Governments are paying increasing attention to international comparisons as they search for effective policies that enhance individuals’ social and economic prospects, provide incentives for greater efficiency in schooling, and help to mobilise resources to meet rising demands.

In response to this need, the OECD devotes a major effort to the development and analysis of quantitative, internationally comparable indicators, which are published annually in *Education at a Glance*. These indicators enable educational policy makers and practitioners alike to see their education systems in the light of other countries’ performances and, together with OECD’s country policy reviews, are designed to support and review the efforts that governments are making towards policy reform.

This note contrasts key findings for the partner country Brazil with global trends among OECD countries, under the headings: quantity and quality challenges, equity challenges, and resource and efficiency challenges.

*Education at a Glance* 2008, as well as its executive summary, all data and web-only tables, can be downloaded free of charge at www.oecd.org/edu/eag2008.

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**QUANTITY AND QUALITY CHALLENGES**

The decades-old expansion in educational participation and outputs continues – and at a pace that outstrips many past projections. With completion of upper secondary education close to universal in most OECD countries, the greatest recent expansion has come in the tertiary sector. While, in 1995, 37% of a cohort went into university-level programmes it is now 57%, on average across OECD countries. It is hard to predict the future from past trends. Will the expansion of tertiary education continue at this rapid pace, driven by an ever-rising demand for the highly skilled? Or will it level off and will relative earnings decline? At the beginning of the 20th century, few would have predicted that, among OECD countries, upper secondary education would be largely universal by the end of the century. So it is equally difficult to predict how tertiary qualifications will have evolved by the end of the 21st century. *Education at a Glance* provides a profile of educational qualifications in populations as well as indicators on trends in the quantity and quality of the output of educational institutions. For the first time, it also relates the qualifications that are produced by the education system to their actual deployment across occupational groups, which allows to gauge the demand for skills.
### Global trends

*Education systems continue to expand at a rapid pace…*

- Tertiary attainment levels have increased substantially, for the first time reaching one third of the cohort of 25-to-34-year-olds, on average across OECD countries. In France, Ireland, Japan and Korea, there is a difference of 25 percentage points or more in tertiary attainment between the oldest and youngest age groups (Table A1.3a). Between 1995 and 2006 alone, the university-level graduation rate rose, on average across countries, from 20 to 37% (Table A3.2) and more than half of those at the typical age of graduation completed their first tertiary-type A degree in Australia, Finland, Iceland and New Zealand (Table A3.1).

- The social sciences, business and law are the major educational fields in most countries. Across OECD countries, they constitute 28% of the overall tertiary-type A attainment in the population. On average, there are 3.6 times as many individuals with degrees in the younger cohort entering the labour-market than in the older one nearing retirement age. By contrast, in the field of education, this ratio is close to 1 in the OECD countries (Table A1.5).

*…and current entry rates suggest that these trends will continue.*

- Entry rates in tertiary-type A education increased substantially between 1995 and 2006, by 20 percentage points on average in OECD countries. Between 2000 and 2006, growth exceeded 10 percentage points in 11 of the 25 OECD countries for which data are available. In 2006, in Australia, Finland, Hungary, Iceland, New Zealand, Norway, Poland, the Slovak Republic and Sweden, and the partner country the Russian Federation, it is estimated that 65% or more of young adults will enter tertiary-type A programmes. In almost all countries, the majority of new entrants choose to follow tertiary programmes in the field of social sciences, business, law and services (Tables A2.4 and A2.5).

- Overall, females represent 54% of new entrants in tertiary education in OECD countries. However, the breakdown by gender varies considerably according to the field of education. Two fields are noteworthy for the strong representation of females, namely health and welfare and humanities, arts and education with 75% and 68%, respectively, of new entrants. The proportion of females choosing science (including life sciences, physical sciences, mathematics, computing, engineering, manufacturing

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<th>Key results for the partner country Brazil</th>
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*Brazil is making efforts to improve its very low attainment levels at the tertiary level…*

- In Brazil, twice the population aged 25-to-34 has attained tertiary education (8%), compared to the population aged 55-to-64 (4%). The attainment level of tertiary education among the population from 35-to-54 is higher, with 9%. These rates are the lowest of all countries compared. (Table A1.3a).

- Available data for Brazil show that the first-time graduation rates in tertiary-type A education increased from 10 to 15% from 2000 to 2003, suggesting that further progress is being made (Table A3.2).

- Among graduates from tertiary-type A and advanced research programmes in Brazil, 41% of graduates are in social sciences, business, law and services (above the OECD average of 37%), 33% of graduates are in humanities, arts and education (above the OECD average of 25%), 13% of graduates are in health and welfare (same percentage as OECD average), about 5% of graduates are in life sciences, physical sciences and agriculture (below the OECD average 7%), as well as in engineering, manufacturing and construction (below the OECD average of 12%) and only 3% of graduates are in mathematics and computer science (below the OECD average of 5%) (Table A3.4a).

- The percentage of graduates in science-related fields (engineering, manufacturing and construction; life sciences, physical sciences and agriculture; as well as mathematics and computing) is 13%, around half the OECD average of 24% (Table A3.4a).
and construction and agriculture) studies ranges from less than 25% in Japan, the Netherlands, Spain and Switzerland and the partner country Chile to more than 35% in Denmark, Iceland, Italy and New Zealand (Table A2.6).

This expansion is driven by strong labour-market outcomes for those with advanced qualifications.

- Earnings increase with each level of education. Those who have attained upper secondary, post-secondary non-tertiary or tertiary education enjoy substantial earnings advantages compared with those of the same gender who have not completed upper secondary education (Table A9.1a). In 15 out of 21 countries with available data, the earnings premium for those with tertiary education increased during the last decade, often despite massive growth in tertiary participation, in Germany, Hungary, and Italy by between 30 and 40% (Table A9.2a).

- On average across countries, a tertiary education yields a 12 and 11% return for males and females, respectively, and returns are substantial in the Czech Republic, Hungary, Poland and Portugal. The rewards for tertiary education are relatively small in Germany, Norway, Spain, and Sweden where the rate of return ranges from 5 to 8% (Table A10.2). In most countries, the returns to investment in tertiary education in mid-career are lower, but still substantial enough to motivate the investment without government intervention (Table A10.4).

- Employment rates rise with educational attainment. With few exceptions, the employment rate for graduates of tertiary education is markedly higher than the rate for upper secondary graduates. For males, the gap is particularly wide between upper secondary graduates and those without an upper secondary qualification (Table A8.1a).

- Those with low educational attainment are both less likely to be labour force participants and more likely to be unemployed. Differences in employment rates between males and females are also wider among less educated groups. The chance of being employed is 23 percentage points higher for males than for females among those without upper secondary qualifications but falls to 10 points for the most highly qualified (Table A8.1a and A.2a).

- Employment rates tend to drop long before the stipulated retirement age in most countries. On average, employment rates among 55-to-64-year-olds are approximately 20 percentage points below those of the total working-age population (25-to-64-year-olds). However, employment rates increase with educational attainment in most countries, and

[No data available]
in all countries except Iceland, tertiary attainment provides an important employment advantage at an older age. The advantage is particularly large in the Czech Republic, Italy, Luxembourg and the Slovak Republic (Table A8.4).

**There are also marked shifts towards more skilled jobs in labour-markets.**

- Across OECD countries between 1998 and 2006, there was a marked shift from semi-skilled jobs to skilled jobs, with an increase of almost 4 percentage points in skilled occupations and a close to 4 percentage point decline in semi-skilled occupations. In most countries, the decline has not been at the very low end of the skill distribution but among semi-skilled jobs, with the proportion of the population working in unskilled occupations remaining substantially unchanged (Table A1.6).

The proportion of skilled jobs is generally larger than the potential supply of tertiary graduates…

- In OECD countries, the proportion of skilled jobs in the economy is generally larger than the potential supply of tertiary educated individuals. For countries in which work-based learning is central to occupational advancement, this difference is large. A broader initial skill base might require additional investment in higher education. In a few countries, tertiary attainment matches or marginally exceeds the proportion of skilled jobs, so that further expansion of higher education will to some extent depend on the growth of skilled jobs in the coming years (Tables A1.3a and A1.6).

...but the proportion of people with tertiary qualifications has generally been faster than the growth of skilled job, suggesting that the gap is closing.

- The increase in skilled jobs has been met and exceeded in most OECD countries by increases in the proportion of the population with tertiary attainment. However, in most countries, there are still substantially more skilled jobs than tertiary educated individuals. On average, across OECD countries, 69% of all those with a tertiary type 5B qualification and 85% of those with a tertiary 5A/6 qualification have skilled jobs. However the matching of higher education to skilled jobs varies substantially among countries. Those with a 5A/6 qualification in Denmark, Finland, Luxembourg and the partner country Slovenia do substantially better in finding a skilled job given the labour market conditions for those with tertiary education (Tables A1.6, A1.7 and A3.2).
The internationalisation of tertiary education is proceeding rapidly.

- In 2006, over 2.9 million tertiary students were enrolled outside their country of citizenship. This represented a 3% increase from the previous year in total foreign student intake reported to the OECD and the UNESCO Institute for Statistics (Box C3.1).

- Student mobility – i.e. international students who travelled to a country different from their own for the purpose of tertiary study – ranges from below 1 to almost 18% of tertiary enrolments across OECD countries. International students are most numerous in tertiary enrolments in Australia, Austria, New Zealand, Switzerland and the United Kingdom (Table C3.1).

- France, Germany, the United Kingdom and the United States receive 49% of all foreign students worldwide. The largest absolute numbers of international students from OECD countries are from France, Germany, Japan and Korea. Students from China and India comprise the largest numbers of international students from partner countries (Table C3.2).

- International students make up 15% or more of the enrolments in tertiary education in Australia and New Zealand and more than 20% of enrolments in advanced research programmes in Belgium, Canada, New Zealand, Switzerland, the United Kingdom and the United States (Table C3.4).

- 30% or more of international students are enrolled in sciences, agriculture or engineering in Finland, Germany, Hungary, Sweden, Switzerland and the United States (Table C3.5).

About 94% of Brazilian citizens studying abroad are in OECD countries, with the United States, France, Spain, Germany and Portugal as their principal destinations.

- Of the total number of Brazilian citizens studying in OECD countries, 34% are in the United States, 9.9% are in France, 9.3% are in Spain, 9.2% are in Germany, 9.0% are in Portugal and 5.5% are in the United Kingdom (Table C3.3).

- Brazilian students represent about 11% of foreign students in the tertiary sector of Portugal, which is by far the largest student foreign community at the tertiary sector in this country (Table C3.2).

- Considering the principal destinations of foreign students worldwide at the tertiary level (France, Germany, the United Kingdom and the United States), Brazilian students constitute 0.9% of foreign students in France, 0.9% of the international student population in Germany, 0.4% in the United Kingdom and 1.2% in the United States (Table C3.2).

New analyses of PISA data provide a first picture of school education from the perspective of parents.

- Among the 10 OECD countries with available data, on average, 77% of parents “strongly agreed or agreed” that standards of achievement were high in their child’s school. On average, their children scored 20 score points higher on the PISA 2006 assessment than students whose parents “disagreed or strongly disagreed” with that statement. Much of the advantage remains when taking into account socio-economic factors (Table A6.2).

- An average of 79% of parents reported being satisfied with the disciplinary atmosphere in their child’s school and 85% felt that the school did a good job of educating students. In both cases, their children had a performance advantage of 12 score points (Table A6.2). [No data available]
points on average (Table A6.2b).

- On average, 88% of parents “strongly agreed or agreed” that their child’s teachers seemed competent and dedicated, but the relationship to student performance was inconsistent across countries, with an average advantage of 7 score points (Table A6.3a).

For the first time, the indicators compare approaches to monitoring school standards.

- A total of 22 OECD and partner countries undertake student examinations and/or assessments and 17 require schools to be evaluated (either self-evaluations and/or inspections by an external body) at regular intervals. Student assessments (evaluations without civil effect for the student) are practised in 17 OECD and partner countries, whereas national examinations (with a civil effect for the student) are practised in 10 OECD and partner countries (Tables D5.1 and D5.2).
- School self-evaluations are required in 14 countries, generally on an annual basis (Table D5.6).
- School inspections are required in 14 countries, generally once every three years (Table D5.5). Although school self-evaluations are held more often than school inspections, evaluations by school inspectorates have, in general, appear to have more influence on schools and teachers in terms of the implications of the evaluation and the accountability structure (Tables D5.5 and D5.6).
- Both school evaluation and student performance measures are mainly used to provide performance feedback to schools (Tables D5.3 to D5.6). In general, they have relatively little influence on school financing and other financial implications such as changes to the school budget, provision of rewards or sanctions for schools, or remunerations and bonuses received by teachers (Tables D5.3 to D5.6).
- In a larger number of countries, the influence of school evaluations is greater than student examinations for the performance appraisals of schools (13 countries, compared to 7 for student examinations), for the appraisal of the performance of school management (9 countries, compared to 1 for student examinations) and the appraisal of the performance of individual teachers (4 countries, compared to 1 for student examinations) (Tables D5.3 to D5.6).

Periodic national assessments in mathematics and the national language are used as tools to measure student performance at lower secondary level.

- Brazil does not perform national examinations (evaluations with civil effect for the student) at the lower secondary level, but does have national periodical assessments (evaluations without civil effect for the student) (Tables D5.1 and D5.2).
- In Brazil, the subjects considered in national periodical assessments are mathematics and the language of instruction. Nevertheless, it is not compulsory for schools to administer this exam (Table D5.1).
- National periodical assessments take place in Brazil at year/grade 8, as is the case in Belgium (Flemish Community), Hungary, Scotland, Turkey and the partner country Israel (Table D5.2).
- Also at the lower secondary level, there is no requirement for school evaluations, whether these are evaluations by an inspectorate or school self-evaluations (Tables D5.5 and D5.6).
RESOURCE AND EFFICIENCY CHALLENGES

Meeting the demand for more education while at least maintaining quality is bound to create pressures for current levels of spending to be maintained or increased and to improve the efficiency of spending on education. Recent years have already seen considerable rises in spending levels, both in absolute terms and as a share of public budgets. The total amount of funds allocated to educational institutions across all levels of education rose in all countries over the last decade, and by 19% on average between 2000 and 2005 alone. By 2005, OECD countries were spending 6.1% of their collective GDP on education at all levels, of which 86% came from public sources and all but 7 of the 28 OECD countries spent at least 5%. Another visible indication of the efforts made by governments can be found in the fact that from 1995 to 2005, public expenditure on education grew by more than one percentage point as a proportion of all public spending – from 11.9% to 13.2% in 2005. Education spending rose at least as fast as public spending in other sectors in all countries except Canada, France, Hungary, Portugal and Switzerland.

Alongside the increase in public spending on education, there has also been a search for new sources of funding to accommodate the rapid growth in student numbers (particularly at the tertiary level) and to increase the resources available to educational institutions. Although 86% of spending on education still originates from public sources for all levels of education combined, private spending increased more rapidly than public spending between 1995 and 2005 in nearly three-quarters of the countries examined. In some, the proportion of private funding of tertiary educational institutions is high enough to challenge the view that tertiary education is primarily a state responsibility. In fact, this view is gradually being replaced by the perception that, given the shared public and private returns that education brings, costs and responsibilities for its provision should also be shared between those who directly benefit and society at large (i.e. private households and businesses as well as governments), at least at the tertiary level of education.

While significant additional investments in education will be important, it is equally clear that more money alone will not be enough. Investments in education will also need to become more efficient. The education sector has not yet re-invented itself in ways that other professions have done to improve outcomes and raise productivity. Indeed, the evidence suggests the reverse, namely that productivity in education has generally declined because the quality of schooling has broadly remained constant, while the price of the inputs has markedly increased. As the place and mode of educational provision have largely remained unchanged, the labour-intensiveness of education and the predominance of teachers’ salaries in overall costs (with payscales based on qualifications and automatic increases) have made personnel costs rise over time. This edition of Education at a Glance provides a first picture of the spending choices that different countries are making.
**Global trends**

OECD countries as a whole spend USD 8 553 per student annually between primary and tertiary education: USD 6 173 per primary student, USD 7 736 per secondary student and USD 15 559 per tertiary student. These expenditure continue to rise.

- Expenditure on educational institutions per primary, secondary and post-secondary non-tertiary student increased in every country and on average by 35% between 1995 and 2005 during a period of relatively stable student numbers.
- The pattern is different at the tertiary level where spending per student has fallen in some cases, as expenditure has not kept up with the expansion in student numbers. However, from 2000 to 2005, expenditure on educational institutions per tertiary student increased by 11 percentage points on average in OECD countries after remaining stable from 1995 to 2000. Only Australia, Austria, Denmark, Greece, Iceland, Mexico, Poland, Portugal, Spain, Switzerland and the United Kingdom saw a larger increase in expenditure on educational institutions per tertiary student than in GDP per capita (Tables B1.4 and B1.5).
- Seven out of the 11 countries in which student enrolments in tertiary education increased by more than 20 percentage points between 2000 and 2005 have increased their expenditure on tertiary educational institutions by at least the same proportion over the period, whereas Hungary, Sweden and the partner countries Brazil and Chile did not (Table B1.5).
- Teacher compensation cost per student varies from 3.9% of GDP per capita in the Slovak Republic (less than half the OECD average rate of 10.9%) to over five times that rate in Portugal (20.9%, nearly twice the OECD average). Four factors influence these trends – salary levels, the amount of instruction time for students, the amount of teaching time required of teachers and average class size – so that a given level of compensation cost per student can result from quite different combinations of the four factors. For example, in Korea and Luxembourg, the compensation cost per student (as a percentage of GDP per capita) is 15.5 and 15.2%, respectively, both notably higher than the OECD average. However, whereas in Korea higher than average teacher salary levels coupled with relatively large class sizes are the main influence on this, in Luxembourg, relatively low class size is the main factor which results in such a high teacher compensation cost per student (as a proportion of GDP per capita (Tables B1.4 and B1.5).

**Key results for the partner country Brazil**

Brazil’s level of expenditure in Education is low compared to OECD standards... and skewed towards tertiary education students …

- To assess their potential impact on the quality of educational services, the resources invested in education need to be seen in relation to the number of students enrolled. On that measure, spending per student across all levels of education (excluding pre-primary education) in Brazil is, at USD 1 542 (equivalent), below the OECD average of USD 7 527. Other countries that allocate less than USD 3 000 per student are Mexico (USD 2 405) and the partner countries Chile (USD 2 694) and the Russian Federation (USD 2 051) (Table B1.1a).
- Below tertiary education, while OECD countries on average tend to have larger levels of expenditure at secondary than at the primary level, in the case of Brazil, the expenditure at the primary level (USD 1 425) is 20% higher than at the secondary level (USD 1 86) (Table B1.1a).
- But the greatest share is, by far, at the tertiary level. While the OECD countries allocate an average of 29% more to tertiary education (without considering R&D activities) than to primary education, Brazil allocates about six times more resources per student to tertiary education than to primary education (Table B1.1a and Chart B1.2).

...but in the last decade, increases in funding has been greater at the primary and secondary levels.

- At the primary, secondary and post-secondary non-tertiary level, there has been an increase in the expenditure to educational institutions per student. From 1995 to 2005, Brazil had an increase of 19% in the student demand at this level of education, and an increase of 73% in the level of expenditure to educational institutions. This provided an increase of 45% in the expenditure to educational institutions per student during this ten-year period (Table B1.5).
- At the tertiary level, there was an increase of 51% in the expenditure to educational institutions in Brazil for the period 1995-2005. However, during the same period, Brazil experienced an increase of the number of students in tertiary education of about 80%. Among OECD countries, the Czech Republic, Greece, Hungary, Iceland, Poland, the Slovak Republic and the partner countries Chile and Estonia experienced a similar or greater increase. The increase of resources was, therefore, insufficient to compensate for this growing demand, and resulted for Brazil in a decrease in the level of expenditure per student of about 15%
GDP per capita) compared to the OECD average (Table B7.2).

- In countries with the lowest compensation cost per student (as a percentage of GDP per capita) at the upper secondary level, low salary levels as a proportion of GDP is usually the main driver. This is the case in Iceland, Ireland, Norway, Poland, the Slovak Republic and Sweden. The main exception to this pattern is Mexico where teacher salary costs relative to GDP per capita are well above the OECD average but this is more than compensated for by large class sizes (Table B7.2).

- In contrast, among countries with the highest levels of compensation cost per student (Portugal, Spain, Switzerland), no single factor determines this position, but rather each of the four factors act to increase costs to varying degrees (Table B7.2).

- High spending per student cannot automatically be equated with strong performance by education systems. Spending per student up to the age of 15 in the Czech Republic is roughly one-third of, and in Korea roughly one-half of, spending levels in the United States. However, while both the Czech Republic and Korea are among the top ten performers in the PISA 2006 assessment of science achievement among 15-year-olds, the United States performs below the OECD average. Similarly, Spain and the United States perform almost equally well, but while the United States spends roughly USD 95 600 per student up to the age of 15 years, Spain only spends USD 61 860 (Table B7.1).

- Nevertheless, of all countries compared, Brazil still has the highest proportion of expenditure on each tertiary student relative to GDP per capita (108%), followed by Mexico, Switzerland, the United States and the partner country Chile, which spend more than 50% of GDP per capita on each tertiary student, but still have an expenditure about half the size of Brazil’s. Though, in Brazil, tertiary students represent less than 3% of the students enrolled in all levels of education combined (Tables B1.2 and B1.4).

OECD countries spend 6.1% of their collective GDP on educational institutions. The increase in spending on educational institutions between 1995 and 2005 fell behind growth in national income in nearly half of the 28 OECD countries for which data are available.

- The highest spenders on educational institutions are Denmark, Iceland, Korea, the United States and the partner country Israel, with at least 7% of GDP accounted for by public and private spending on educational institutions, followed by Mexico and New Zealand with more than 6.5%. By contrast, seven out of 28 OECD countries for which data are available as well as three out of six partner countries spend less than 5% of GDP on educational institutions; in Greece and in the partner country the Russian Federation, the figure is 4.2 and 3.8%, respectively (Table B2.1).

- Tertiary education accounts for nearly one-third of the combined OECD expenditure on educational institutions (2.0% of the combined GDP). In Canada for the period 2000-2005 (Table B1.5).

- Brazil spends 4.4% of its GDP on educational institutions (below the 6.1% spent by OECD countries in total), but recorded one of the largest increases among OECD and partner countries.

Starting from a comparatively low base by OECD standards, Brazil has shown rises in its investment in education, not just in absolute terms, where increases were observed in most countries over recent years, but also relative to national income: over the period 1995-2005, spending on educational institutions in Brazil increased by 63% (compared to an increase of 42% on average for OECD countries). Indeed, Brazil had one of the 6 largest increases in expenditure on educational institutions for all levels of education on this ten-year period among OECD and partner countries (Table B2.3). Brazil also had an increase from 3.7% to 4.4% of expenditure as a percentage of GDP during the 2000-2005 period, one of the largest increases as well among OECD and partner countries. (Tables B2.1).
and the United States expenditure at this level reaches up to 40% of expenditure on educational institutions (Table B2.1). Relative to GDP, the United States spends over three times more on tertiary education than Italy and the Slovak Republic and nearly four times more than the partner countries Brazil and the Russian Federation.

- On average across OECD countries, expenditure for all levels of education combined increased relatively more than GDP between 1995 and 2005. The increase in expenditure on educational institutions as a proportion of GDP exceeded 0.8 percentage points over this decade in Denmark, Greece, Mexico and the United Kingdom (Table B2.3).

- At 5.2%, Brazil’s share of capital spending in tertiary institutions in 2005 is slightly more than half the OECD average of 9.5%. Compared to OECD and partner countries, the share of capital spending in tertiary education in Brazil is higher than in Belgium, Canada, Denmark, Finland, Iceland, Ireland, Mexico, the Netherlands, Sweden and the United Kingdom (Table B6.2b).

- On average across OECD countries, expenditure for all levels of education combined increased relatively more than GDP between 1995 and 2005. The increase in expenditure on educational institutions as a proportion of GDP exceeded 0.8 percentage points over this decade in Denmark, Greece, Mexico and the United Kingdom (Table B2.3).

- At the primary, secondary and post-secondary non-tertiary education, the gap is narrower between capital expenditure in Brazil (6.1%) and the OECD average (8.2%) (B6.2b). Compared to OECD and partner countries, the share of capital spending below tertiary education in Brazil is higher than in Austria, Belgium, Canada, Mexico, Poland, Portugal, the Slovak Republic and the partner country Chile (Table B6.2b).

- About 74% of current expenditure on educational institutions in Brazil below the tertiary level is allocated to the compensation of staff (the remaining 26% goes to other current expenditure). This percentage is below the OECD average of 80%. At the tertiary level, the percentage allocated to the compensation of staff raises to 78% (the remaining 22% being allocated to other current expenditure) and this percentage is above the OECD average of 68% (Table B6.2b).

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**In all countries public funding on educational institutions increased between 1995 and 2005. However, private spending increased even more in nearly three-quarters of these countries.**

- On average over 90% of primary, secondary and post-secondary non-tertiary education in OECD countries, and other than in Korea no less than 80% is paid for publicly (Table B3.2a).

- In tertiary education the proportion funded privately varies widely, from less than 5% in Denmark, Finland and Greece, to more than 40% in Australia, Canada, Japan, New Zealand and the United States and in the partner country Israel, and to over 75% in Korea and the partner country Chile. As with tertiary graduation and entry rates, the proportion of private funding can be influenced by the incidence of international students which form a relatively high proportion in Australia and New Zealand (Table B3.2b).

- On average among the 18 OECD countries for which trend data are available, the share of public funding in tertiary institutions decreased slightly from 79% in 1995 to 77% in 2000 and to 73% in [No data available]
2005. However, the increase in private investment has not displaced but complemented public financing, the amount of public funding has simply tended to increase at a lower rate (Table B3.2b).

- In eight out of the 11 OECD countries with the largest increase in public expenditure on tertiary education between 2000 and 2005, tertiary institutions charge low or no tuition fees. The exceptions are Korea, the United Kingdom and the United States (Indicator B5).

- In tertiary education, households account for most private expenditure in most countries for which data are available. Exceptions are Canada, Greece, Hungary, the Slovak Republic and Sweden where private expenditure from entities other than households is more significant (Table B3.2b).

**On average, OECD countries devote 13.2% of total public expenditure to education, but values for individual countries range from 10% or below in the Czech Republic, Germany, Italy and Japan to more than 23% in Mexico.**

- Between 1995 and 2005, education took a growing share of total public expenditure in most countries, and on average it also grew as fast as GDP. In Denmark, the Netherlands, New Zealand, the Slovak Republic and Sweden and in the partner country Brazil, there have been particularly significant shifts in public funding in favour of education (Table B4.1).

- On average across OECD countries, 85% of public expenditure on education is transferred to public institutions. In two-thirds of OECD countries, as well as in the partner countries Brazil, Estonia and Slovenia, the share of public expenditure on education going to public institutions exceeds 80%. The share of public expenditure transferred to the private sector is larger at the tertiary level than at primary to post-secondary non-tertiary levels and reaches 26% on average among OECD countries for which data are available (Table B4.2).

**Brazil is among the OECD and partner countries with the largest increases in the percentage of public expenditure that is spent on education.**

- From 1995 to 2005, Brazil experienced a 3.3 percentage point increase in the share of total public expenditure that is spent on education for all levels of education combined, rising from 11.2% to 14.5%. This was the highest increase among OECD and partner countries only after the Netherlands (with an increase from 8.9% to 11.5%) and the Slovak Republic (with an increase from 14.1% to 19.5%) (Table B4.1).

- As for public expenditure in education as a percentage of GDP, Brazil also recorded a considerable increase from 3.9% in 1995 to 4.5% in 2005 (Table B4.1).

- In most countries, the main increase in expenditure on education relative to total public expenditure during this ten-year period took place between 1995 and 2000, in Brazil the increase occurred between 2000 and 2005. In fact, in Brazil, public expenditure on education as a proportion of total public expenditure decreased in the period 1995 to 2000 (Table B4.1).

**There are large differences among OECD countries in the average tuition fees charged by tertiary-type A public institutions.**

- In eight OECD countries public institutions charge no tuition fees, but in one-third of countries public institutions charge annual tuition fees for national students in excess of USD 1 500. Among the EU19 countries, only the Netherlands and the United Kingdom have annual tuition fees that represent more than USD 1 000 per full-time student; these [No data available]
relate to government-dependent institutions (Table B5.1a).

- When tuition fees are charged, tertiary institutions are responsible for setting tuition fee levels in almost all countries and for determining the level of tuition fees. Only Japan, the Netherlands, Spain and Switzerland have levels of tuition fees set exclusively by educational authorities (at central, regional or local levels) at least for some of their tertiary institutions (Table B5.1b).

- An average of 18% of public spending on tertiary education is devoted to supporting students, households and other private entities. In Australia, Denmark, the Netherlands, New Zealand, Norway and Sweden and the partner country Chile, public subsidies to households account for some 27% or more of public tertiary education budgets (Table B5.2).

- Low annual tuition fees charged by tertiary-type A institutions are not systematically associated with a low proportion of students who benefit from public subsidies. In tertiary-type A education, the tuition fees charged by public institutions for national students are negligible in the Nordic countries and in the Czech Republic and are low in Turkey. And yet more than 55% of the students enrolled in tertiary-type A education in these countries can benefit from scholarships/grants and/or public loans. Moreover, Finland, Norway and Sweden are among the seven countries with the highest entry rate to tertiary-type A education.

- OECD countries in which students are required to pay tuition fees and can benefit from particularly large public subsidies do not show lower levels of access to tertiary-type A education than the OECD average. For example, Australia (82%) and New Zealand (79%) have among the highest entry rates to tertiary-type A education, and the Netherlands (59%) and the United States (64%) are above the OECD average. The United Kingdom (51%) and partner country Chile (48%) are just below the OECD average (54%), although entry to tertiary-type A education increased by 4 and 6 percentage points, respectively, between 2000 and 2005 in these countries.

- In Brazil, the percentage of public subsidies allocated to private entities for tertiary education study is 12.1%. From this percentage, 6.8% goes to scholarships and other grants to households, 4.3% goes to student loans and 1.0% goes to transfers and payments to other private entities (this last percentage, unlike the others, is higher than the OECD average of 0.3%) (Table B5.2).

<table>
<thead>
<tr>
<th>Instruction time, teachers’ salaries, and student-teacher ratios vary widely among countries, which affects the level of expenditure per student.</th>
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<tbody>
<tr>
<td>The choices countries make about how many hours and years students spend in the classroom and the subjects they study reflect national priorities and preferences. Budgetary considerations also help shape education: Teachers’ salaries represent the</td>
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[No data available on teachers’ salaries]
largest single cost in providing school education and, as such, are a critical consideration for policymakers striving to both maintain the quality of education and to contain spending. While class size has become a hot topic in many OECD countries, evidence on its impact on student performance is mixed. 

- Differences in teachers’ salaries, along with other factors such as student-to-staff ratios (see Indicator D2), provide some explanation of the differences in expenditure per student (see Indicators B1 and B7).
- Salaries of teachers with at least 15 years experience at the lower secondary level range from less than USD 15 000 in Hungary and in partner countries Chile and Estonia to USD 51 000 or more in Germany, Korea and Switzerland, and exceed USD 90 000 in Luxembourg (Table D3.1).
- Salaries for teachers with at least 15 years experience in lower secondary education are over twice the GDP per capita in Korea, whereas in Norway, and in partner countries Estonia and Israel, salaries are 75% or less than the GDP per capita.
- Teachers’ salaries have risen in real terms between 1996 and 2006 in virtually all countries, with the largest increases in Finland, Hungary and Mexico (and in starting salaries in Australia) and in partner country Estonia. Salaries at the primary and upper secondary levels in Spain fell in real terms over the period, although they remain above the OECD average (Tables D3.1 and D3.2).
- On average in OECD countries, upper secondary teachers’ salaries per teaching hour exceed those of primary teachers by 44%; the difference is 5% or less in New Zealand, Scotland and the partner country Chile and is equal to or greater than 75% in Denmark and the Netherlands (Table D3.2).

Brazil is among the countries with the largest class sizes, both at the primary and lower secondary level, with a comparatively large difference between public and private institutions. 

- In general, class size in Brazil is above the OECD average. At the primary level, considering public and private schools together, Brazil has an average of 25 students per class. At the secondary level, this percentage is higher, with 32 students per class (Table D2.1).
- Both at the primary and lower secondary levels of education, there is a difference in the number of students per class depending on whether schools are public or private. Public primary and lower secondary

| The average class size in primary education is slightly more than 21 students per class, but varies from 32 in Korea, to fewer than half that number in Luxembourg and the partner country the Russian Federation. |
| Brazil is among the countries with the largest class sizes, both at the primary and lower secondary level, with a comparatively large difference between public and private institutions. |
| The average class size in lower secondary education is 24 students per class, but varies from about 30 or more in Japan, Korea and Mexico and the partner countries Brazil, Chile and Israel, to 20 or fewer in Denmark, Iceland, Ireland (public institutions), Luxembourg and Switzerland and the partner country the Russian Federation. |
| From 2000 to 2006, average class size did not vary significantly, but differences in class size among |
OECD countries seem to have diminished. Class size tends to have decreased in countries that had relatively large class sizes in 2000 (such as Japan, Korea and Turkey) whereas it tends to have increased in countries with relatively small class sizes (such as Iceland).

Schools have about 7 students more per class than private institutions, whereas on average across OECD countries, class sizes do not differ between public and private institutions by more than one or two students per class (the greatest exceptions would be the United Kingdom, with a difference of 13 students more in public institutions, as well as Poland and Turkey, with 8 and 10 students more, respectively) (Table D2.1).

Students in OECD countries are expected to receive, on average, 6,907 hours of instruction between the ages of 7 and 14, of which 1,591 hours take place between ages 7 and 8, 2,518 between ages 9 and 11, and 2,798 between ages 12 and 14. The large majority of intended hours of instruction are compulsory.

- In OECD countries, 7- to 8-year-olds receive an average of 770 hours per year of compulsory instruction time and 796 hours per year of intended instruction time in the classroom. Those aged 9 to 11 receive about 40 compulsory hours more per year than 7- to 8-year-olds and those aged 12 to 14 receive just over 86 hours more per year than 9- to 11-year-olds (Table D1.1).

- On average across OECD countries, the teaching of reading, writing and literature, mathematics and science represents nearly 50% of the compulsory instruction time for 9- to 11-year-olds and 40% for 12- to 14-year-olds. For 9- to 11-year-olds, the proportion of compulsory curriculum devoted to reading, writing and literature varies widely from 13% in Australia to 30% or more in France, Mexico and the Netherlands (Table D1.2).

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The number of teaching hours in public lower secondary schools averages 717 hours a year but ranges from 548 hours in Korea to over 1,000 in Mexico (1,047) and the United States (1,080).

- The number of teaching hours in public primary schools averages 812 per year (9 more than in 2005), but ranges from less than 650 in Denmark, Turkey and the partner country Estonia to 1,080 in the United States (Table D4.1).

- The average number of teaching hours in upper secondary general education is 667, but ranges from 364 in Denmark to 1,080 in the United States (Table D4.1).

- The composition of teachers' annual teaching time, in terms of days, weeks and hours per day, varies considerably. For instance, while teachers in Denmark teach for 42 weeks per year (in primary and secondary education) and teachers in Iceland for 35-36 weeks per year, teachers in Iceland have more

Teachers in Brazil teach more weeks and days than the OECD average, but the total statutory working hours for Brazilian teachers is half the OECD average.

- Brazil, along with Denmark and Mexico, requires 200 days of instruction for primary teachers. This is well above the OECD average of 187 days, and the second highest number of days across OECD and partner countries (only Korea is higher, with 204 days) (Table D4.1).

- Also at the primary level, the 40 weeks of instruction required for teachers in Brazil is above the OECD average of 38 weeks. Only Denmark and Mexico have a higher number of required weeks of instruction (42) (Table D4.1).

- However, both the required net teaching time in hours and the required working time at school in hours are below the OECD average: At the primary level, net teaching time is 12 hours less than the OECD average (although it is up to 133 hours above the OECD
total annual teaching time (in hours) than teachers in Denmark (Table D4.1).

- Regulations concerning teachers’ working time also vary. In most countries, teachers are formally required to work a specific number of hours; in some, teaching time is only specified as the number of lessons per week and assumptions may be made on the amount of non-teaching time required per lesson (at school or elsewhere). For example, in Belgium (Fr.), additional non-teaching hours at school are set at the school level; the government only defines the minimum and maximum number of teaching periods per week at each level of education.

  average at the secondary level), and working time is 385 hours below the OECD average. The gap becomes more pronounced when observing the total statutory teaching time in hours at the primary level, where Brazil requires 800 hours, while the OECD average is 1662 (Table D4.1).
EQUITY CHALLENGES

While individuals with high level qualifications continue to see strong labour-market returns, those without strong baseline qualifications, defined by the OECD as those who have not attained a qualification at the upper secondary level, have seen rapidly deteriorating labour-market prospects in most countries. It is therefore increasingly important for education and training systems to ensure that young adults leave schools with strong baseline qualifications or attain these subsequently. *Education at a Glance 2008* provides a range of indicators on disparities in educational attainment and their labour-market consequences.
Global trends

In most OECD countries, virtually everyone now has access to at least 12 years of formal education and full enrolment (defined here as enrolment rates exceeding 90%) tends to begin between the ages of 5 and 6, but there is significant variability both at the beginning and ending of initial education.

- At least 90% of students are enrolled in education in an age range spanning 14 or more years in Belgium, France, Germany, Hungary, Iceland, Japan, Norway and Spain. In contrast, Mexico and Turkey have enrolment rates exceeding 90% for only nine and six years, respectively; the corresponding figure for the partner country the Russian Federation is nine years (Table C2.1).

- Enrolment rates for children 4 years or younger range from less than 25% in Korea and Turkey to over 90% in Belgium, Denmark, France, Germany, Iceland, Italy, New Zealand, Spain and the United Kingdom (Table C2.1). Young children are more likely to be enrolled in the countries of the European Union than in other OECD countries (the enrolment rate for 3-to-4-year-olds averages 76.7% for the EU19, while the OECD average is 69.4%) (Table C2.1).

- Enrolment rates for 15-to-19-year-olds increased on average from 74 to 81% from 1995 to 2006. In Belgium, Greece and Poland, and the partner country Slovenia, they reached more than 90% in 2006 (in Belgium they had already reached this level in 1995). The pattern is similar for 20-to-29-year-olds, an age group in which most students are enrolled in tertiary education; between 1995 and 2006, their enrolment rates increased in all OECD countries except Portugal (Table C2.2).

Key results for the partner country Brazil

Enrolment rates in Brazil are still slightly under the OECD average, but improvements are being made.

- The number of years at which 90% of the population are enrolled is of 10, which is 3 years less than the OECD average (Table C2.1).

- Nevertheless, while the ending age of compulsory education is 14-years-old in Brazil, the age range at which 90% of the population are enrolled goes from 7 to 16 (Table C2.1).

- Furthermore, from 2000 to 2005, the enrolment rates among 15-to-19-year-olds in public or private institutions increased from 75% to 80%, while the OECD average evolved from 77% to 81%. The percentage of enrolment for this age group in Brazil is higher or similar as in Austria, Canada, Italy, Luxembourg, Mexico, New Zealand, Portugal, Turkey, the United Kingdom and the United States, as well as partner countries Chile, Israel and the Russian Federation, where the formal ending age of compulsory education ranges between 14 and 18 years-old(Tables C2.1 and C2.2)

- In 2005, about 93% of the population aged 5-to-14 were enrolled in education and nearly 80% aged 15-to-19 attended full-time or part-time education in public or private institutions. Although Brazil’s percentages are still slightly below the OECD countries, these are encouraging achievements, as Brazil seems to be speedily catching up with the OECD average (Table C2.1 and C2.2).

- From the population aged 20-to-29, 21% are still in education, which is slightly below the OECD average of 25%. Nevertheless, for students aged 30-to-39 and students aged 40 and over, the percentage of full-time and part time enrolments in public and private institutions is 8.1% and 2.4%, respectively. These percentages are well above the OECD average of 5.7% and 1.4%, and are also above the percentages of enrolment in all other partner countries for these same age groups (Table C2.1).

The proportion of individuals who have completed upper secondary education has been growing in almost all OECD countries and is now the norm among the younger cohorts, but a significant minority remains left out.

- In the last 11 years, the proportion of students graduating from upper secondary programmes has increased by seven percentage points on average in
OECD countries with available data. In 17 of 24 OECD countries, the ratio of upper secondary graduates to the population at the typical age of graduation is 80% or higher and in the Czech Republic, Finland, Germany, Greece, Iceland, Japan, Korea and Norway it exceeds 90%. However, in Luxembourg, Mexico, New Zealand, Spain, Sweden, Turkey and the United States more than 20% leave school without attaining an upper secondary degree (Tables A1.2 and A2.2).

- Those who have attained at least upper secondary education enjoy substantial earnings advantages (Chart A9.4). For many countries, the earnings disadvantage of those without upper secondary qualifications has significantly worsened (Table A9.2a).

- Gender differences in employment and unemployment rates are largest among those without upper secondary education (Chart A8.1).

Some countries have been successful in improving educational opportunities among youths in difficult labour-market situations.

- Most OECD countries have expanded their education system to accommodate more of the younger cohorts. For 15-to-19-year-olds, recruitment to education has largely taken place among individuals outside the labour market (not in education or employment) and to a lesser extent among employed individuals. With few exceptions, policies to expand education systems have thus helped to lower unemployment and inactivity among young adults (Tables C4.2a and C4.3).

- The 15-to-19-year-old population that is not in education is generally associated with being unemployed or out of the labour force. Some countries are better able than others to provide employment for young adults with relatively low educational attainment. In Iceland, Japan and Norway, more than 70% of this age group not in education have employment (Tables C4.2a and C4.3).

- On average, completing upper secondary education reduces unemployment among 20-to-24-year-olds by 7.4 percentage points and that of 25-to-29-year-olds by 6.8 percentage points. The lack of an upper secondary qualification is clearly a serious impediment to finding employment, and a tertiary qualification further increases the likelihood of job

Overall, 30% of the population in Brazil aged 25-to-64 have attained upper secondary education. OECD countries, Portugal, Mexico and Turkey face a similar situation, where still less than 50% of the population has attained the upper secondary level (Table A1.2a and Chart A1.2).

- In Brazil, 38% of the population between 25-and-34 years-old have attained upper secondary education. This is half the OECD average of 78% (Table A1.2a).

- Nevertheless, it is important to consider as well that, across OECD and partner countries, Brazil has as well the lowest percentage of 11% of the population between 55-to-64-years-old having attained at least upper secondary education. The difference of attainment between this older and younger age cohorts is of 28 percentage points, and above the OECD average, with a 23 points difference, indicating the progress that Brazil has made (Table A1.2a).

[No data available]
seekers finding employment (Tables C4.2a and C4.3).

**Continuing education and training often does not reach those who need it most.**

- In many countries, non-formal continuing education and training now also plays a significant role in raising the stock of knowledge and skills. There are major differences among countries in the number of hours that individuals can expect to spend in non-formal job-related education and training over a typical working life. At the tertiary level, it ranges from less than 350 hours in Greece, Italy and the Netherlands to more than 1 000 in Denmark, Finland, France and Switzerland (Table C5.1a).

- The relative intensity (number of hours) of non-formal job-related education and training typically increases sharply with educational attainment (except in the United Kingdom, Italy and the Netherlands). The expected hours in non-formal job-related education and training among 25-64-year-olds with tertiary qualifications is, on average across countries, nearly twice as high than among those with upper secondary qualifications and more than three times as high as than among those without upper secondary qualifications (Table C5.1a).

- An older worker with tertiary education can expect to receive at least 70% of the education and training of a young worker in Denmark, Sweden and the United States, but the proportion falls below 20% in France, Hungary and the Netherlands. Adults with higher levels of educational attainment are more likely to participate in non-formal job-related continuing education and training than adults with lower educational attainment (Table C5.1a).

**Countries vary greatly in how well they succeed in enabling students from blue-collar backgrounds to participate in higher education.**

- Ireland and Spain stand out as providing the most equitable access to higher education, whereas in Austria, France, Germany and Portugal students from a blue-collar background are about one-half as likely to be in higher education as compared with what their proportion in the population would suggest (Indicator A7).

- When measuring the socio-economic status of students in higher education by their fathers’ educational background large differences between countries emerge. In many countries, students are substantially more likely to be in higher education if their fathers completed higher education. Students from such a background are more than twice as
likely to be in higher education in Austria, France, Germany, Portugal and the United Kingdom than are students whose fathers did not complete higher education. In Ireland and Spain this ratio drops to 1.1 and 1.5, respectively.

- Among the countries providing information on the socio-economic status of students in higher education it appears that inequalities in previous schooling are reflected in the intake of students from less advantaged backgrounds. Countries providing more equitable access to higher education – such as Finland, Ireland and Spain – were also the countries with the most equal between-school performances, as show by data collected in 2000 by OECD PISA.

In almost half of the countries, the majority of upper secondary students are enrolled in vocational programmes. However, in key subject areas, the performance of students in vocational programmes tends to lag considerably behind that of general programmes

- In 13 out of 28 OECD countries and the partner country Slovenia, the majority of upper secondary students are enrolled in pre-vocational and vocational programmes. In most OECD countries, a significant proportion of upper secondary vocational education is school-based.

- In OECD countries with available data, vocational qualification is concentrated in engineering, manufacturing and construction at both the upper secondary (34%) and post-secondary non-tertiary (22%) levels.

- The 14 OECD countries for which data are available spend, on average, USD 925 more per student on upper secondary vocational programmes than on general programmes.

- PISA 2006 shows that 15-year-olds in pre-vocational and vocational programmes have statistically significant lower performance in science compared to students enrolled in general programmes in 12 out of the 14 OECD countries for which data are available. On average, 15-year-olds enrolled in general programmes score 35 points higher and after adjusting for socio-economic factors a difference of 24 points still remains.

- Brazil does not follow the same trend as OECD countries. Indeed, in Brazil, for the year of 2005, 100% of students were enrolled in ISCED 3A programmes destination. As for programme orientation, 94% were enrolled in general programmes and only 6% were enrolled in vocational programmes (Table C1.1).
### NOTES

- “Non-formal education” is defined as organised and sustained educational activities that are not typically provided in the system of schools, colleges, universities and other formal institutions that constitutes a continuous ladder of full-time education for children and young people. Non-formal education may take place both within and outside educational institutions, and cater to persons of all ages. For detailed definitions, see Indicator C5 in *Education at a Glance 2008*.

- “Tertiary-level education” is defined as higher education (HE). Indicators cover both the current performance of the HE system and the proportion of the adult population (25-to-64-year-olds) who have attained HE qualifications. There are splits by gender and type of course – divided into vocational courses (Type B) and full-length (duration of more than three years) theory-based degrees (Type A), including bachelor and masters degrees. Graduation rate is defined as the ratio of tertiary graduates to the population at typical age of graduation.

- “Lower secondary education” is defined as schooling between the ages of 11 and 13.

- “Upper secondary education” identifies a level of attainment, not necessarily reached while the individual was actually participating in secondary education.

- “Statutory salaries”. The data on teacher pay are based on statutory pay (pay scales) in 2004 and do not attempt to capture actual average pay which will include discretionary allowances for extra duties as well as reflecting the age structure of the teacher labour force. Furthermore, the figures are for classroom teachers and so do not reflect the pay of teachers promoted to heads and deputy headships. They also do not include bonuses and supplementary payments, which are considerable in some countries.