

Education at a Glance 2007

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OECD Briefing Note for Finland

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 Directorate for Education 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 Finland** with **global trends among OECD countries**, under the headings: quantity and quality challenges, equity challenges, and resource and efficiency challenges.

Education at a Glance 2007, as well as its executive summary, all data and web-only tables, can be downloaded free of charge at www.oecd.org/edu/eag2007.

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QUANTITY AND QUALITY CHALLENGES

*Previous editions of **Education at a Glance** have shown how demands for more and better education have driven a massive quantitative expansion of education systems in OECD countries, particularly at the tertiary level of education. What has been the impact of this on labour market returns? Has the increasing supply of well-educated labour been matched by the creation of an equivalent number of high-paying jobs? Or one day will everyone have a university degree and work for the minimum wage?*

It is certainly conceivable that at least some new graduates will end up doing jobs that do not require graduate skills and that they will obtain these jobs at the expense of less highly qualified workers. Such a crowding-out effect may be associated with a relative rise in unemployment among people with low qualifications (as higher-qualified workers take their jobs), but also potentially with a reduction in the pay premium associated with tertiary qualifications (as a rise in graduate supply outstrips any rise in demand for graduate skills).

***Education at a Glance 2007** examines this question and the results suggest that the expansion has had a positive impact for individuals and economies and that there are, as yet, no signs of an “inflation” of the labour-market value of qualifications.*

Global trends

Education systems continue to expand at a rapid pace.

- In most OECD countries, among adults aged 55 to 64 (who entered the workforce in the 1960s and early 1970s) between 7 and 27% have completed higher education, except in Canada and the United States where more than 30% have done so. Among younger adults aged 25 to 34, at least 30% have obtained tertiary qualifications in 19 countries and over 40% have in 6 countries (Indicator A1). On average, the proportion of the population with tertiary qualifications has risen from 19 to 32% of the population between these two groups.
- Although most countries have seen at least some growth in tertiary enrolments (Indicator C2) and in tertiary attainment, the rate of expansion has varied widely from one country to another and from one time period to another. Much of the growth has come from periods of rapid, policy-driven expansion in certain countries. Korea, Ireland and Spain, for example, more than doubled the proportion of tertiary graduates entering the workforce between the late 1970s and the late 1990s from initially low levels. In the United States and Germany, the proportion remained largely unchanged, with relatively high levels in the United States and comparatively low levels in Germany (Indicator A1).
- Current rates of graduation from traditional universities range from around 20% or less in Austria, Germany and Turkey to more than 40% in Australia, Denmark, Finland, Iceland, Italy, the Netherlands, New Zealand, Norway and Poland. These graduation rates tend to be higher in countries where the programmes provided are of shorter duration.
- On average across OECD countries, the graduation rate for shorter, vocationally oriented programmes represents 9%, and 1.3% for programmes leading to

Key results for Finland

- ... but Finland, although a limited expansion, keeps showing among the highest results.
- Graduation from upper secondary education is becoming the norm in most OECD countries. In Finland, 79% of the population aged 25-to-64 has attained at least upper secondary education and 89% of the 25-to-34-year-old population.
- Finland has seen a continuous growth in tertiary qualifications over past generations and, with 47% of the typical age cohort completing a bachelor or masters degree (“tertiary-type A”), performs above the OECD average (36%) (Table A3.1).
- In 2002 Finland had, at 49%, the highest graduation rates for tertiary-type A programmes, while the OECD average was 31% (Table A3.2); in 2004, the OECD average was 35% and the graduation rate in Finland had slowed down to 47% and dropped to third place among OECD countries (Table A3.2).
- Tertiary enrolment in Finland increased by 3% between 2000 and 2005, considerably below the OECD average of 15% (Table C2.5) and well below the increases in the Czech Republic (68%) and the Slovak Republic (62%) during the same period. Despite this slow growth, Finland’s university entry rate is among the seven highest in the OECD area, 9 percentage points below the first place (Australia) but almost 20 percentage point above the OECD average.
- Post-secondary practical, technical or occupational skills programmes (“tertiary-type B”) in Finland are being phased out and the proportion of the age cohort graduating from these programmes has consequently fallen rapidly.

advanced research qualifications.	
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In most countries, the number of science graduates has increased faster than the overall number of graduates.

- The number of persons with a tertiary science degree per 100 000 employed persons ranges from below 700 in Hungary to above 2 200 in Australia, Finland, France, Ireland, Korea, New Zealand and the United Kingdom (Table A3.4).
- The ratio of younger to older age groups with science as a field of study is 3.0, compared with a ratio for all fields of study of 2.3. In Austria and Canada, the ratio is larger than 4.0, in Hungary and Ireland larger than 6.0, and in Portugal and Spain larger than 8.0 (Table A1.5).

- Finland students show a clear preference in engineering but health and welfare showed the greatest increase over recent decades.
- In Finland, the percentage of tertiary-type A qualifications awarded in science-related fields (engineering, manufacturing and construction, life sciences, physical sciences and agriculture, mathematics and computing, but not including health and welfare) is more than 30% (Indicator A3). Engineering makes up the main field of education, with 27% of students (Table A1.4).
- The ratio of younger to older age groups in the field of engineering is 1.9, in line with the OECD average of 1.9. The largest difference between young and old age groups in Finland is in the field of health and welfare where the ratio is 3.9 (only Portugal is doing better at 4.9), compared with an OECD average of 1.9. This suggests a substantial shift towards this field of education among younger individuals
- In Finland, the proportion of females graduating from tertiary-type A programmes in mathematics and computing is among the greatest in the OECD area (42%), along with Italy at 42%. It is lower than the proportion of females graduating from tertiary-type A programmes in all fields of education (62%). But the difference of 20 percentage points is 9 points below the OECD average (29%). Finland has among the smallest gender differential in this respect together with Italy, Korea, Mexico and Turkey.
- In Finland, students' attitudes toward mathematics has a strong relationship with students' achievement in mathematics, with above-average positive effects of interest, instrumental motivation and self-concept and an above-average negative effect of anxiety on mathematics performance (Indicator A5).

The effects of tertiary expansion: a high calibre workforce or the overqualified crowding out the lesser qualified?

- The labour-market and financial incentives for attaining tertiary qualifications continue to remain high for both men and women, despite the rapid growth in the number of those obtaining qualifications. This can be seen when contrasting the advantages of tertiary education for individuals in terms of higher average earnings, lower risks of unemployment and the public subsidies they receive during their studies, with the costs that individuals incur when studying, such as tuition fees, lost earnings during studies and higher tax rates later in life. In all countries with comparable data, the private rate of return for those who acquire tertiary degrees immediately following school is higher than real interest rates, and often significantly so, at a minimum of 9.8% in all eleven countries for which data are available – except for Denmark, New Zealand and Sweden (Table A9.6).

- The labour-market benefits of tertiary education continue to be high in Finland but financial incentives may not be the main driving factor.
- The earnings advantage of upper secondary education graduates in the 25-to-64-year-old population, relative to lower upper secondary graduates, was 3% in 1997 and reached 6% in 2004 (Table A9.2a).
- Despite the small earnings advantage of upper secondary education, the internal rate of return of obtaining a upper secondary education in Finland is not low because of the positive impact of the other factors : low cost of upper secondary education and reduced unemployment risk.
- In Finland, men aged 30-to-44 with a tertiary-type A education and advanced research programmes can expect earnings 90% higher than persons with only an upper secondary qualification, while in Hungary, men can expect earnings more than 200% higher and in Norway less than 60% higher (Table A9.1a).
- The earnings advantage of university-level graduates in the 25-to-64-year-old population, relative to upper

- The average unemployment rate among those with only lower secondary education is 5 percentage points higher than those whose highest level is upper secondary and 7 points higher than those with tertiary education (Indicator A8). The data show that while unemployment is substantially higher than the average among those with low qualifications, this situation has not worsened in those countries that have expanded tertiary education. However, in those countries that did not expand tertiary education, there has been a rise in the relative risk. Indeed, in these countries a failure to complete upper secondary education is now associated with an 80% greater probability of being unemployed, compared to less than 50% in those countries that have increased tertiary education the most.
- Countries expanding tertiary education attainment more in the late 1990s tended to have a greater fall (or smaller rise) in unemployment between 1995 and 2004 than countries with less tertiary expansion. For example, France, Ireland and Korea had the fastest growth in tertiary attainment and close to zero or negative growth in unemployment; Germany, the Czech Republic and the Slovak Republic had low or no growth in tertiary attainment but substantial growth in unemployment among the unqualified (Indicator A1).
- The indicators provide no evidence that the lesser qualified are crowded out from the labour market and there is much to point to the opposite: that the least educated individuals benefit in terms of better employment opportunities when more people enter higher education. In addition, an analysis of trends in the absolute level of unemployment for upper-secondary educated adults suggests that changes in the level of unemployment during the period 1995 to 2004 are unrelated to changes in tertiary attainment levels. In fact, for both upper and lower secondary unemployment, there is no statistically significant correlation between an expansion in tertiary attainment and movement in unemployment rates after controlling for growth in GDP. There is, however, a significant correlation between increases in tertiary and upper secondary attainments and the fall in relative unemployment for lower-secondary educated adults. All this suggests that employment prospects among the least well-educated are principally tied to growth in the economy and in general to productivity, to which an adequate supply of high-skilled labour can potentially contribute.
- Furthermore, higher qualifications do not create unemployment among those with tertiary qualifications or a slump in their pay. Although this does not imply that tertiary graduates enter jobs in line with their qualifications, it still indicates that the benefits of higher education have not deteriorated as

secondary graduates, was 48% in 1997, peaked at 52.8% by 1999 and fell back to 48.7% in 2004 (Table A9.2a). This trend has been driven by the relative male advantage, which was 58.7% in 1997, peaked at 67.3% by 1999 and fell back to 60.6% in 2004 (Table A9.2b), while females' earnings advantage has steadily increased, from 43% in 1997 to 46.1% in 2004.

- Upper secondary graduates in Finland have a much greater chance of finding jobs, and this is even more true for tertiary graduates (Table A8.3a,b,c).
- Although there is evidence that higher education brings an earnings advantage for both males and females, males benefit more than females since gender earnings differentials with the same educational attainment remain large. All levels of education together (i.e. total earnings are divided by the total number of income earners, by gender), the earnings of females between the ages of 30 and 44 range from 51% of those of males in Korea, to 84% of those of males in Luxembourg; in Finland this is 70% (Table A9.1b).

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higher education has expanded. And while there have been some small rises in the relative risk of unemployment for graduates, this has been no worse where tertiary attainment has expanded fastest.

- In all OECD countries graduates face much lower levels of unemployment than do other groups. In terms of pay, the data suggest some curbing of an increasing advantage for tertiary graduates where their supply has risen fastest, but not a general fall. This evidence corroborates similar results from cross-sectional studies, suggesting that lower-educated groups share in the benefit of more tertiary education and that the extra skills produced have largely been absorbed by the labour market. In tracking these phenomena over time, it is interesting to note that positive effects seem to be more pronounced in recent years, contradicting the notion that tertiary education, so far, is expanding too rapidly.

The internationalisation of tertiary education is proceeding rapidly.

- In 2005, over 2.7 million tertiary students were enrolled outside their country of citizenship. This represented a 5% increase in total foreign student intake reported to the OECD and the UNESCO Institute for Statistics from the previous year.
- 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. International students are most numerous in tertiary enrolments in Australia, Austria, France, New Zealand, Switzerland and the United Kingdom.
- France, Germany, the United Kingdom and the United States receive more than 50% of all foreign students worldwide. In absolute numbers, international students from France, Germany, Japan and Korea represent the largest numbers from OECD countries. Students from China and India comprise the largest numbers of international students from partner economies.
- In Spain, Switzerland and the United States, and the partner economy Brazil, more than 15% of international students are enrolled in advanced research programmes.
- 30% or more of international students are enrolled in sciences, agriculture or engineering in Finland, Germany, Hungary, Sweden, Switzerland, the United Kingdom and the United States.
- International graduates contribute to 20% or more of the graduate output for tertiary-type A programmes in Australia and the United Kingdom. The same holds for foreigners graduating in Belgium. The contribution of international and foreign graduates to the tertiary graduate output is especially high for advanced research programmes in Belgium, Switzerland, the United Kingdom and the United States.

... and in Finland, albeit at relatively low levels, the number of foreign students enrolled in tertiary education increased by 52%.

- The proportion of foreign students in tertiary education in Finland is among the lowest in the OECD, representing less than 3% of all tertiary enrollments.
- The extent of internationalisation is more pronounced in advanced research programmes, where international students represent 7.3% of enrolments in Finland, but it still far below the level observed in the OECD on average (16.5%) (Table C3.1).
- Compared to 2000, the number of foreign students enrolled in tertiary education in 2005 increased by 52% in Finland (Table C3.1). The enhanced attractiveness of Finland is presumably related to the provision of many education programmes in English, plus the absence of tuition fees for international as for domestic students.
- Unsurprisingly, international students in Finland enrol in science and engineering programmes in significant numbers (9.5% and 30.6% of the total, respectively). Large numbers of international students also enrol in social sciences, business and law, as well as in humanities and arts (23.4% and 16.4%, respectively) (Chart C3.4 and Table C3.5).

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 school with strong baseline qualifications or attain these subsequently.

Education at a Glance 2007 completes the data on the graduate output at the upper secondary level and the incidence and intensity of job-related non-formal education with new data on the relationship between social background and both learning outcomes at schools and participation in university-level education. The strength of the relationship between the socio-economic background of individuals and their educational outcomes provides one way of examining to what extent countries are using their potential in generating future human capital and allows for assessment of equity in the distribution of learning opportunities.

Global trends

- In most OECD countries, upper secondary education is becoming universal, but in some countries a sizeable minority is left behind.
- The proportion of individuals in the population who have successfully completed upper secondary education (see notes on definition at the end) has been rising in almost all OECD countries, and rapidly in some. In more than half of all OECD countries, the proportion of 25-to-34-year-olds with upper secondary qualifications now exceeds 80%, and in Canada, the Czech Republic, Korea, the Slovak Republic and Sweden it exceeds 90% (Table A1.2a).
- 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).

Key results for the Finland

- In Finland, the population has long had high standards of education from early age to adult stage and they keep improving.
- Ranked by upper secondary educational attainment in the population, Finland occupies the 13th position among 55-to-64-year-olds in the 29 OECD countries with data (i.e. those who completed school some 40 years ago), the 8th position among 45-to-54-year-olds, the 7th position among 35-to-44-year-olds, and the 6th position among 25-to-34-year-olds, who completed school a decade ago. By contrast, Korea ranks 23rd among 55-to-64-year-olds but 1st among 25-to-34-year-olds (Table A1.2a). Nevertheless, Finland's effort to improve overall levels of education and make upper secondary education a norm started in the 1970s, much earlier than in Korea.
- Since 2001, employment rates among university, upper secondary as well as below upper secondary graduates in Finland have been at or above the corresponding OECD averages. However, the detailed rates for males and females tell a different story. Male employment rates are below OECD averages, while female employment rates are above OECD averages (Table A8.3a, b and c).
- The penalties from not completing higher education measured as the proportion of the difference in employment rates between levels of education is higher for females than for males. For instance, employment rate of males with upper secondary education is 9.3% lower than for males with tertiary education, while the difference equates 12.2% for females.
- The penalties from not completing upper secondary education are also visible in the distribution of earnings. Among 25-to-64-year-olds in Finland without upper secondary qualifications, 26% earn half or less than the national median (23.5% for males and 30% for females), while less than 3% are in the group of top earners, whose average earnings exceed twice the country median, 4.3% for males and 0.8% for females (Table A9.4a, b and c).
- In Finland, the average number of expected years in education among 15-to-29-year-olds is higher for

	<p>females: 8.6 years compared with 8 years for males. Both are much higher than the OECD average of 6.9 years for females and 6.6 for males (table C4.1a).</p> <ul style="list-style-type: none"> • School enrolment rates are high, increasing and stable over time. • Despite gains made by OECD country Greece and partner countries in Eastern Europe over the past decade, Finland has continued to rank 7th among OECD countries for enrolment rates of 15-to-19-year-olds (Table C2.2). • Finland has ranked 1st for enrolment rates of 20-to-29-year-olds over the past decade, with 30% of 20-to-29-year-olds enrolled in education in 1996, 36% in 1999 and 43% in 2005. In the same period Finland has also continued to rank 6th for enrolment rates among those 40 and older, with 1% in 2006, 2% in 1999 and 3% in 2005 (Education at a Glance 1998, Tables C1.2 and Education at a Glance 2001, Table C1.2) .
<p><i>Schools and societies face major challenges in integrating immigrants.</i></p> <ul style="list-style-type: none"> • International migration has become a key issue in most OECD countries, sparking intense debate on how immigrants can be successfully integrated into societies and labour markets. The OECD Programme for International Student Assessment (PISA) adds an important new perspective to the discussion by assessing the educational success of 15-year-old students from immigrant families. It is clear that serious challenges lie ahead for education systems, particularly in Europe. Indicators show that: • Among the 14 OECD countries with significant immigrant populations, first-generation students lag 48 score points behind their native counterparts on the PISA mathematics scale, equivalent to more than a school year's progress, on average. The performance disadvantage of second-generation students also remains significant, at 40 score points. The disadvantage of students with an immigrant background varies widely across countries, from insignificant amounts in Australia, Canada, New Zealand and Macao-China to more than 90 score points in Belgium and Germany, even for second-generation children. • Second-generation students (who were born in the country of the assessment) tend to perform better than their first-generation counterparts (who were born in another country), as one might expect since they did not need to make transitions across systemic, cultural and linguistic borders. However, the gains vary widely across countries. In Canada, Luxembourg, Sweden and Switzerland, and the partner economy Hong Kong-China, second-generation students perform significantly better than first-generation 	<ul style="list-style-type: none"> • No data available for Finland.

<p>students, with the performance gap reduced by 31 score points in Switzerland and 58 score points in Sweden, while in Germany and New Zealand second-generation students born in these countries perform worse than first-generation students.</p> <ul style="list-style-type: none"> • The mathematics achievement of the highest performers among students with an immigrant background varies much less across countries than the achievement of the lowest-performing students with an immigrant background. • Despite performing less well on the whole than native students and generally coming from less advantaged families, students who have experienced immigration first-hand tend to report, throughout the OECD area, higher levels of interest and motivation in mathematics. 	
<p><i>Countries vary greatly in how well they succeed in enabling students from blue-collar backgrounds to participate in higher education.</i></p> <ul style="list-style-type: none"> • 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 shown by data collected in 2000 by OECD PISA. 	<p><i>Finland provides more equitable access to higher education</i></p> <ul style="list-style-type: none"> • In Finland, 48% of students in higher education had fathers who themselves also had a higher education qualification, while this was only the case for 28% of fathers of men in the same age group (Chart A7.2). • 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 in PISA 2000.

Initial education alone can no longer satisfy the rising and changing demand for skills, but job-related education and training is still least common among 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. In Denmark, Finland, Sweden and the United States, more than 35% of employees take part in non-formal job-related education and training each year. At the other end of the scale, Greece, Hungary, Italy, the Netherlands, Poland, Portugal and Spain provide such training to fewer than 10% of employees (Table C5.1a).
- In OECD countries, on average, the participation rate in non-formal continuing education and training among employees who have not completed upper secondary education is less than half the rate among those with upper secondary education and less than a quarter of the rate seen among those with tertiary education.

The intensity of participation in non-formal job-related education and training is comparatively high in Finland.

- In Finland, between the ages of 25 and 64, the total expected number of hours in non-formal job-related training per worker is 669, above the OECD average of 389 hours (Table C5.1a). Employed women can expect to spend more hours in non-formal job-related education and training than employed men, 701 versus 637, respectively.
- At below upper secondary level of education, the total expected number of hours in non-formal job-related training per worker is almost 500 hours. At the tertiary level of attainment, the expected number of hours in non-formal job-related training per worker is more than 1 000 hours.
- In some instances individuals in Finland with attainment below the upper secondary level can expect to spend more hours in non-formal job-related continuing education and training than persons in other countries who have attained a tertiary level of education. Finland is thus one of the more equitable countries in providing education and training for all individuals regardless of their previous education.
- In line with this is also the high level of participation rate in non-formal job-related education and training (36%) in Finland compared with the OECD average (18%).
- Against the general trend, there is an increase in expected non-formal job-related learning between the ages of 25 to 34 and 35 to 44 in the Czech Republic, Denmark, Finland and Sweden (Chart C5.3).

In some countries, student's expectations for their own educational future are also closely related to their social background.

- 57% of 15-year-olds in OECD countries expect to go to university, but this rate varies from as high as 95% of students in Korea to as low as 21% in Germany. Indicators show that expectations vary within countries according to individual performance levels, gender, socio-economic background and immigrant status. Data collected in 2003 through OECD PISA show that 15-year-olds' expectations for completing a university-level programme are closely linked with their performance in mathematics and reading. Regardless of their relative academic abilities, 15-year-olds from lower socio-economic backgrounds are less likely to expect to complete tertiary education than those from higher socio-economic backgrounds. In most countries, 15-year-old students from immigrant backgrounds are more likely to expect to complete a university-level programme than their native counterparts.

In Finland, there is less connection between students' educational expectations and social background than in many other countries.

- The percentage of 15-year-olds expecting to complete university-level studies in Finland is 52%, just above the OECD average (51%), but well behind the highest aspirations held by students in countries such as Canada (63%), Greece (65%), Korea (78%) and Turkey (77%) (Table A4.1a). There is no significant difference in expectations between females (54%) and males (50%) (Table A4.3a).
- For both reading and mathematics, Finland, Norway, Sweden, and Switzerland have the smallest differences among expectation rates between the highest and lowest performing students.
- In Finland, students with high socio-economic status are more likely to expect to complete university-level studies than students with low socio-economic status, but to a lesser extent than in other OECD countries, excluding Turkey (Table A4.4).

RESOURCE AND EFFICIENCY CHALLENGES

*The expansion of education has been accompanied by massive financial investments. **Education at a Glance 2007** shows that between 1995 and 2004, and for all levels of education combined, expenditure on educational institutions increased by an average of 42% in OECD countries. The sustainability of the continued expansion will, however, depend on re-thinking how education is financed and how to ensure that it is more efficient. In some countries, spending per student has already begun to decline – most notably in the Czech Republic, Hungary, the United Kingdom and Poland – as enrolments rose faster than spending on tertiary 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 pay scales based on qualifications and automatic increases) have made personnel costs rise over time.

Global trends

OECD countries spend 6.2% of their collective GDP on educational institutions, but the rise in spending on education between 1995 and 2004 fell behind growth in national income. There is further scope for enhancing the efficiency of educational spending.

- More people are completing upper secondary and tertiary education than ever before, and in many countries the expansion has been accompanied by massive financial investments. Between 1995 and 2004 and for all levels of education combined, expenditure on educational institutions stepped up in the 24 countries with comparable data for the period. The increase reached, on average, 42% in OECD countries and was usually larger for tertiary education than for primary to post-secondary non-tertiary levels of education combined.
- At the tertiary level of education, the rise in expenditure over the period 1995-2004 was more pronounced from 2000 onwards than before 2000 in nearly one-half of OECD countries. Between 2000 and 2004, expenditure increased by more than 30 percentage points in the Czech Republic, Greece, Mexico, Poland, the Slovak Republic and Switzerland and the partner economy Chile.
- It is important to relate overall spending on education to the investment made per student. OECD countries as a whole spend USD 7 572 per student annually between primary and tertiary education, that is USD 5 331 per primary student, USD 7 163 per secondary student and USD 14 027 per tertiary student, but these averages mask a broad range of expenditure across countries. As represented by the simple average across all OECD countries, countries spend twice as much per student at the tertiary level than at the primary level.
- Lower unit expenditure does not necessarily lead to lower achievement and it would be misleading to

Key results for Finland

Finland has shown consistent rises in educational investment...

- Starting from a comparatively above-average base by OECD standards, Finland has shown consistent rises in its investment in education in absolute terms (+34% between 1995 and 2004, table B2.3).
- Relative to national income, spending on educational institutions in Finland decreased from 6.4% of GDP in 1990 to 6.3% in 1995, to 5.6% in 2000 and reached 6.1% in 2004, a value that is slightly above the OECD average of 5.8%. As well as in 8 OECD countries with available data, spending on educational institutions did not match growth in national income, such that expenditure as a proportion of GDP actually declined (Chart B2.1 based on Table B2.1a).

... as well as in terms of a growing educational share in the public budget.

- The share of public expenditure on all services in Finland decreased as a percentage of GDP between 1995 and 2004 (Chart B4.2).
- Nonetheless, the share of public expenditure that is devoted to education has increased in Finland from 11% in 1995 to 12.8% in 2004, compared with the increase over the same period from 12.3% to 13.4% on average for the OECD countries (Table B4.1).

Most of the additional resources were invested in school education.

- Most of the additional (public and private) resources were invested in school education, where expenditure increased between 1995 and 2004 by 35% in absolute terms (the OECD average increase was 39%), while spending on tertiary institutions increased, at 28%, while the OECD average increase was 55% (Table B1.5).

At primary, secondary and tertiary levels, spending per

<p>equate lower unit expenditure generally with lower quality of educational services. For example, the cumulative expenditure of Korea and the Netherlands is below the OECD average and yet both are among the best-performing countries in the OECD PISA 2003 survey.</p> <ul style="list-style-type: none"> • Countries with low levels of expenditure per student can nevertheless show distributions of investment relative to GDP per capita similar to those countries with high levels of spending per student. For example, Hungary, Korea, Poland and Portugal, and the partner economy Estonia – countries with expenditure per student and GDP per capita below the OECD average at primary, secondary and post-secondary non-tertiary level of education – spend a higher proportion of money per student relative to GDP per capita than the OECD average. • Expenditure per student at primary, secondary and post-secondary non-tertiary levels progressed by 50% or more between 1995 and 2004 in Greece, Hungary, Ireland, Poland, Portugal, the Slovak Republic and Turkey, and the partner economy Chile. On the other hand, spending per student at the tertiary level has in some cases fallen, as expenditure does not keep up with expanding student numbers • Expenditure on education tends to rise over time in real terms, as teachers’ pay (the main component of costs) rises in line with general earnings. On the one hand, rising unit costs that are not paralleled by increasing outcomes raise the spectre of falling productivity levels in education. Across OECD countries, there is potential for increasing learning outcomes by 22% while maintaining current levels of resources (output efficiency). The scope for reducing the resources devoted to education while maintaining the current levels of outcomes is slightly larger, at 30% (input efficiency). Differences in estimates of efficiency for different types of school (e.g. public and private) tend to be modest, when looking at the OECD as whole, though efficiency savings are greater for smaller schools than for larger schools (Indicator B7). 	<p><i>student is above the OECD average...</i></p> <ul style="list-style-type: none"> • Potential impact on the quality of educational services is measured in the resources invested in education compared with the number of students enrolled. Spending per student across all levels of education (excluding pre-primary education) in Finland, at USD 7,798 (equivalent), above the OECD average of USD 7,061. While spending per student at the primary level (USD 5,581) is below the corresponding OECD average (USD 5,832), spending per student at the secondary level (USD 7,441) has once again fallen below the OECD average (USD 7,276). At USD 12,505, spending at the tertiary level also exceeds the OECD average of USD 11,100 (Table B1.1). • In 2004, Finland invests USD 4,282 per child at the pre-primary level, below the OECD average spending per child of USD 4,741 (Table B1.1a). While in 1998, early childhood investment represented USD 6,340, 1.83 times the OECD total. • While decreasing spending levels since 1998, the rate of participation of 4-year-olds and under as a percentage of the 3-to-4-year-old population increased from 23.5% in 1998 to 42.3% in 2005 but staying below the OECD average of 39.6% in 1998 and 68.5% in 2005 (Table B1.2, Table C2.1 and corresponding tables in Education at a Glance 2000). • These levels of spending per child have been achieved with a higher ratio of students to teaching staff at this level, 11.9% in 1998 to 12.5% in 2005, but which is still below the OECD average of 15.5% in 1998 and 14.8% in 2005 (Table B7.1 in Education at a Glance 2000, Table D2.2). • Different supply and demand factors have influenced variation in spending per student across countries. In Finland, spending on primary and secondary education increased by 35% while enrolments rose by 11%, resulting in a spending increase per student of 22% (15th largest out of 22 countries with available data) between 1995 and 2004. That is significantly less than the OECD average increase of 38% in per-student spending. However, Finland had the 6th largest growth in student numbers (the OECD average was only 1%) (Table B1.5).
<p><i>Instruction time, teachers’ salaries, and student-teacher ratios vary widely among countries.</i></p> <ul style="list-style-type: none"> • 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 largest single cost in providing school education and, as such, are a critical consideration for policy-makers striving to both maintain the quality of education and to contain spending. While class size 	<p><i>Although data is unavailable on average class sizes in Finland, information is available on student/teacher ratios which are low in Finland</i></p> <ul style="list-style-type: none"> • Figures on ratio of students to teaching staff potentially demonstrates the high availability of resources in Finland: the ratio of students to teaching staff is 15.9 for primary schools (OECD average 16.7), 13.2 for secondary education (OECD average 13.4), and 15.5 for tertiary education (OECD average 15.8). <p><i>Finland has the lowest instructions time of all OECD</i></p>

has become a hot topic in many OECD countries, evidence on its impact on student performance is mixed. Among the findings on these nuts-and-bolts educational policy issues:

- Students in OECD countries are expected to receive, on average, 6 898 hours of instruction between the ages of 7 and 14, of which: 1 586 hours are between ages 7 and 8; 2 518 hours between ages 9 and 11; and 2 794 hours between ages 12 and 14. The large majority of intended hours of instruction are compulsory.
- In OECD countries, students between the ages of 7 and 8 receive an average of 769 hours per year of compulsory instruction time and 793 hours per year of intended instruction time in the classroom. Students between the ages of 9 and 11 receive about 45 hours more per year, and those aged between 12 and 14 receive just over 90 hours more per year than those aged between 9 and 11.
- Salaries for teachers with at least 15 years' experience in lower secondary education are over twice the level of GDP per capita in Korea and Mexico; in Iceland, Norway and the partner economy Israel, salaries are 75% or less than GDP per capita. Those salaries range from less than USD 16 000 in Hungary to USD 51 000 or more in Germany, Korea and Switzerland, and more than USD 88 000 in Luxembourg.
- The average class size in primary education is 22 students per class, but varies between countries from 33 in Korea to less than half that number in Luxembourg and the partner economy the Russian Federation. From 2000 to 2005, the average class size did not vary significantly, but the differences in class size between OECD countries seem to have diminished. Class size tends to have decreased in countries that used to have relatively large class sizes (for example, in Japan, Korea and Turkey) whereas class size tends to have increased in countries with relatively small class sizes (for example, Iceland) (see 2000 data in Table D2.4 on the web only).
- The number of students per class rises by an average of nearly three students between primary and lower secondary education, but ratios of students to teaching staff tend to diminish with increasing levels of education due to more annual instruction time, though this pattern is not uniform among countries.
- In primary and secondary education, OECD countries spend 91% on current expenditure of which 63.5% is for the compensation of teachers, 15.5% for the compensation of other staff, and 19.9% for other current expenditure. At the tertiary level of education, 89.3% is devoted to current expenditure, of which 42.7% is for the compensation of teachers, 23.6% for the compensation of other staff, and 33.8% for other

countries

- The total number of intended instruction hours, of which the large majority are compulsory, in public institutions per year is 5 713 hours in Finland (between 7 and 14 years) compared with the OECD average of 6 898. However, instruction time increase with student's age. In Finland, students between the ages of 7 and 8 receive 530 hours per year of compulsory instruction, whereas, students between and 11 years receive 654 hours, while students in the 12 to 14 year age bracket receive 796 hours and those aged 15 receive 858 hours.
- Not surprisingly, and following trends in other OECD countries, reading, writing and literature takes up the most of instruction time followed by mathematics and science. However this difference between hours of instruction time by subject decreases with student's age. For example reading, writing and literature takes up 23% of compulsory instruction time for 9-to-11 year olds, compared with only 13% of time in 12-to-14 year olds group. 16% of time is spent on mathematic for the younger age groups, where as it drops to 14% for older children.

Finland does well in youth-transition markers

- Finland comes in as number one in terms of graduation rates from upper secondary programmes designed to prepare students for tertiary-type A education (over 90%). This investment is probably one factor which helps to secure Finland's top-5 status in terms of entry rates in to tertiary education (over 70%). Only Australia, Norway Poland and Sweden have higher entry levels.

Finland continues to support teaching with high salary increases

- Between the period 1996 and 2005, salaries in Finland for newly trained teachers rose by 34%, 38% and 43% for teachers in primary, lower secondary and upper secondary level respectively. This marks one of the highest salary increases in OECD area, with only Hungary providing a higher increase at all levels (Table D3.2).
- Newly qualified teachers in Finland at primary level can expect to earn a yearly salary of USD 27 806, just above the OECD average of USD 27 703. Salaries rise with experience: teachers in primary level earning USD 32 406 with 15 years of experience. The OECD average after 15 years is slightly higher at USD 37 603 (Table D3.1).
- As is the case in most OECD countries, teachers's salaries also increase with the level of education being taught. For example, the salary of an upper secondary teacher with 15 years experience is at least 15% higher than that of a primary school teacher with the same experience (Table D3.1).

...while the teaching load for teachers remains comparatively low.

<p>current expenditure (Table B6.2).</p> <ul style="list-style-type: none"> • In primary and secondary education, OECD countries spend 91% on current expenditure of which 63.5% is for the compensation of teachers, 15.5% for the compensation of other staff, and 19.9% for other current expenditure. At the tertiary level of education, 89.3% is devoted to current expenditure, of which 42.7% is for the compensation of teachers, 23.6% for the compensation of other staff, and 33.8% for other current expenditure (Table B6.2). • 	<ul style="list-style-type: none"> • The net teaching time for Finnish primary school teachers is, at 677 hours per year, the fifth lowest of the 26 OECD countries with comparable data (the OECD average is 803 hours) (Table D4.1). • These relations are similar at the secondary level of education, although differences between the Finland and the OECD average tend to be smaller. For example, net teaching time for upper secondary is 560 hours in Finland, the OECD average is 664 hours. <p><i>In Finland, the share of capital spending in tertiary institutions is well below the OECD average.</i></p> <ul style="list-style-type: none"> • Below the tertiary level, the proportion of spending on capital costs is, at 10.6%, very close to the OECD average level of 9.0%. The range among countries is 2.2% for Belgium to 22.2% for Turkey. • The share of capital spending at the tertiary level is, at 5.8%, considerably below the OECD average of 10.7%, and is lower only in Belgium Estonia, and Mexico. The country range is 0.5% from Estonia to Greece at 33.3% (Table B6.2). <p><i>Schools in Finland have above-average resources for non-staff goods and services.</i></p> <ul style="list-style-type: none"> • With only 66% of current expenditure at the primary and secondary levels devoted to the compensation of staff, schools in Finland have greater capacity to purchase other goods and services than do OECD countries on average, where 80% of current expenditure is devoted to the compensation of staff (Table B6.2). • However, Finland invests more , per student, than the OECD average on core services, ancillary service and R & D (USD 12 505, OECD average USD 11 100).
<p><i>Private sources of funding for education are becoming increasingly important.</i></p> <ul style="list-style-type: none"> • On average, over 90% of primary and secondary education in OECD countries, and nowhere less than 80% (except in Korea and in the partner economy Chile), is paid for publicly. However, in tertiary education the proportion funded privately varies widely, from less than 5% in Denmark, Finland and Greece, to more than 50% in Australia, Japan and the United States and in partner economy Israel, and to above 75% in Korea and in the partner economy Chile. • In all countries for which comparable data are available, for all levels of education combined, public funding increased between 1995 and 2004. However, private spending grew even more in nearly three-quarters of these countries. Nevertheless, in 2004, on average 87% of expenditure, for all levels of education combined, 	<p><i>...and public funding remains the above-average source of educational spending in the Finland but private funding is on the increase.</i></p> <ul style="list-style-type: none"> • Finland's funding was 99.2% public in 2004 and has decreased slightly to 99.5% in 1995 – in both years this was above the OECD average of public funding which was 88.5% and 86.6% in 1995 and 2004 respectively (Table B3.2a). Note that private spending originates both in households and other private entities and can go to private as well as public institutions. • Public spending on tertiary education in the Finland rose by only 26% between 1995 and 2004. Although from a low level, private spending, however, saw a more dramatic increase of 108% during the same period (Table B3.2b). • At the pre-primary level, where the relative proportions of public and private funding range from 100% public in Sweden to 37.9% public and 62.1% private in Korea, the public funding share in Finland was 91.1% in 2004,

<p>was still from public sources.</p> <ul style="list-style-type: none"> • The share of tertiary spending from private sources rose substantially in some countries between 1995 and 2004, but this was not the case at other levels of education. • On average among the 18 OECD countries for which trend data are available, the share of public funding in tertiary institutions declined slightly between 1995 and 2000, as well as every year between 2001 and 2004. However, in general the increase in private investment has not displaced public financing, but rather complemented it. • In tertiary education, households cover the majority of private expenditure in all countries with available data, except Greece, Hungary and Sweden. Private expenditure from other entities than households is still significant, representing 10% or more in Australia, Hungary, Italy, Korea, the Netherlands, Sweden, the United Kingdom and the United States, and the partner economy Israel. 	<p>significantly above the OECD average of 80.0% (Table B3.2a).</p>
<p><i>OECD countries where students are required to pay tuition fees can nevertheless have large access to tertiary education.</i></p> <ul style="list-style-type: none"> • OECD countries where students are required to pay tuition fees and can benefit from particularly large public subsidies do not show lower levels of access to full-length, theory-based bachelor and masters degree university-level programmes, compared to the OECD average. For example, Australia (82%) and New Zealand (79%) have one of the highest entry rates to tertiary-type A education and the Netherlands (59%) and the United States (64%) are above the OECD average. • 	<p><i>Finland and its neighbours continue to not charge tuition fees for higher education.</i></p> <ul style="list-style-type: none"> • In Finland as well as the other Nordic countries (Denmark, Iceland, Norway and Sweden) tertiary education is typically free of any tuition fees (Chart B5.1). At the same time students in Finland, as well as the other Nordic countries, also generally enjoy generous government back scholarships and loans for covering living expenses during their tertiary studies (Chart B5.3) which makes higher education an attractive alternative for young adults. This is also evident in the enrolment rates to tertiary-type A education which is at 73% in Finland, substantially above the OECD average of 54% (table C2.5). These generous terms are however paid back later in the working life as individuals are progressively taxed in accordance with their earnings.

NOTES

- “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.
- “Educational attainment” is defined as the highest grade completed within the most advanced level attended in the educational system of the country where the education was received. Some countries may also find it useful to present data on educational attainment in terms of the highest grade attended.
- “Lower secondary education” is defined as schooling between the ages of 11 and 13. It generally continues the basic programmes of the primary level, although teaching is typically more subject-focused. Lower secondary education may either be “terminal” (i.e. preparing students for entry directly into working life) and/or “preparatory” (i.e. preparing students for upper secondary education). This level usually consists of three years of schooling in OECD countries.
- “Non-formal education” is defined as any 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 2007.

- “Post-secondary non-tertiary education” is defined as programmes straddling the boundary between upper secondary and post-secondary education from an international point of view, even though they might clearly be considered upper secondary or post-secondary programmes in a national context. Although their content may not be significantly more advanced than upper secondary programmes, they serve to broaden the knowledge of participants who have already gained an upper secondary qualification. The students tend to be older than those enrolled at the upper secondary level.
- “Pre-primary education” is defined as the initial stage of organised instruction, designed primarily to introduce very young children to a school-type environment, that is, to provide a bridge between home and a school-based atmosphere. They are centre or school-based, designed to meet the educational and developmental needs of children at least three years of age, and have staff qualified to provide an educational programme for children.
- “Primary education” usually begins at ages five, six or seven and generally lasts six years in OECD countries. Programmes at the primary level generally require no previous formal education, although it is becoming increasingly common for children to have attended a pre-primary programme before entering primary education. The boundary between pre-primary and primary education is typically the beginning of systematic studies characteristic of primary education, i.e. reading, writing and mathematics. It is common, however, for children to begin learning basic literacy and numeracy skills at the pre-primary level.
- “Statutory salaries” refers to teachers’ salaries according to official pay scales. The salaries reported are defined as gross salaries (total sum of money that is paid by the employer for the labour supplied) minus the employer’s contribution to social security and pension (according to existing salary scales). Salaries are “before tax”, i.e. before deductions for income taxes.
- “Tertiary-level education” is defined as higher education (HE). Indicators in Education at a Glance 2007 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. Tertiary programmes are generally divided by type of course: “tertiary-type A” (largely theory-based and designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as medicine, dentistry or architecture) and “tertiary-type B” (typically shorter and focused on practical, technical or occupational skills for direct entry into the labour market). “Graduation rate” is defined as the ratio of tertiary graduates to the population at typical age of graduation.
- “Upper secondary” education corresponds to the final stage of secondary education in most OECD countries. Instruction is often more organised along subject-matter lines. The entrance age to this level is typically 15 or 16 years.