includes post-secondary non-tertiary education.
3. Year of reference 2008.
4. Lower secondary includes primary education.
5. Lower secondary includes pre-primary education.
6. Upper secondary education includes programmes from post-secondary education.
7. Includes only general programmes in upper secondary education.
Source: OECD. Argentina, Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme). See Annex 3 for notes (*www.oecd.org/edu/eag2011*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.
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