International Education Comparisons

A compendium of published information on educational provision and achievement in 10 countries

NAO
NATIONAL AUDIT OFFICE

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Part 1

Making comparisons

Introduction

1.1 Members of the Committee of Public Accounts have expressed interest in comparative material on education in other countries. This compendium of information has been compiled from published sources by the National Audit Office and is provided for background information. A copy has been placed in the library at the House of Commons.

Scope and structure

1.2 This compendium sets out comparative data on education in the United Kingdom and nine other countries[1], selected as broadly comparable industrialised nations (specifically, the G7 countries plus three others frequently included in comparisons).

1.3 The structure of the report is as follows:

- Part 1: Making comparisons;
- Part 2: Education systems;
- Part 3: Providing education; and
- Part 4: Educational achievements.

1.4 In addition, two appendices set out more detail on compulsory education, typical graduation ages, length of school year and annual teaching hours (Appendix 1) and educational delivery systems (Appendix 2).

Basis of compendium

1.5 This compendium draws exclusively on published information, principally the most recent data sets from the Organisation for Economic Co-operation and Development (OECD)[2]. Other sources of data are the Programme for International Student Assessment (PISA)(www.pisa.oecd.org), the Third International Mathematics and Science Study (TIMSS) (timss.bc.edu) and the International Adult Literacy Survey 1994-1998, published by OECD.

1.6 Analysis of the data has been confined to setting out comparisons in tabular and graphical form to show relative positions at certain dates, together with brief textual explanations and highlighting of key differences. We do not examine the causes of differences between countries or draw conclusions on policy issues such as which type of educational system is best, because as we explain below there are limitations to the data available and the nature of social systems impacts on the measured indicators.

Interpreting the information

Comparability and completeness of the data

1.7 The OECD data used extensively in this report are collected by countries primarily for their own purposes and methods, so timing and definitions vary. No information is available on the validation procedures in place in each country. The compendium notes when a comparison is likely to be particularly prone to problems, but inevitably a margin of uncertainty remains within the data in all cases.

1.8 Published data are more complete on some issues of interest than others. This means that only a partial picture can be drawn for some topics. For some issues, such as ethnicity, data are not available at all on an international basis. Data are presented for the United Kingdom, Britain or England according to availability.

1 *Australia, Canada, France, Germany, Italy, Japan, New Zealand, Sweden, United States.*
2 *Education at a Glance: OECD Indicators 2001 and Education at a Glance: OECD Indicators 2002.*

The nature of the education systems impacts on measured indicators

1.9 Differences between countries, as measured by any particular indicator, reflect the way the education systems are organised and demographic factors. They do not necessarily imply that education received by students is better or worse. For example, a country where younger people make up a smaller proportion of the population than average might be expected to have lower expenditure on education. We highlight such observations where applicable.

Definitions of the levels of education

1.10 The levels of education used in this compendium are defined with reference to the *International Standard Classification of Education* (ISCED) of 1997. These levels are based on the nature of the education rather than the age of those educated, but there is a typical age group associated with each level.

- **Early childhood education** - covers all forms of organised and sustained centre-based activities before formal primary education. In the United Kingdom this covers nursery schools and classes, playgroups, day nurseries and reception classes.
- **Primary education** - usually begins at age 5, 6, or 7 (see Appendix 1) and lasts 4 to 6 years. Programmes at the primary level generally require no previous formal education. In the United Kingdom this covers primary school and also includes adult basic skills (literacy and numeracy).
- **Secondary education** - comprises **lower** and **upper** secondary education. Lower secondary usually consists of 2 to 6 years of schooling and continues the basic programmes of primary education but usually in a more subject-oriented manner. Upper secondary usually consists of 2 to 5 years of schooling and may prepare students for tertiary education or for entry directly into working life. The division into lower and upper levels does not match the examination structure in the United Kingdom. The Department for Education and Skills, and the devolved administrations, have an agreement with the OECD on how to define it for statistical purposes. In the United Kingdom, lower secondary education covers secondary school up to the age of 14 years and employer supported on-the-job and off-the-job training. Upper secondary education covers GCSEs and GCE A-levels, GNVQ's, NVQ levels 1-3, traditional and modern apprenticeships, and work-based training for young people and adults.
- **Post-secondary non-tertiary education** - straddles the boundary between upper secondary and tertiary education. Students tend to be older than those enrolled at the upper secondary level. In the United Kingdom this covers only higher education access courses.
- **Tertiary education** - comprises tertiary-type A and B programmes. Tertiary-type A programmes are largely theory-based and are designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as dentistry, medicine or architecture. Tertiary-type B programmes are typically shorter and focus on practical, technical or occupational skills for direct entry into the labour market. In the United Kingdom tertiary-type A education covers bachelors degrees (2-4 years and Open University), masters degrees, post-graduate diplomas and certificates, professional post-graduate on-the-job training, and doctorates. Tertiary-type B education covers nursing education, Higher National Diplomas, Higher National Certificates, and activities leading to NVQ Level 4 or 5.

Definition of educational institutions

1.11 An institution is classified as **public** if it is controlled and managed directly by a public education authority or agency; or by a government agency directly or by a governing body (council, committee, etc), most of whose members are either appointed by a public authority or elected by public franchise.

1.12 An institution is classified as **private** if it is controlled or managed by a non-governmental organisation (e.g. Church, trade union, or a business enterprise), or if its Governing Board consists mostly of members not selected by public agency. A distinction is made between **government-dependent** and **independent** private institutions on the basis of the degree of a private institution's dependence on funding from government sources: government-dependent private institutions receive more than 50 per cent of their core funding from governmental agencies.

Part 2

Education systems

2.1 This part provides information on the context in which educational systems operate and the financial resources which countries invest in education. A summary of each country's education delivery system is given at Appendix 2.

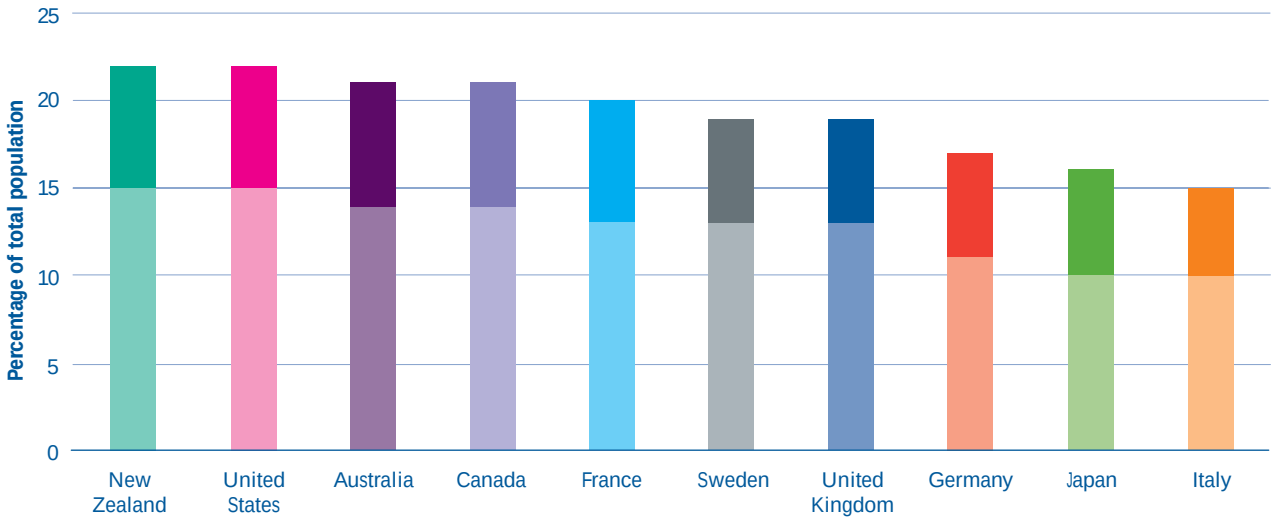
Context of education

Relative size of the school-age population

2.2 The size of the school-age population in a given country shapes the potential demand for initial education and training. The more young people, the greater the potential demand for educational services. **Figure 1** illustrates the proportion of the population in the age band roughly corresponding to the typical ages of students in primary and secondary education. The population of 5 to 19-year-olds varies between 15 and 22 per cent of the total population. In the United Kingdom it represents 19 per cent. Over the next decade, most countries expect a decline in their school-age populations. The United Kingdom's 5-14 year old population is expected to decrease by 11 per cent.

1 Relative size of the youth population (1999)

Size of the population aged 5-19 as a percentage of the total population.



The lighter tinted bars represent size of population aged 5 to 14. The darker tinted bars represent size of population ages 14 to 19.

Source: Table A1.1, Education at a Glance: OECD Indicators 2001, OECD

Educational attainment of the adult population

2.3 A well-educated and well-trained population is important for the social and economic well-being of countries and individuals. Education plays a key role in providing individuals with the knowledge, skills and competencies to participate effectively in society. The level of educational attainment of the population is a commonly used proxy for stock of "human capital", that is, the skills available in the population and the labour force.

2.4 **Figure 2** shows the educational attainment of the population, reflecting the output of the education system over the last 40 years. It shows that the percentage of the population that has completed at least upper secondary education varies from 43 per cent in Italy to 88 per cent in the United States, with a ten country average of 72 per cent. In the United Kingdom this figure is 63 per cent.

2.5 Figure 2 also shows that the percentage of the population that have completed tertiary-type A education varies from 10 per cent in Italy to 28 per cent in the United States, with a ten country average of 17 per cent. Between 1991 and 2001, the percentage of the population in the United Kingdom that have completed tertiary-type A education has increased from 10 to 18 per cent. Only Australia shows a larger increase, from 10 to 19 per cent.

2.6 For the purposes of the OECD indicators, attainment of upper secondary education in the United Kingdom is achieved by attaining five or more A* to C grades in GCSEs or by completing programmes that satisfy international criterion (e.g. GNVQ and GCE advanced level). The United Kingdom Government has set performance targets to improve the percentage of pupils attaining GCSEs: to increase the proportion achieving five or more GCSEs at grades A* to C by 4 per cent between 2002 and 2004; and to increase the proportion of 16-year-olds achieving five or more GCSEs at grades A* to G from 89 per cent in 2000 to 92 per cent by 2004.

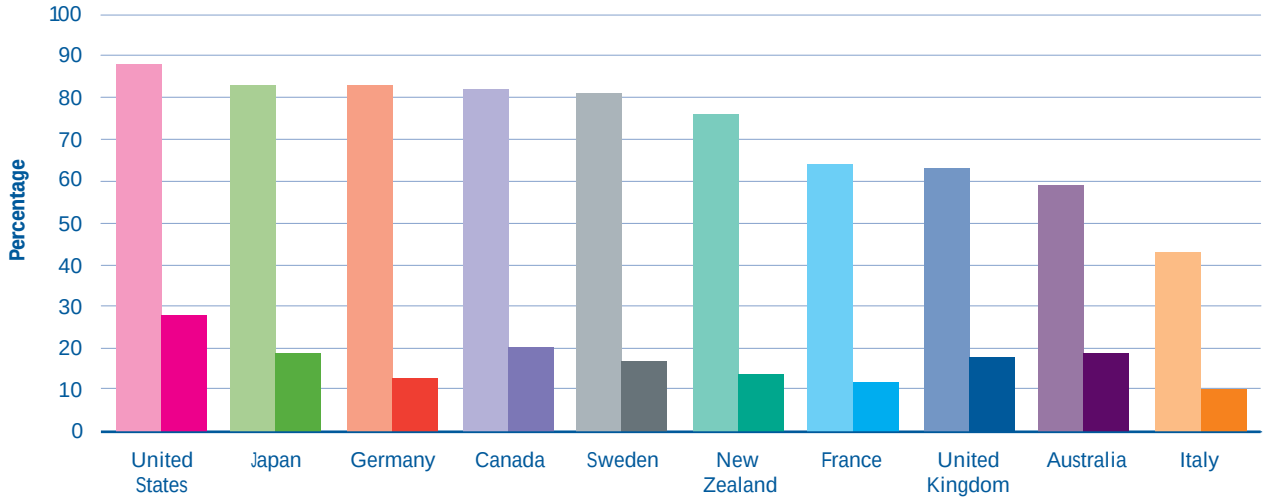
Financial resources invested in education

2.7 The proportion of total financial resources devoted to education is one of the key choices made in each country: it is an aggregate choice made by governments, enterprises and individual students and their families. Investment in education can help to foster economic growth, enhance productivity, contribute to personal and social development, and reduce social inequality[3].

2.8 Education below the tertiary level is dominated by spending on salaries. Other services, particularly those related to research and development, can account for a significant proportion of tertiary education spending.

2 Educational attainment of the population (2001)

Percentage of the population 25 to 64 years of age, who have attained at least upper secondary education and who have attained tertiary-type A education.



The lighter tinted bars represent attainment of least upper secondary education.
The darker tinted bars represent attainment of tertiary-type A education.

NOTE

Countries are ranked in descending order of the percentage of the population who have completed at least upper secondary education.

Source: Tables A1.2 and A2.3, Education at a Glance: OECD Indicators 2002, OECD

3 *Education at a Glance: OECD Indicators 2001, OECD.*

Education expenditure as a proportion of Gross Domestic Product

2.9 A widely used means of comparison is expenditure as a proportion of Gross Domestic Product (GDP). **Figure 3** shows that public expenditure on education as a proportion of GDP varied from 3.5 to 7.7 per cent, with a ten country average of 5.3 per cent. Total public education spending in the United Kingdom in 1999 was 4.7 per cent. In 1995 this figure was 5.2 per cent. Over this period only Canada shows a greater decrease in total public education spending than the United Kingdom.

2.10 Cost sharing between participants in the education system and society as a whole is an issue under discussion in many countries. **Figure 4** shows that private expenditure varies from 25.0 per cent of total education expenditure in the United States to 3.0 per cent in Sweden. In the United Kingdom, private sources account for 16.3 per cent, which equates to an additional 0.9 per cent of GDP on top of public expenditure. In most countries, private sector expenditure comprises mainly household expenditure on tuition and other fees in tertiary education, while in Germany nearly all private expenditure is accounted for by contributions from the business sector to the dual system of apprenticeship at the upper secondary level.

Educational expenditure per student

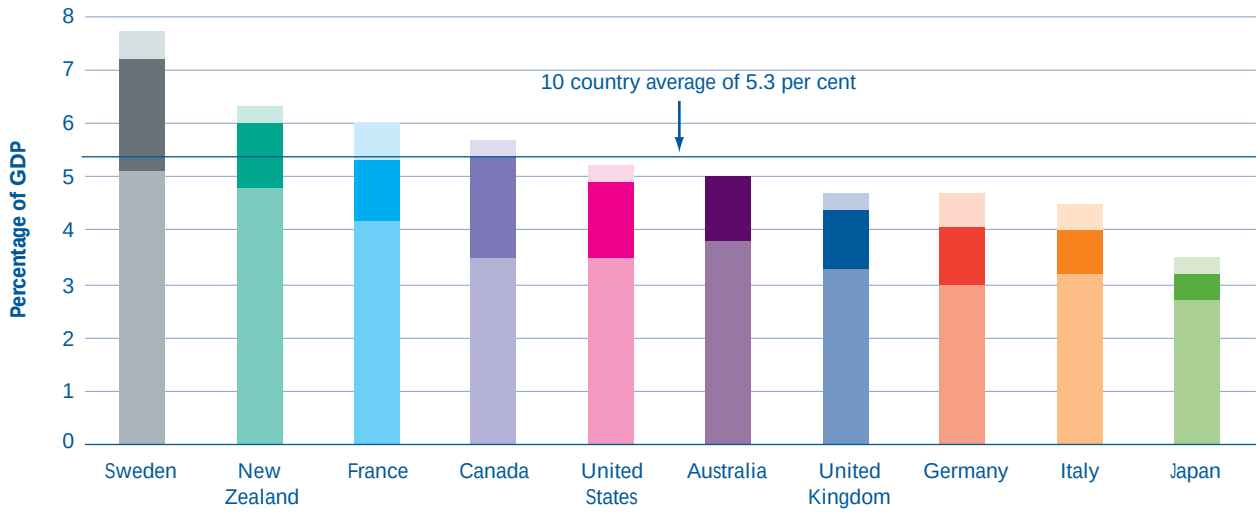
2.11 Educational expenditure per student is an alternative way of measuring resources devoted to education. International comparisons are based on conversions using purchasing power parity (PPP) exchange rates, which are the amounts of national currencies that will buy the same basket of goods and services in a given country as that bought by the US dollar in the United States.

2.12 **Figure 5** shows that, in 1999, the United Kingdom had the lowest expenditure per student at primary and secondary levels. Between 1988 and 1999 expenditure per student increased in all ten countries, and on average doubled. For the United Kingdom, over this period it increased by 70 per cent at primary level and by 100 per cent at secondary level. These figures are not inflation adjusted.

2.13 All countries spend less per student at primary level than secondary level. However the difference varies from 3 per cent less in Sweden to 42 per cent less in France and Germany, with the United Kingdom at 35 per cent less. Data for other levels are incomplete. Among the eight countries where figures are available, the United Kingdom has the highest pre-primary expenditure per student, whilst tertiary expenditure per student is average.

3 Total public expenditure as a percentage of GDP (1999)

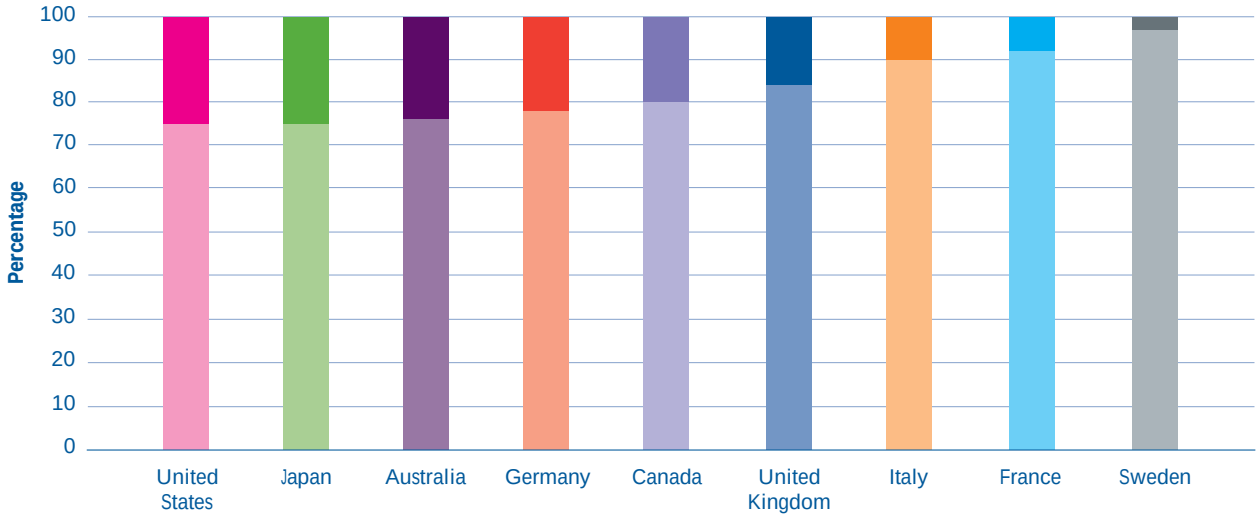
Direct public expenditure on educational institutions plus public subsidies to the private sector (including subsidies for living costs and other private entities) as a percentage of GDP, by level of education.



The lighter tinted bars represent early childhood and miscellaneous education.
The middle tinted bars represent primary and secondary education.
The darker tinted bars represent tertiary education.

Source: Table B3.1, Education at a Glance: OECD Indicators 2002, OECD

4 Relative proportions of public and private expenditure on educational institutions for all levels of education (1999)



The darker tinted bars represent private sources. The lighter tinted bars represent public sources.

NOTE

Private spending includes all direct expenditure on educational institutions, whether partially covered by public subsidies or not.

Source: Table B4.1, Education at a Glance: OECD Indicators 2002, OECD

2.14 Variations in expenditure per student may reflect, for example, differing ratios of students to teaching staff (see Figure 14 on page 14) and differences in relative salary levels (see Figure 15 on page 15).

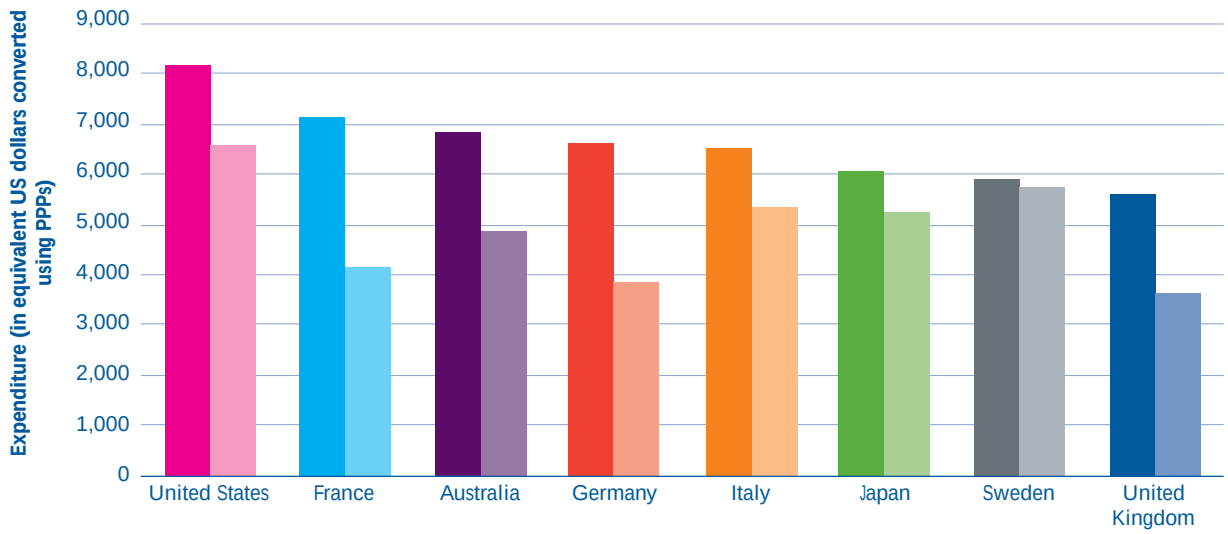
Education expenditure on subsidies

2.15 Through subsidies to students and their families, governments can encourage participation in education, particularly among students from low-income families, by covering part of the cost of education and related expenses. Public subsides come in many forms: as means-based subsidies, as family allowances for all students, as tax allowances for students or their parents, or as other household transfers.

2.16 **Figure 6** shows that the percentage of public educational expenditure spent on supporting students, households and other private entities at the tertiary level varies from 8 per cent in France to over 36 per cent in the United Kingdom, with a nine country average of 22 per cent. Figures presented are for 1999, when the United Kingdom was in transition from grants to loans as the main financial support. Other countries are also in transition but may be at different stages in this process.

5 Expenditure per student (1999)

Annual expenditure per student in equivalent US dollars, converted using purchasing power parity exchange rates (PPPs - the amounts of national currencies that will buy the same basket of goods and services in a given country as that bought by the US dollar in the United States), on public and private institutions by level of education, based on full time equivalents.



The darker tinted bars represent secondary education expenditure. The lighter tinted bars represent primary education expenditure.

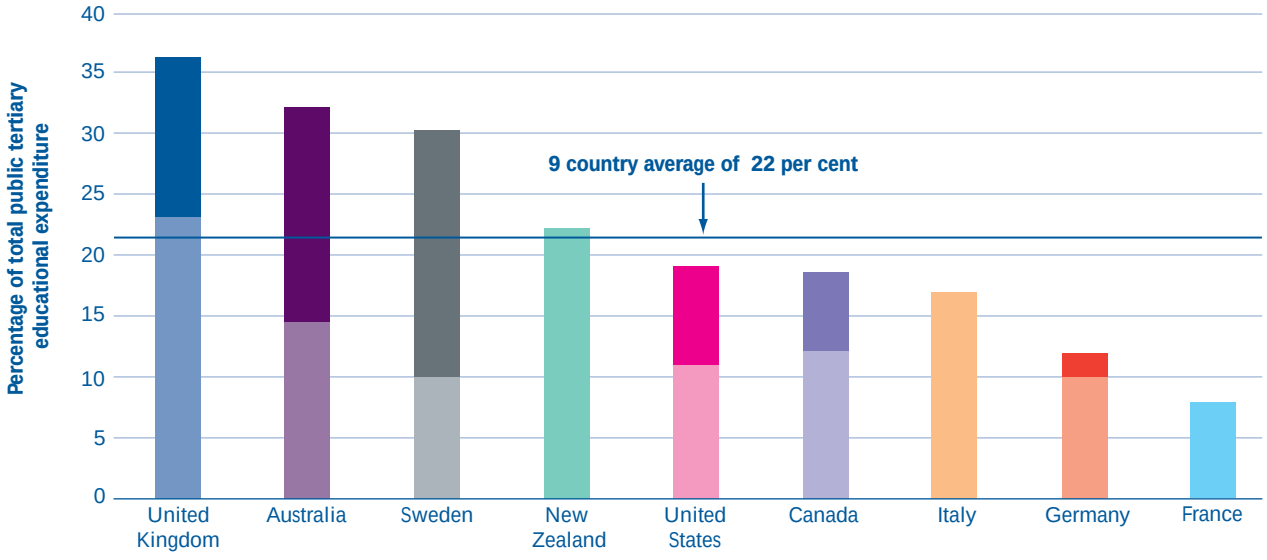
NOTE

Figures for Italy and the United Kingdom do not include private institutions.

Source: Table B1.1, Education at a Glance: OECD Indicators 2002, OECD

6 Financial aid to students at tertiary level (1999)

Direct public expenditure on educational institutions plus public subsidies to the private sector (including subsidies for living costs and other private entities) as a percentage of GDP, by level of education.



The lighter tinted bars represent scholarships / other grants to households. The darker tinted bars represent student loans.

NOTE

Expenditure on student loans is reported on a gross basis, that is, without subtracting or netting out repayments or interest payments from the borrowers (students or households).

Source: Table B5.2, Education at a Glance: OECD Indicators 2002, OECD

Part 3

Provision of education

3.1 This part provides information on participation in education. It also provides information on the learning environment and the various ways in which school systems are organised in terms of teachers and teaching.

Access to education

3.2 A well educated population has become a defining characteristic of modern society. Information on the expected years in education and enrolment rates provides a picture of the structure of different education systems as well as of access to opportunities in those systems.

Average years in education

3.3 One way of looking at participation in education is to estimate the number of years of full-time and part-time education in which a five-year-old child can expect to enrol over his or her lifetime, given current enrolment rates. This is estimated by adding the net enrolment percentages for each single year of age from five onwards. Net enrolment rates are calculated by dividing the number of students of a particular age group enrolled in all levels of education by the number of people in the population in that age group. Caution is required when data on average years in education are compared. Neither the length of the school year nor the quality of education is necessarily the same in each country.

3 4 **Figure 7** shows that the expected years in education vary between 15.8 and 20.8. People in the United Kingdom spend an average of 18.9 years in education. Most of the variation between countries comes from differences in participation rates in upper secondary education, which includes adults in work-based training at levels equivalent to secondary education. Over the last decade, most countries have shown an increase in the expected years in education. In the United Kingdom, the increase was 3.5 years. The measure of average years in education is based on head counts and does not distinguish between full-time and part-time participation, so countries with larger proportions of part-time enrolments have relatively high values for average years in education. In Australia, Sweden and the United Kingdom, participation in part-time education accounts for four or more years of expected years in education. The United Kingdom has the lowest expected number of years in full-time education.

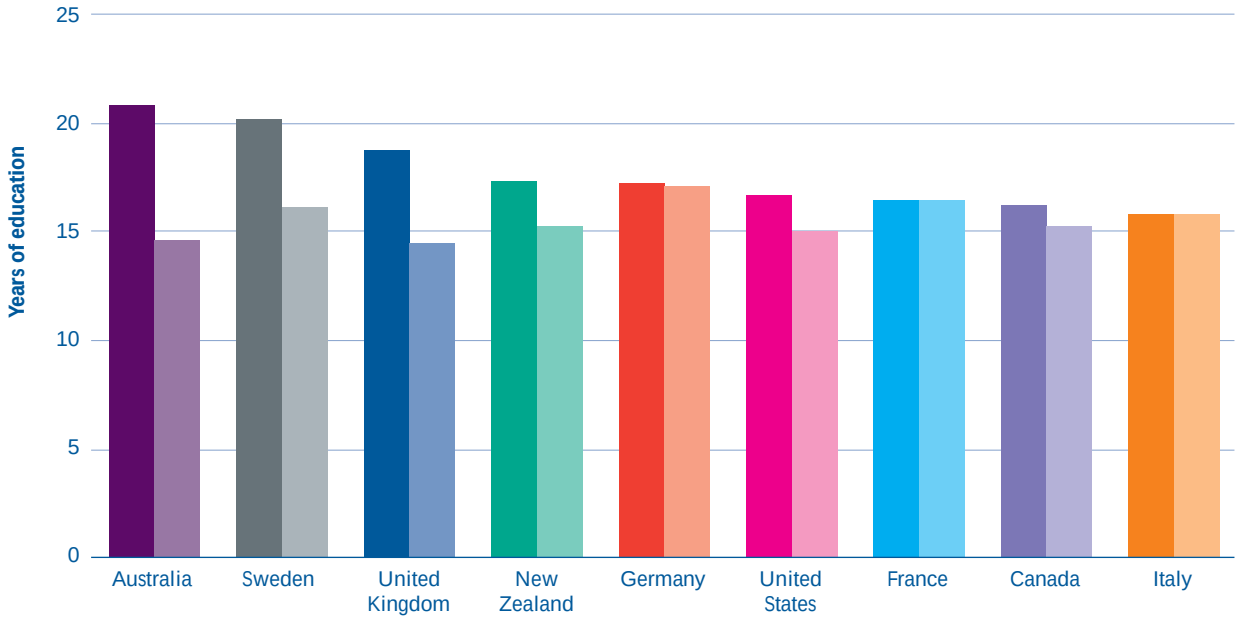
3 5 The percentage of the population still in education at 17 varies from 73 to 93 per cent **(Figure 8)**, with a nine country average of 82 per cent. Most students of this age are in secondary education. For example, 71 per cent of the population in the United Kingdom are in secondary education and 2 per cent are in tertiary education. Over the period 1992 to 2000, all countries show an increase in the percentage of the population still in education at 17, apart from Italy where there are no data available for 1992. The United Kingdom displays the largest increase from 57 to 73 per cent.

3.6 By the age of 20, the percentage of the population still in education has dropped significantly and varies from 33 to 55 per cent, with a nine country average of 46 per cent (Figure 8). At this age, most students in most countries are in tertiary education, but this depends on the typical age of graduation from upper secondary education (see Appendix 1). Over the period 1992 to 2000, all countries show an increase in the percentage of the population still in education at 20, apart from Canada, which shows a decrease, and Italy, where there are no data available for 1992. In the United Kingdom, the rise is from 20 to 46 per cent, and only Australia and Sweden show larger increases.

3.7 Although most people between the ages of 15 and 19 are in education, there is a group of young people who are no longer in education but not at work. Some are officially unemployed if they are actively seeking and available for work, while those that are not doing so for some reason are considered not to be in the labour force. The size of this group varies from about 3 per cent in France to over 11 per cent in Italy **(Figure 9)**. There is no consistent gender pattern: in four countries the percentage of males is higher and in four countries the percentage of females is higher. In the United Kingdom, the gender difference is small.

7 Expected years in education (2000)

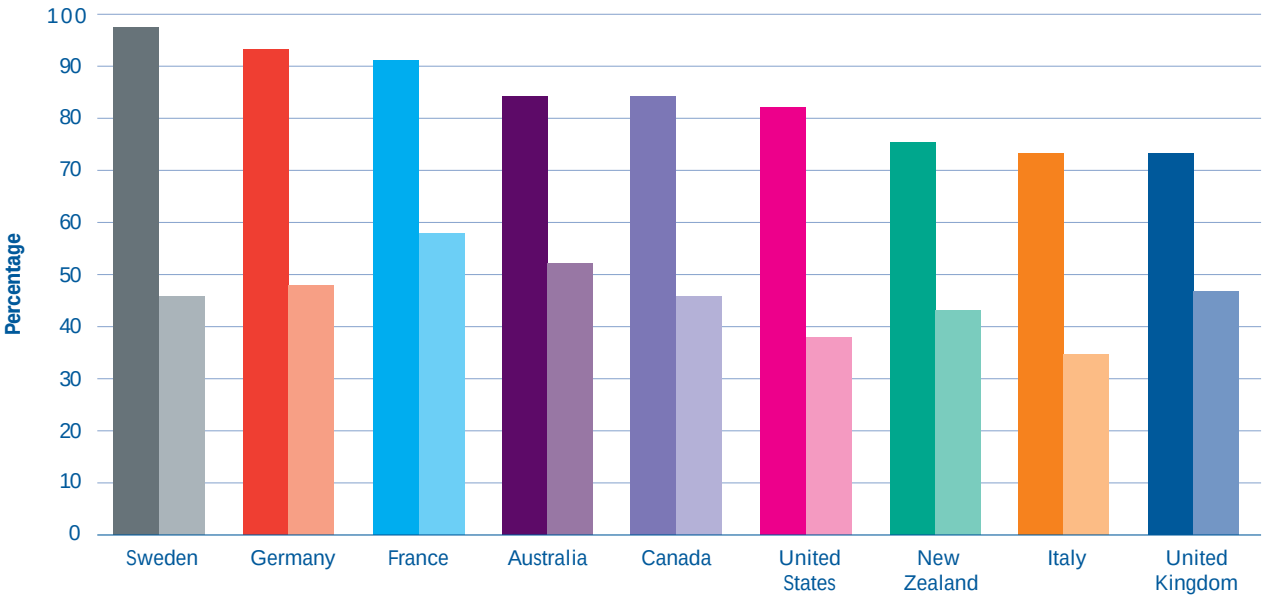
Expected years of education under current conditions in public and private institutions, excluding education for children under five years of age, by level of education. It includes education for adults.



The darker tinted bars represent expected years of education.
The lighter tinted bars represent expected years of education excluding part-time education.

Source: Table C1.1, Education at a Glance: OECD Indicators 2002, OECD

8 Participation rates at ages 17 and 20 (2000)



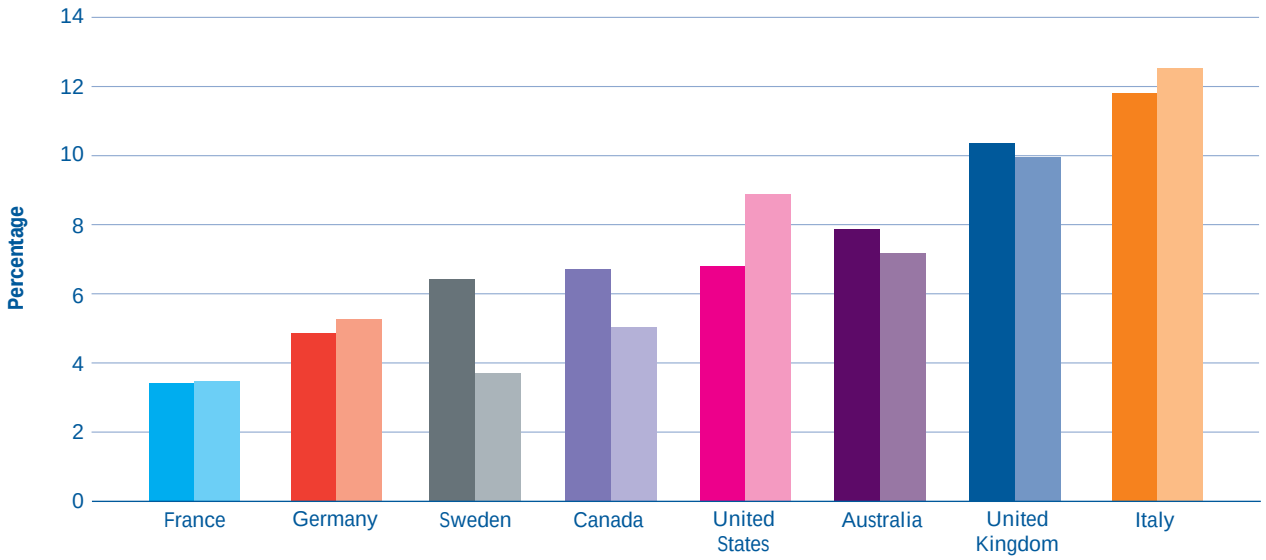
The darker tinted bars represent age 17. The lighter tinted bars represent age 20.

NOTE

Canada year of reference was 1999. Participation rates are calculated by dividing the number of students in the relevant age group participating in all levels of education by the total population of that age.

Source: OECD Database

9 Percentage of 15 to 19-year-olds who are not in education and who are unemployed or not in the labour force (2001)



The lighter tinted bars represent females. The darker tinted bars represent males.

Source: Table A12.1, Education at a Glance: OECD Indicators 2002, OECD

3.8 In 1998 the United Kingdom Government introduced the New Deal for Young People, which aims to help long-term unemployed young people aged 18 to 24 find jobs. New Deal for Young People achieved its target of placing 250,000 young people into work in September 2000, and by October 2001 had helped 339,000 into jobs[4]. The Government also introduced the Connexions Service, in 2001, whose key objective is to reduce the proportion of young people aged 16 to 19 not in employment, education and training by 10 per cent, from November 2002 to November 2004. In August 2002, this proportion was 10.4 per cent.

Participation in tertiary education

3.9 High tertiary participation rates help to ensure the development and maintenance of a highly educated population and labour force. Tertiary education is associated with better access to employment and higher earnings. Across all OECD countries, 4 out of 10 people will enter tertiary-type A education during the course of their lives, assuming current entry rates continue in the future. For the countries we examined, where data is available, the average is higher at 48 per cent. The participation rate in the United Kingdom is 46 per cent **(Figure 10)**. Over the period 1991 to 2000, all countries except Germany show an increase in participation rate for tertiary-type A education. In the United Kingdom, it increased from 20 to 46 per cent.

3.10 The participation rates in Figure 10 cannot be compared directly to the Initial Entry Rate (IER), which the Department for Education and Skills uses to measure progress against the target for increasing participation in England to 50 per cent by 2010. The IER is lower than the United Kingdom participation rate because it covers England only, it excludes overseas students and short courses and its measurement process contains mechanisms to prevent double counting. The Department for Education and Skills reported the IER was 41.5 per cent in 2001-02[5].

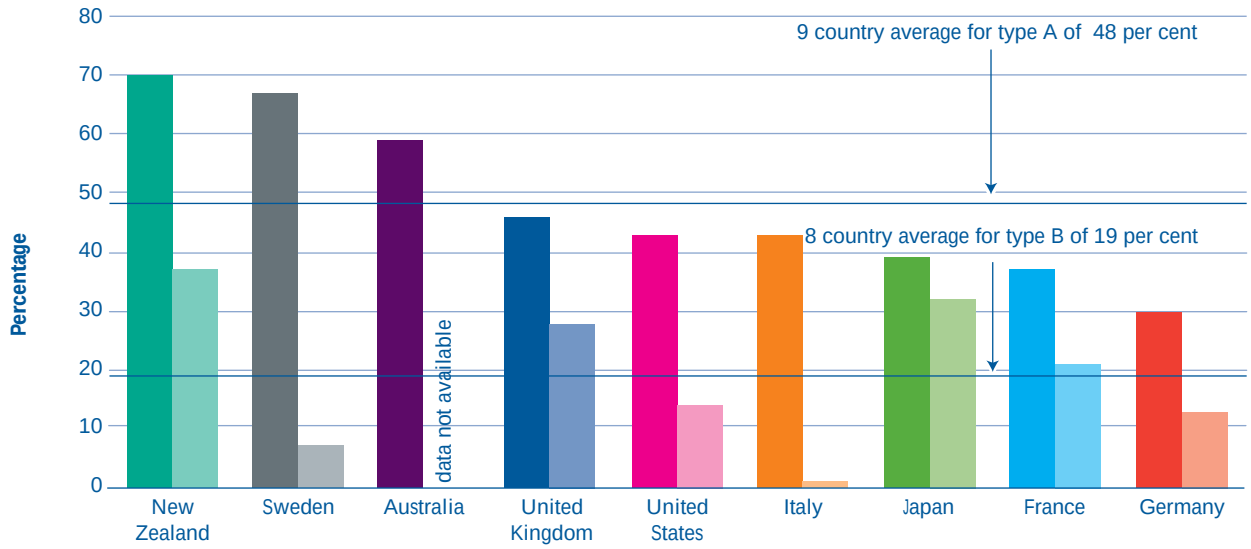
3.11 One way for students to expand their knowledge of other cultures and societies is to study in tertiary educational institutions in countries other than their own. The extent of this student mobility is increasing[6]. A benefit of the intake of foreign students is the tuition fee revenue that is generated, the magnitude of which is increased when host countries adopt a full-fee tuition policy for overseas students.

3.12 **Figure 11** shows that the percentage of foreign students enrolled in tertiary education varies from 1.4 per cent in Italy to 12.5 per cent in Australia, and for the United Kingdom it is 11.0 per cent. The United States receives the most foreign students (in absolute terms) with 28 per cent of the total of foreign student within OECD countries, followed by the United Kingdom with 14 per cent.

4 *The new deal for young people (HC639 2001-02).*
5 *Improving student achievement and widening participation in higher education in England, 58th report of the Committee of Public Accounts (HC588 2001-02).*
6 *Education at a Glance: OECD Indicators 2002, OECD.*

10 Participation rates in tertiary education (2000)

Lifetime likelihood of entering tertiary education.



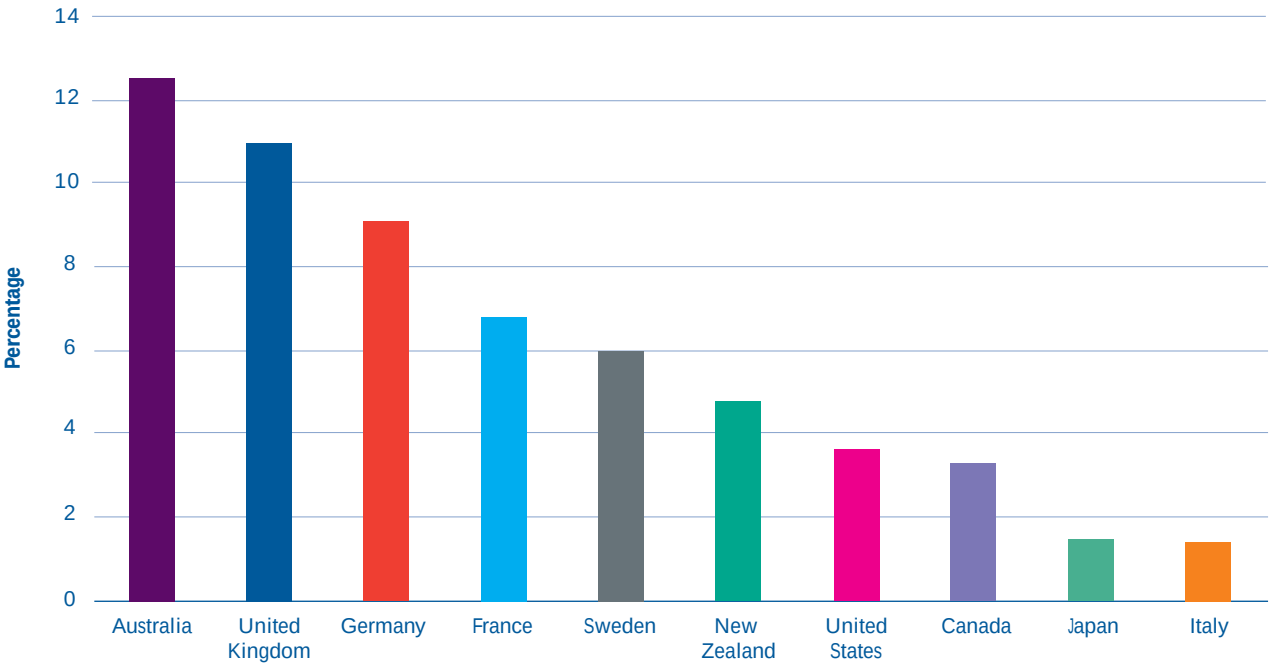
The darker tinted bars represent tertiary-type A. The lighter tinted bars represent tertiary-type B.

NOTE

Rates for type A and B programmes cannot be added because of double counting.
Graduation rates for most countries are calculated in a way that allows for the age profile of the population. The calculations for Japanese type A and B and German type B programmes make no allowance for age profile.

Source: Table C2.1, Education at a Glance: OECD Indicators 2002, OECD

11 Percentage of tertiary students enrolled who are not citizens of the country of study (2000)

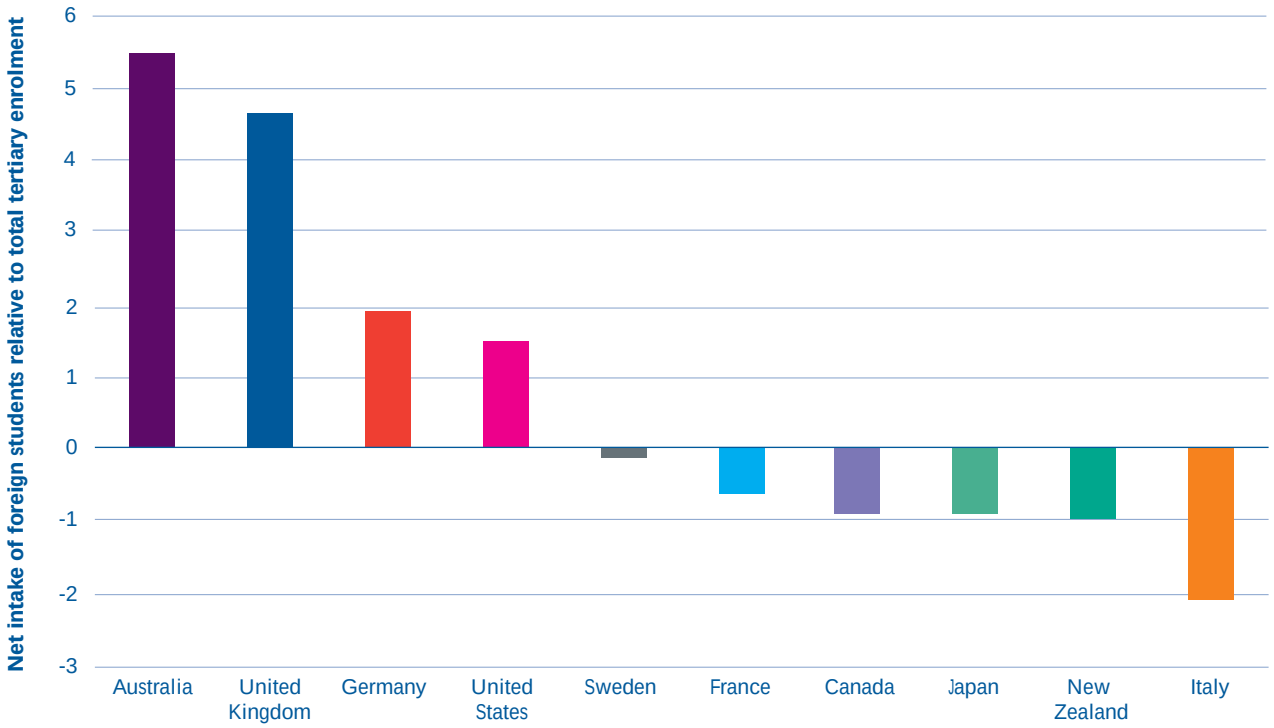


NOTE

This indicator defines a foreign student as someone who is not a citizen of the country of study. In most countries it has not been possible to distinguish between those who are residents in the country but who have immigrated and are not yet naturalised, and those who came to the country expressly to pursue their education. This leads to a potential overestimation of the number of foreign students in countries with comparatively stringent naturalisation policies.

Source: Table C3.1, Education at a Glance: OECD Indicators 2002, OECD

12 Exchange of students in tertiary education (2000)



NOTE

The balance of student flows takes into account only students to and from reporting OECD and non-OECD countries. Figures for Australia represent tertiary-type A and advanced research programmes only.

Source: Table C3.1, Education at a Glance: OECD Indicators 2002, OECD

3.13 The net balance of international student exchange **(Figure 12)** shows that some countries, such as Australia and the United Kingdom, have a net intake whereas others, such as Italy and New Zealand have a net outflow. Student mobility patterns can be attributed to a variety of push-pull factors, such as language barriers, the academic reputation of particular institutions or programmes, the limitations of higher education provision in the home country, university admission policies, financial incentives and tuition costs.

Participation in continuing education and training among the adult population

3.14 As a skilled labour force is a prerequisite for success in today's economy, the education and training of current workers is likely to be the most effective means of maintaining and upgrading the skills of the current workforce. In the United Kingdom, 52 per cent of employees and 24 per cent of unemployed people have participated in some job-related continuing education and training within a 12-month period **(Figure 13)**.

3.15 In all of the eight countries displayed in Figure 13, individuals who have completed tertiary education are more likely to participate in continuing education than those who have not completed lower secondary education. This varies from being three times more likely in Sweden, New Zealand and the United Kingdom to six times more likely in Italy.

3.16 In most countries the participation rate of women in job-related continuing education and training is less than the participation rate of men. Germany has the largest difference, with 11 per cent less women participating than men. In the United Kingdom this figure is 6 per cent. Women have a higher participation rate only in Sweden and Australia.

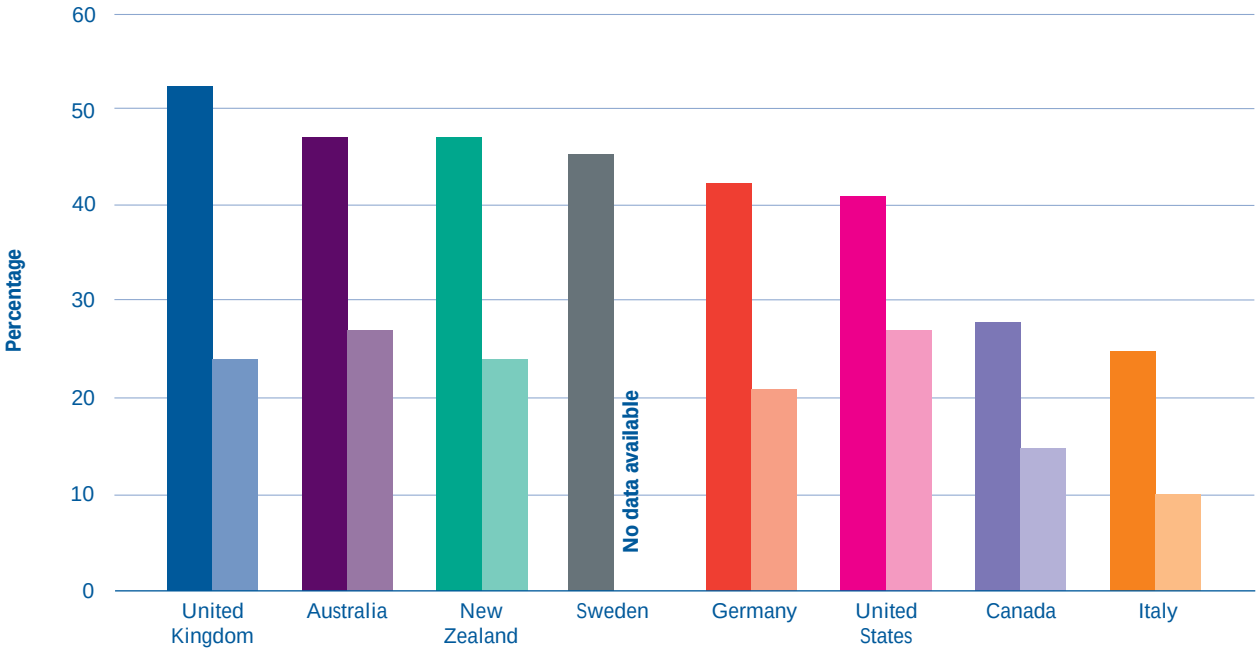
Ratio of students to teaching staff

3.17 The ratio of students to teaching staff is an indicator of the resources that countries devote to education. It is often used as a proxy for quality, on the assumption that a smaller ratio of students to teaching staff means better access by students to teaching resources.

3 18 **Figure 14** shows the United Kingdom has the highest number of students to teachers of the ten comparator countries for primary (21.2) and is average for secondary (14.8). Most countries, including the United Kingdom, have a higher ratio of students to

13 Participation rate of the population 25 to 64 years of age in job-related continuing education and training

Participation rate per participant, by employment status.

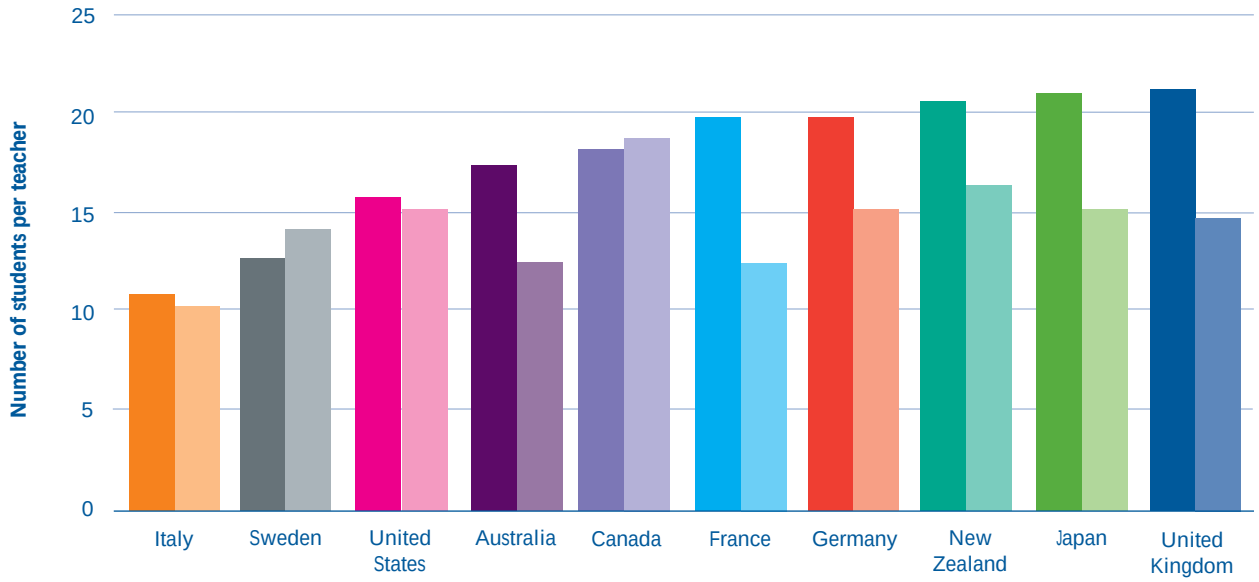


The darker tinted bars represent employed people. The lighter tinted bars represent unemployed people.

Source: Table C6.1a, Education at a Glance: OECD Indicators 2001, OECD

14 Ratio of students to teachers (2000)

Ratios for public and private institutions, by level of education, based on full time equivalents.



The darker tinted bars represent primary education. The lighter tinted bars represent secondary education.

NOTE

The figure for secondary education in the Australia represents general programmes at lower and upper secondary education only.
The figure for secondary education in the United Kingdom does not include upper secondary vocational (further education).

Source: Table D2.2, Education at a Glance: OECD Indicators 2002, OECD

teachers in primary than secondary education, but for Canada and Sweden this is reversed. Data for pre-primary and tertiary levels are incomplete. The United Kingdom's ratios for pre-primary (21.0) and tertiary (18.5) are higher than average.

3.19 Between 1988 and 2000 the ratio of students to teachers at primary level increased in five countries and decreased in four countries. Data were not available for Germany. In the United Kingdom the ratio decreased from 21.4 to 21.2. Over this period six countries showed a decrease in the ratio of student to teachers at the secondary level, including the United Kingdom (16.5 to 14.8), and three showed an increase.

3.20 Data on the average class size are incomplete, but generally mirror the ratio of students to teachers. In 2000, the average class sizes for primary and lower secondary education in the United Kingdom were 26.8 and 24.7 respectively. This compared to six country averages of 24.0 and 25.5. The number of students per class tends to increase between primary and secondary, but in the United Kingdom and Australia there is a decrease. The United Kingdom Government introduced legislation in 2001 to limit the size of infant classes for five-, six- and seven-year-olds to 30.

Teachers

3.21 Ensuring that there will be enough skilled teachers to educate all children is an important policy concern for all OECD countries. Key determinants of the supply of qualified teachers are their salaries and working conditions, including starting salaries and pay scales, and the costs of becoming teachers as compared with salaries and costs in other occupations[7].

3.22 **Figure 15** shows the variation in initial salaries and salary scales for upper secondary teachers. England and Scotland show similar teacher salary scales, with starting salaries of around $21,500 (US$ equivalent) and maximum salaries of around $35,000. Factors such as teaching time and teachers' workload can vary considerably between countries, and therefore need to be taken into account when statutory salaries for teachers are compared. Additionally, several countries run bonus schemes that relate to taking on extra responsibilities or outstanding performance.

15 Teachers salaries in upper secondary general education (2000)

Annual statutory teacher's salaries in public institutions in upper secondary education, in equivalent US dollars converting using power parity exchange rates (PPPs - the amounts of national currencies that will buy the same basket of goods and services in a given country as that bought by the US dollar in the United States).

Bars represent range of salary. Circles represent salary after 15 years.

Source: Table D6.1, Education at a Glance: OECD Indicators 2002, OECD

7 *Education at a Glance: OECD Indicators 2001,OECD.*

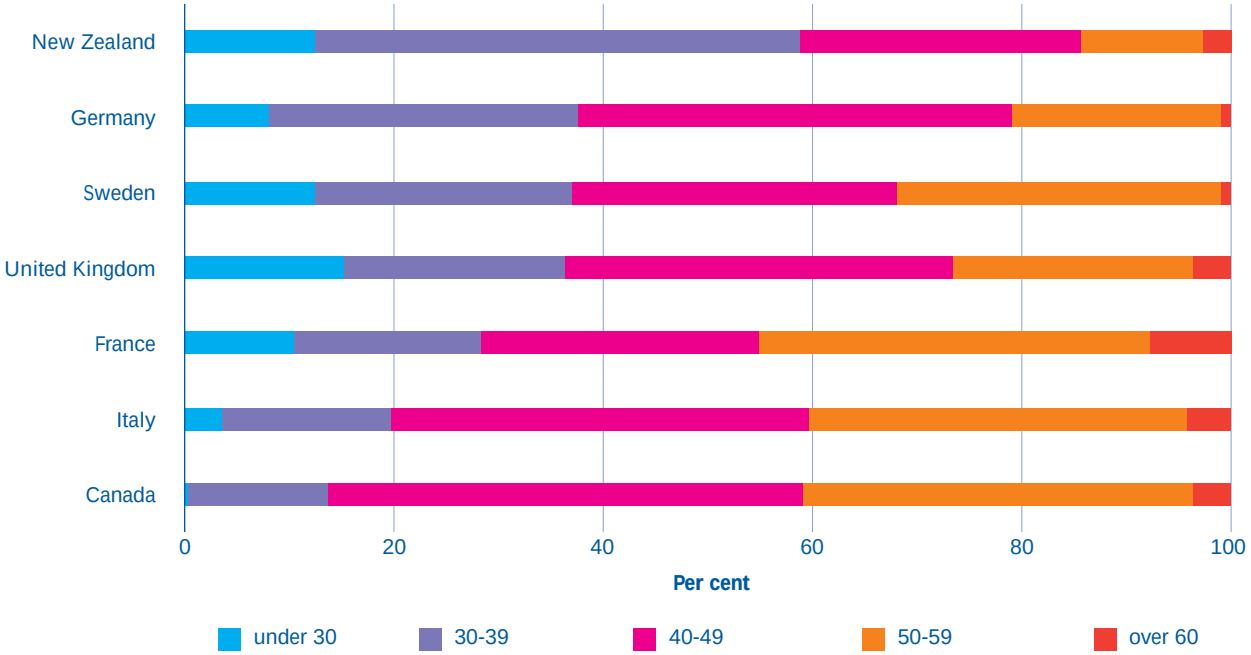
3 23 For example, England and Wales have a main six point salary scale (one point per year of satisfactory experience gained), and an additional five point upper salary scale that is based on performance. New teachers normally start at the bottom of the scale (£18,105 - effective from 1 April 2003), but schools have discretion to start them higher up to recognise other relevant experience outside of teaching in the state sector. Schools also have discretion to award an additional point to those who have shown excellent performance over the previous year and are below the top of the main scale. Once a teacher reaches the top of the main scale they may apply to move to the upper pay scale and are assessed against national standards. Movement through this upper salary scale is based on performance, normally after at least two years at each stage and by one point at a time. Teachers in and around London receive an allowance. There are also several discretionary allowances, which include management, special needs and recruitment and retention allowances. Alternative career routes might be to become an Advanced Skills Teacher (classroom teachers who support other teachers) or to join the leadership group (head teachers, deputy heads, etc).

3.24 Teachers' demographics have a substantial impact both on the renewal of the teaching force and on the financing of education. Many OECD countries face the problem of an ageing workforce. The majority of primary and secondary teachers are aged 40 or over **(see Figure 16).** Countries face both short-term and long-term issues. France, for example, faces a short-term issue because 45 per cent of teachers in secondary education are aged 50 or over (Figure 16). In the United Kingdom, 26 per cent of secondary school teachers and 22 per cent of primary school teachers are aged 50 or over.

3.25 Canada faces more of a long-term problem because 85 per cent of teachers in secondary education are aged 40 or over. In the United Kingdom 64 per cent of secondary school teachers and 59 per cent of primary school teachers are aged 40 or over. Of the seven comparitor countries displayed in Figure 16, the United Kingdom has the highest percentage of teachers under 30 at both secondary and primary levels (15 and 21 per cent respectively).

16 Age distribution of teachers (1999)

Distribution of secondary teachers in public and private institutions, by age group.



NOTE

Countries are ranked in ascending order of the percentage of teachers aged 40 or over. Figures for the United Kingdom represent only general programmes at upper secondary education. No data are available for upper secondary vocational (further education) teachers.

Source: Table D2.1, Education at a Glance: OECD Indicators 2001, OECD

8 *Departmental Report 2002, Department for Education and Skills and Office for Standards in Education, Cm 5402.*

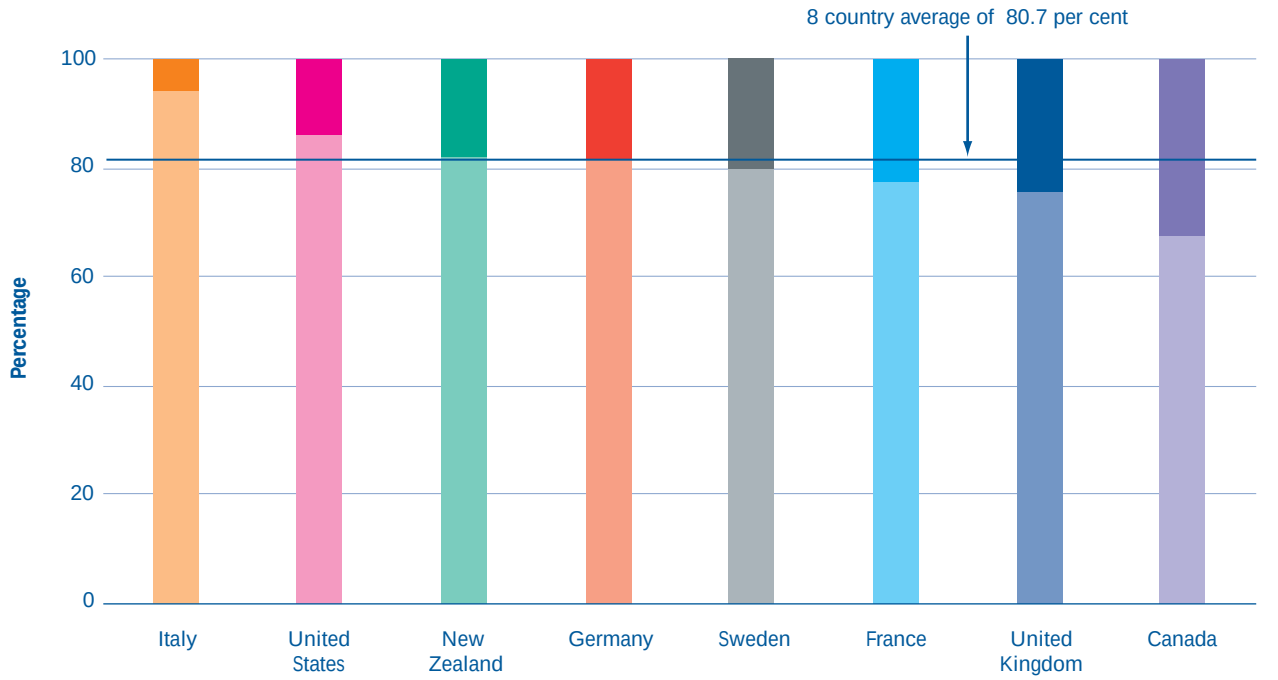
3.26 The United Kingdom Government has introduced a wide range of recruitment measures including £6,000 training bursaries for eligible students and 'golden hellos' for newly qualified teachers in shortage subject areas. In January 2002 there were 419,600 full-time equivalent teachers employed in maintained schools in England[8]. This is an increase of 20,400 since 1997. Despite this increase, some schools continue to experience difficulties recruiting the teachers they need.

3.27 In all OECD countries, primary teachers are predominantly women. There are also more female secondary teachers than male in most OECD countries. This situation is reversed in tertiary education. **Figure 17** shows the predominance of women in primary education. It is less marked in the United Kingdom than most other countries: 75.6 per cent of teachers are women compared to an eight country average of 80.7 per cent.

School resources

3.28 Educational resources can enhance learning opportunities in schools and their availability is a pre-requisite to effective teaching[9]. As part of the Programme for International Student Assessment (PISA) for 15-year-olds, school principals were asked the extent to which learning is hindered by a lack of instructional material in the library, computers, and inadequate science laboratory equipment. **Figure 18** shows that the percentage of students enrolled in schools where principals report that learning is hindered by a lack of instructional material in the library varies from 11 per cent in New Zealand to 38 per cent in the United Kingdom, with a ten country average of 24 per cent. The percentage of students hindered by a lack of computers varies from 28 per cent in France to 56 per cent in the United Kingdom, with a ten country average of 38 per cent. The percentage of students hindered by inadequate science laboratory equipment varies from 13 per cent in France to 42 per cent in the United Kingdom, with a ten country average of 25 per cent.

17 Gender distribution of teachers in primary education (1999)

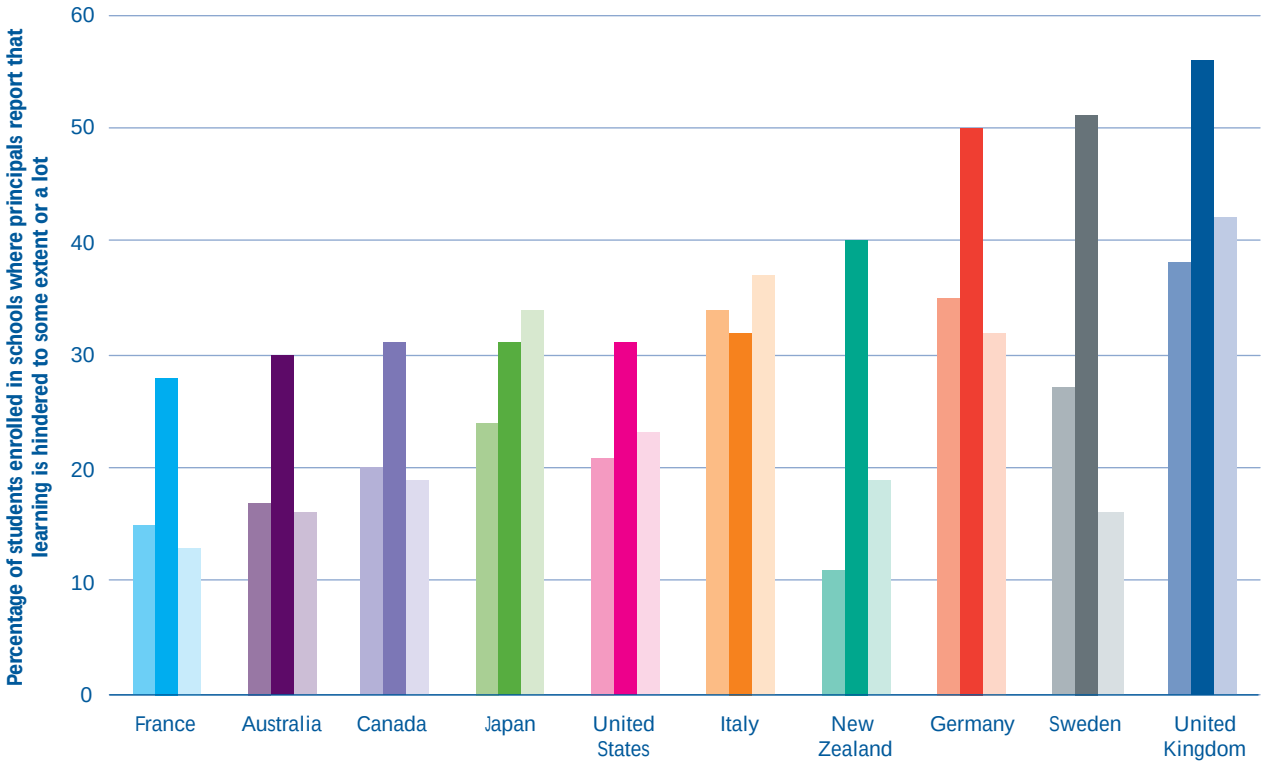


The lighter tinted bars represent female teachers. The darker tinted bars represent male teachers.

Source: Table D2.2, Education at a Glance: OECD Indicators 2001, OECD

9 *Education at a Glance: OECD Indicators 2002, OECD.*

18 The extent to which learning is hindered by lack of equipment in schools (2000)



The lighter tinted bars represent inadequate science equipment.
The middle tinted bars represent lack of instructional material in school library.
The darker tinted bars represent lack of computers.

Source: Table D5.3, Education at a Glance: OECD Indicators 2002, OECD

Part 4

Educational achievements

4.1 This part provides information on trends in the level of student performances in mathematics, science and literacy, completion of tertiary education and adult basic skills. It also provides information on the returns to education.

4.2 For policy-makers in many countries, international comparisons of student achievement have become essential tools for assessing the performance of their countries' education systems and the adequacy of their students' preparation for participation in an increasingly global world. Such comparisons offer an external point of reference for the objective evaluation of education systems' effectiveness.

Student performance in mathematical, scientific and reading literacy

4.3 Knowledge and skills in mathematics, science and reading are important outcomes of education. There are two main data sets that provide a basis for comparison of student achievement, both of which are sample-based surveys.

4.4 The Programme for International Student Assessment (PISA) assesses literacy of 15-year-olds in reading, mathematics and science. PISA assesses young people's capacity to use their knowledge and skills in order to meet real-life challenges.

4.5 The International Association for the Evaluation of Educational Achievement's (IEA) Third International Mathematics and Science Study (TIMSS) assesses the mathematics and science achievements of students around the age of 13 years. In mathematics, students' knowledge of fractions and number sense, algebra, geometry, data representation and analysis, probability, measurement and proportionality were assessed. In science, student's knowledge of earth science, life science, physics, chemistry, environmental and resource issues, scientific inquiry and the nature of science were assessed.

4.6 The two studies are not directly comparable because they examine different skills. TIMSS examines student knowledge whereas PISA examines the application of knowledge.

4.7 The accuracy of any survey results depends on the quality of the information on which national samples are based as well as on sampling procedures, and for this reason quality standards and control procedures were established for sample selection on both studies. However, it is difficult to ensure the results are representative of the population and this has an impact on whether results between countries are comparable.

4.8 For PISA a minimum response rate of 85 per cent was required for schools initially selected. Where the response rate was between 65 and 85 per cent, however, an acceptable school response rate could still be achieved through replacement. The response rates from United Kingdom schools were lower (61.3 per cent before replacement and 82.1 per cent after replacement) than PISA's targets. However the PISA consortium recommended the data for inclusion as there was no substantial evidence of non-response bias in terms of the GCSE average point score, or socio-economic status as measured by the percentage of students eligible for free school meals[10] .

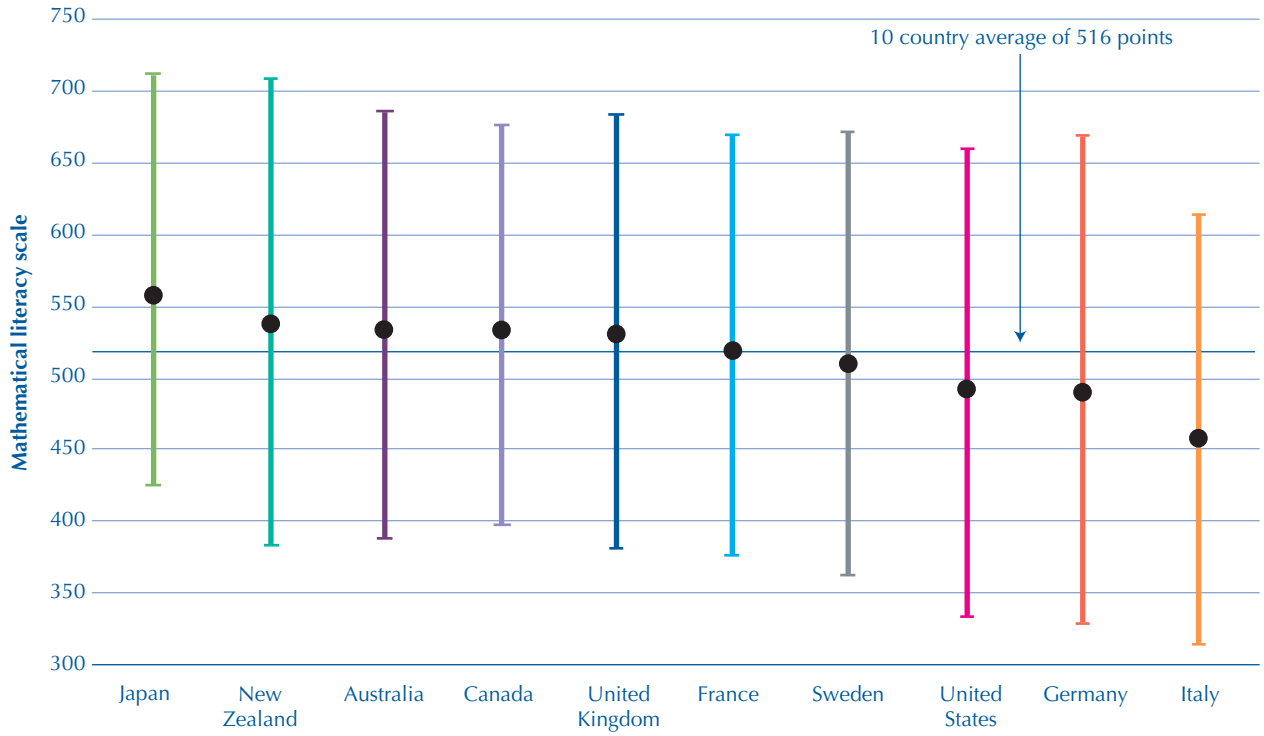
Mathematics literacy

4.9 The most recent survey of student performance in mathematics, PISA, showed the United Kingdom above the ten country average **(Figure 19).** Each country displays a range of student performance, for example the United Kingdom's range is 302 points. The average range for the ten countries is 305 points.

10 *PISA 2000 Technical Report, OECD 2002.*

19 Mean mathematical literacy scores of 15-year-olds (2000)

The bar represents the range of performance from the 5th to 95th percentile and the black circle represents the mean.



NOTE

PISA is a sample-based survey so the resulting estimates are associated with some level of uncertainty.

Source: Table A6.1, Education at a Glance: OECD Indicators 2002, OECD

4.10 TIMSS was completed in 1995 and 1999, but featured only seven of the ten countries highlighted in this compendium. **Figure 20** shows mean mathematics achievement for these seven countries. The difference in performance between 1995 and 1999 is statistically significant only for Canada.

4.11 The United Kingdom Government has set a number of targets to raise the standard of mathematics in England: 75 per cent of 11-years-olds to reach the level expected for their age by 2002, rising to 85 per cent by 2004; and 75 per cent of 14-years-olds to reach the level expected for their age by 2004, rising to 85 per cent by 2007. The Government failed to reach its 2002 target, with 73 per cent of 11-years-olds reaching the level expected for their age.

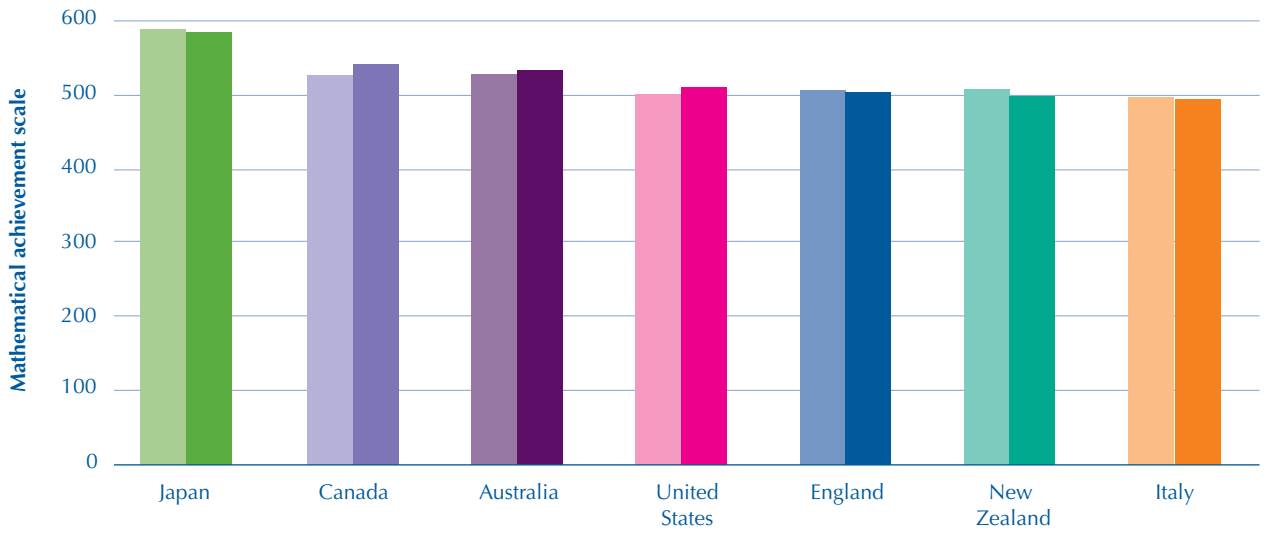
Scientific literacy

4.12 **Figure 21** shows the mean score and range of student performance for each country on PISA's scientific literacy scale. The United Kingdom is above the ten country average. Each country displays a range of student performance, for example the United Kingdom's range is 321 points. The average range for the ten countries is 316 points.

4.13 **Figure 22** shows mean scientific achievement from TIMSS. Canada is the only country to show a statistically significant change between 1995 and 1999.

4.14 The United Kingdom Government has set two targets to raise the standard of science in England: 75 per cent of 14-years-olds to reach the level expected for their age by 2004, rising to 80 per cent by 2007. Figures for 2002 showed that 66 per cent of 14-years-olds had reached the level expected for their age.

20 Mean mathematical achievement scores of 13-year-olds (1995 and 1999)



The lighter tinted bars represent 1995. The darker tinted bars represent 1999.

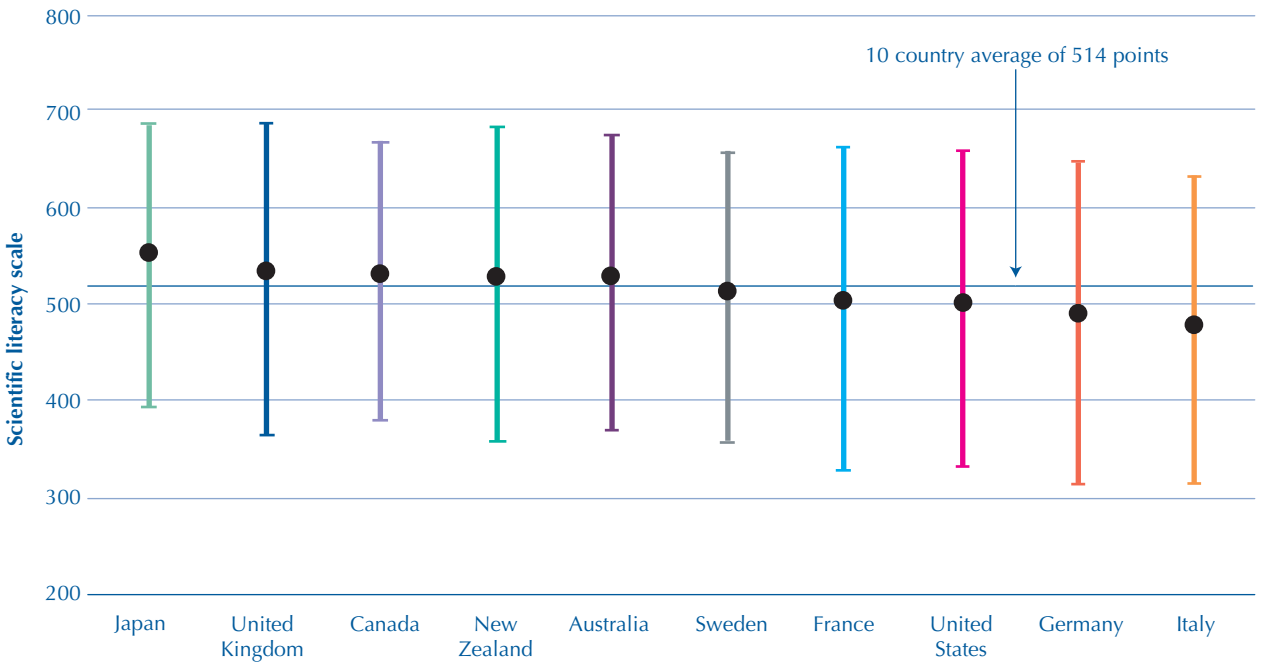
NOTE

TIMSS is a sample-based survey so the resulting estimates are associated with some level of uncertainty. Guidelines for sample participation rates were met by England only after replacement schools were included.

Source: IEA TIMSS (1995) and TIMSS-R (1999)

21 Mean scientific literacy scores of 15-year-olds (2000)

The bar represents the range of performance from the 5th to 95th percentile and the black circle represents the mean.

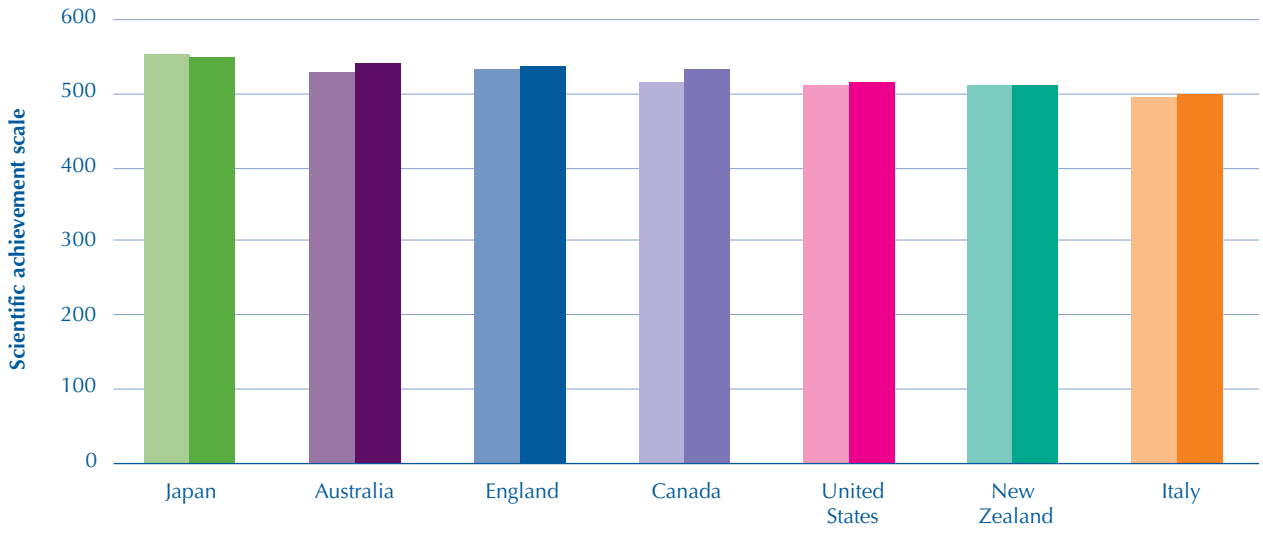


NOTE

PISA is a sample-based survey so the resulting estimates are associated with some level of uncertainty.

Source: Table A6.2, Education at a Glance: OECD Indicators 2002, OECD

22 Mean scientific achievement scores of 13-year-olds (1995 and 2000)



The lighter tinted bars represent 1995. The darker tinted bars represent 1999.

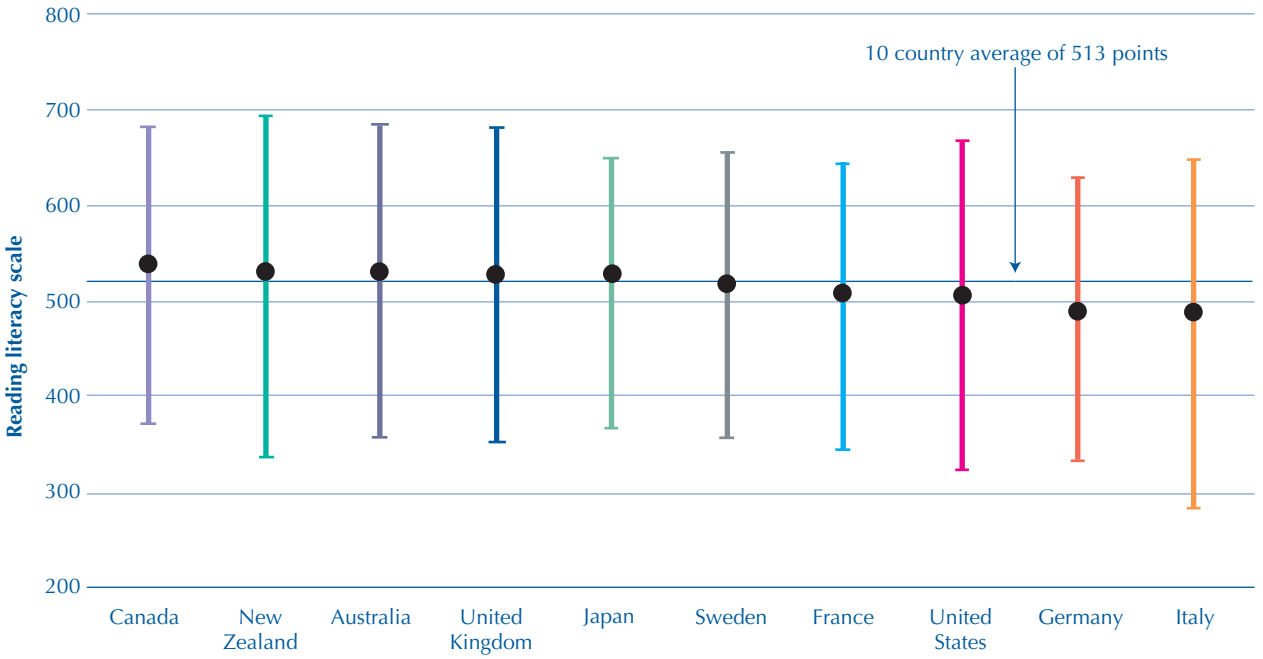
NOTE

TIMSS is a sample-based survey so the resulting estimates are associated with some level of uncertainty. Guidelines for sample participation rates were met by England only after replacement schools were included.

Source: IEA TIMSS (1995) and TIMSS-R (1999)

23 Mean reading literacy scores of 15-year-olds (2000)

The bar represents the range of performance from the 5th to 95th percentile and the black circle represents the mean.



NOTE

PISA is a sample-based survey so the resulting estimates are associated with some level of uncertainty.

Source: Table A5.2, Education at a Glance: OECD Indicators 2002, OECD

Reading literacy

4.15 **Figure 23** shows the mean score and range of performance of students for each country on PISA's reading literacy scale. The United Kingdom is above the ten country average. Each country displays a range of student performance, for example the United Kingdom's range is 330 points. The average range for the ten countries is 323 points.

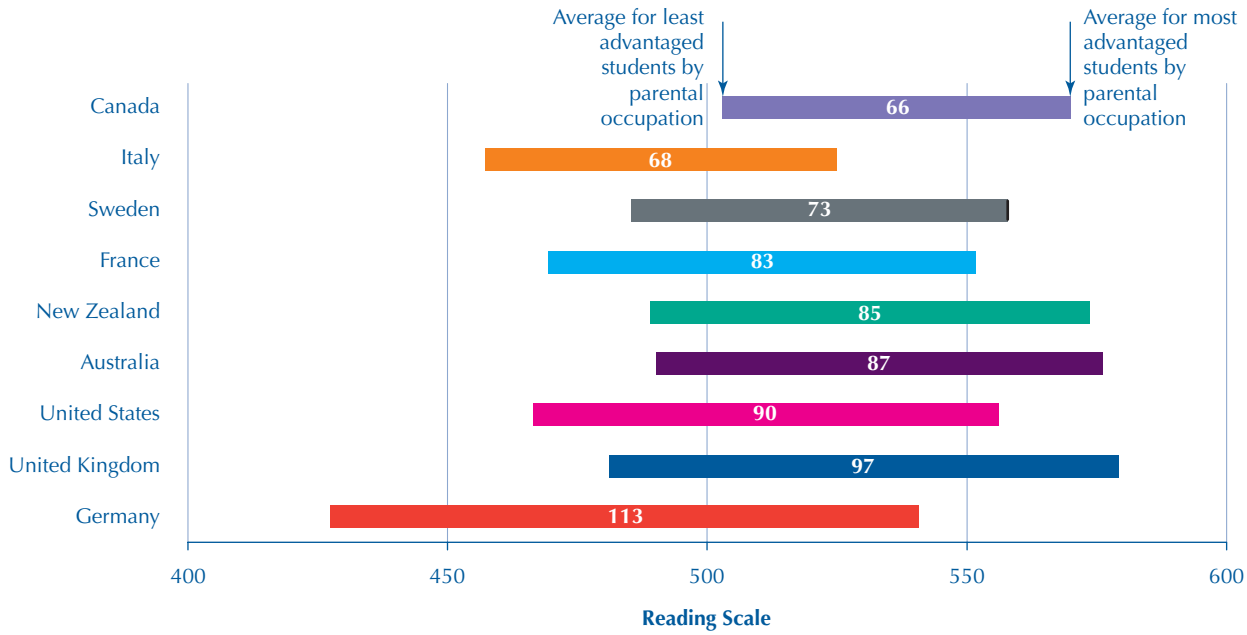
4.16 The United Kingdom Government has set a number of targets to raise the standard of English in England: 80 per cent of 11-years-olds to reach the level expected for their age by 2002, rising to 85 per cent by 2004; and 75 per cent of 14-years-olds to reach the level expected for their age by 2004, rising to 85 per cent by 2007. The Government failed to reach its 2002 target, with 75 per cent of 11-years-olds reaching the level expected for their age.

Family Background

4.17 It is well established that students who come from more advantaged family backgrounds, in terms of factors such as parental education and occupations, and resources in the home, perform better at school. However, the association between family background and student performance differs greatly from one country to another. For example, **Figure 24** shows average difference in PISA reading scores according to parental occupation. The difference varies from 66 points in Canada to 113 points in Germany, with an average value of 85. Not all students from disadvantaged family backgrounds, according to parental occupation, perform poorly. For example, in Canada the most disadvantaged students, according to parental occupation, show medium rather than low performance scores.

24 Differences in reading scores by parent's occupation (2000)

The length of each bar represents the mean difference in reading literacy between the least advantaged and the most advantaged.



NOTE

The least and most advantaged students are classified as the bottom and top quarter of PISA's Socio-Economic Index of Occupational Status, which is derived from students' responses on parental occupation. The index captures the attributes of occupations that convert parents' education into income and is based on either the father's or mother's occupations, whichever is higher.

Source: Table A9.1, Education at a Glance: OECD Indicators 2002, OECD

Gender

4.18 Policy-makers have given considerable priority to issues of gender equality in education, with particular attention to disadvantages faced by girls and women. The results from PISA point to the success of many countries in this area but also to a growing problem for males, particularly in reading literacy where females do better in all OECD countries. The difference between males and females in the United Kingdom is not as great as in most other OECD countries. In Canada, France and Germany, males do better at mathematics literacy. In the other countries, including the United Kingdom, there is no statistically significant difference. In scientific literacy, most countries, including the United Kingdom, display no statistically significant difference.

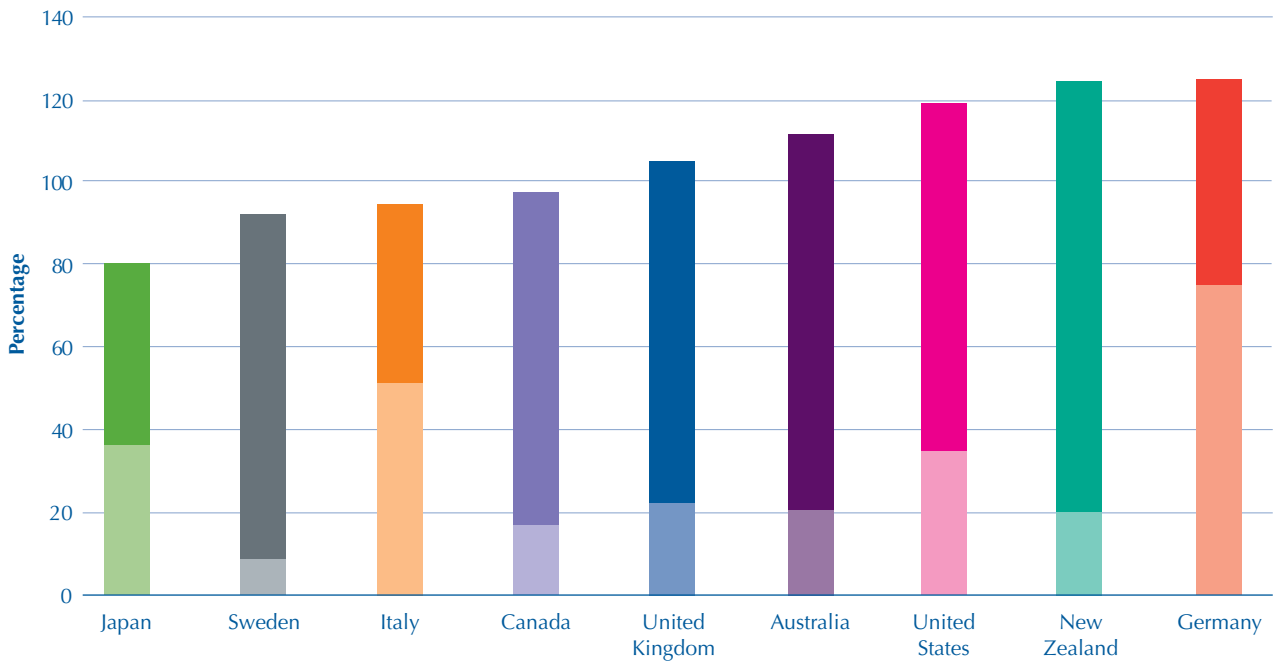
Differences between and within schools

4.19 School systems aim to provide equality of opportunity, giving the same chances to children regardless of family circumstances to which they were born[11]. **Figure 25** shows that in most countries, including the United Kingdom, there is more variation in PISA reading scores within schools than between schools. On average, across the nine countries, difference between schools accounts for 30 per cent of the student variation in performance. However, in Germany and Italy, variation in reading performance is greater between schools than within schools.

4.20 Some of the variation between schools is attributable to geography (e.g. differences between rural and urban areas), institutional factors (e.g. differences between public and privately managed schools) or the selection of students by ability. The extent of the variation between schools that is attributable to these factors varies between countries. In Germany, these factors account for 87 per cent of the between-school variation, whereas in Australia and Canada they account for less than 10 per cent. In the United Kingdom the variation is 22 per cent, of which a third reflects differences between types of schools such as those managed by local authorities versus other bodies such as self-governing trusts and church foundations, co-educational and single-gender schools, and regional differences.

25 Variation in student performance in reading between and within schools (2000)

Expressed as a percentage of the average variation in student performance on the reading literacy scale in OECD countries.



The darker tinted bars represent variation within schools. The lighter tinted bars represent variation between schools.

NOTE

If the sum of the two bars for each country is larger than 100, this indicates that variation in student performance is greater in the corresponding country than in a typical OECD country.

Source: Table A7.1, Education at a Glance: OECD Indicators 2002, OECD

11 *Education at a Glance: OECD Indicators 2001,OECD.*

Completion of tertiary education

4.21 Tertiary graduation rates indicate the current production of higher level knowledge by each country's education system. Countries with high graduation rates at the tertiary level are the most likely to be developing or maintaining a highly skilled labour force[12].

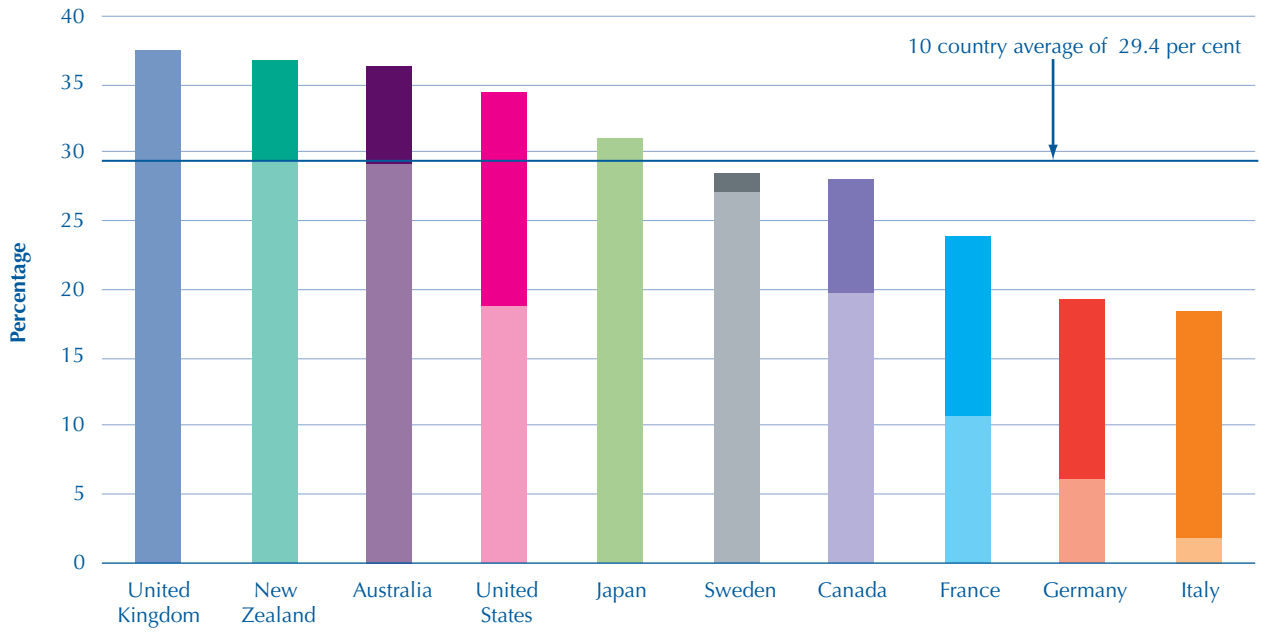
4.22 **Figure 26** shows that, for the ten countries examined, an average of 29.4 per cent of people at the typical age of graduation gain a qualification from a first tertiary-type A programme. The United Kingdom has the highest rate of 37.5 per cent. Tertiary-type A students in most countries spend up to five years on a first degree. However, in France, Germany and Italy, most students spend five years or more.

4.23 Graduation rates are a function of participation rates (see Figure 14) and completion rates of those participating. Tertiary level completion rates can be useful indicators of the internal efficiency of tertiary education systems. Specific reasons for leaving are varied: students may realise that they have chosen the wrong subject or educational programme; they may fail to meet the standards set by their educational institution; their personal circumstances may change; they may leave due to financial reasons; or they may find attractive employment before completion[13].

4.24 **Figure 27** shows that tertiary-type A completion rates differ widely across the countries examined ranging from 42 per cent in Italy to 94 per cent in Japan. The United Kingdom has a completion rate of 83 per cent.

4.25 On average, over the ten countries examined, 1.3 per cent of the population obtain an advanced research qualification, such as a PhD **(Figure 28)**. For the United Kingdom, this figure is also 1.3 per cent. No data are available for second degrees, such as masters, in the year 2000. However, in 1999, on average 7.0 per cent of people at the typical age complete a second tertiary-type A programme, and in the United Kingdom, this figure was 12.7 per cent.

26 Proportion of population graduating from tertiary-type A education (2000)



The lighter tinted bars represent medium first degree programme (3 to less than 5 years).
The darker tinted bars represent long first degree programme (5 years or more).

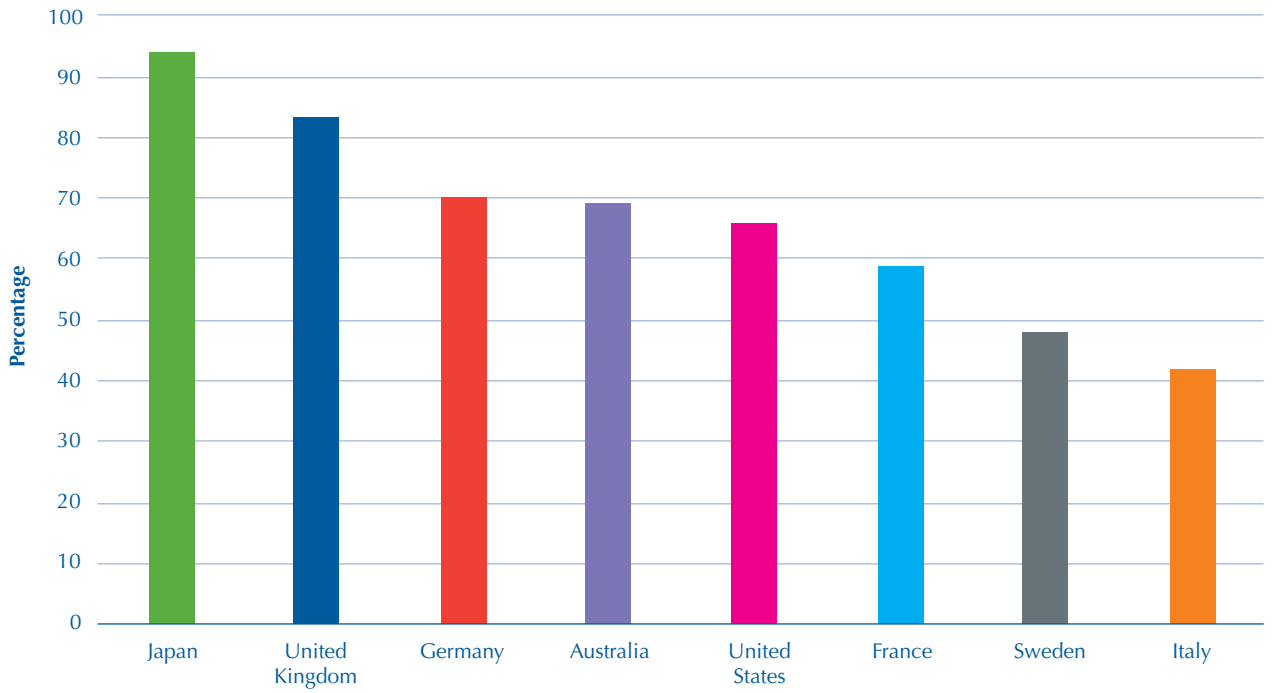
NOTE

Figures for Japan and the United Kingdom represent all tertiary-type A programmes with no separation on the basis of length.
Figures are calculated as a ratio of graduates to total population at the typical age of graduation (see Appendix 1).

Source: Table A2.1, Education at a Glance: OECD Indicators 2002, OECD

12 *Education at a Glance: OECD Indicators 2001, OECD.*
13 *Improving student achievement in English higher education (HC639 2001-02) and Improving student achievement and widening participation in higher education in England, 58th report of the Committee of Public Accounts (HC588 2001-02).*

27 Completion rates in tertiary-type A education (2000)

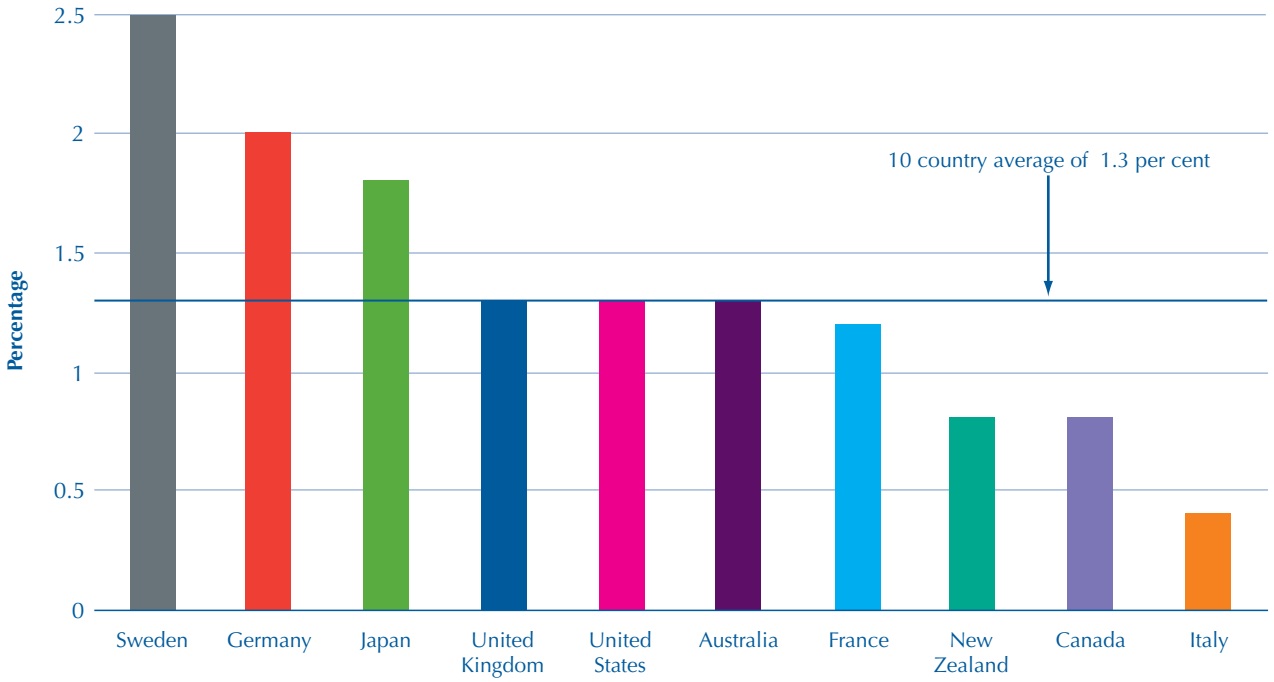


NOTE

Completion rates are calculated by taking the number of graduates divided by the number of new entrants in the typical year of entrance.

Source: Table A2.2, Education at a Glance: OECD Indicators 2002, OECD

28 Proportion of population graduating from doctoral programmes (2000)



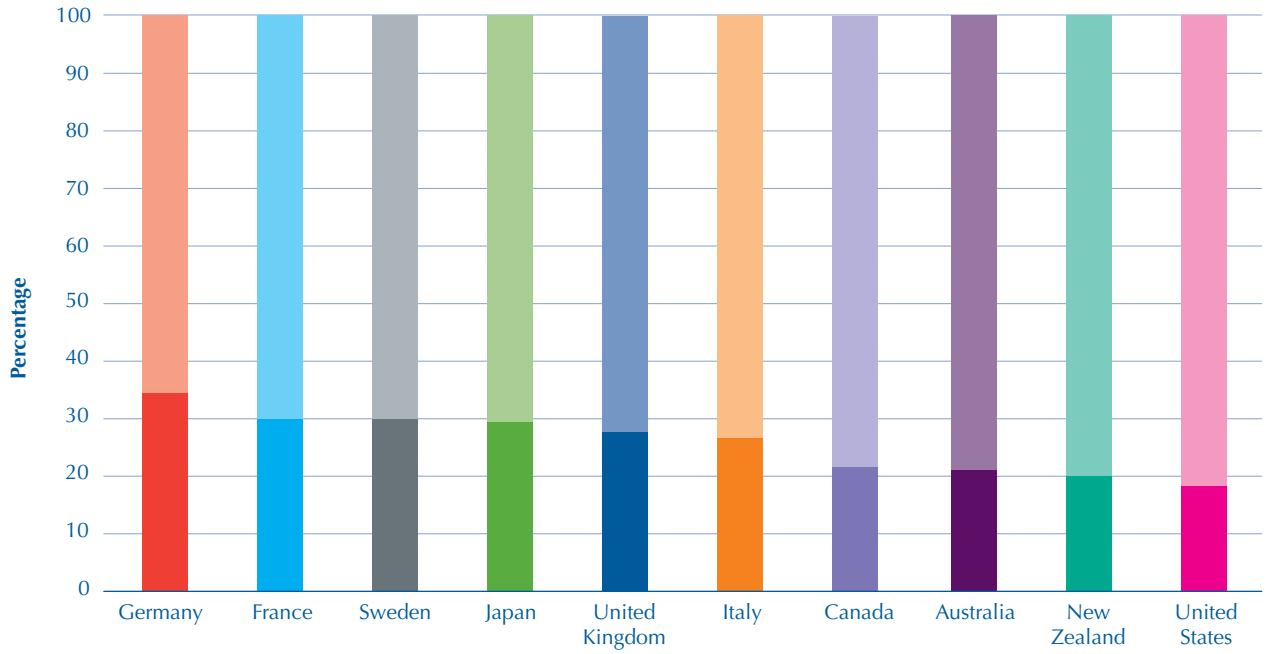
NOTE

Graduation rates for most countries are calculated in a way that allows for the age profile of the population. The calculations for United States, Japan, and France make no allowance for age profile.

Source: Table A2.1, Education at a Glance: OECD Indicators 2002, OECD

29 Tertiary graduates by field of study (2000)

Graduates with tertiary-type A and advanced research qualifications.



The darker tinted bar represents degrees with a high numerate content degrees. The lighter tinted bar represents other degrees.

NOTE

Degrees classified as having a high numerate content are life sciences, physical sciences, agriculture mathematics, computer science, engineering, manufacturing and construction. The classification is dictated by grouping of degrees. For example, in the data used, geography is part of the humanities and is therefore not classified as having a high numerate content.

Source: Table A4.1, Education at a Glance: OECD Indicators 2002, OECD

Graduates by field of study

4.26 Over the ten countries examined, numerate degrees account for 26 per cent of tertiary-type A and advanced research qualifications awarded **(Figure 29)**. For individual countries, the figure ranges from 34.4 per cent in Germany to 18.1 per cent in the United States. In the United Kingdom, it is 27.5 per cent.

Adult numeracy and literacy

4.27 The basic skills of literacy and numeracy are important for the effective functioning of labour markets and for the economic success and social advancement of both individuals and societies. In 1997 the International Adult Literacy Survey (IALS) made a standard literacy assessment of twelve countries, including Britain. It examined three areas of literacy.

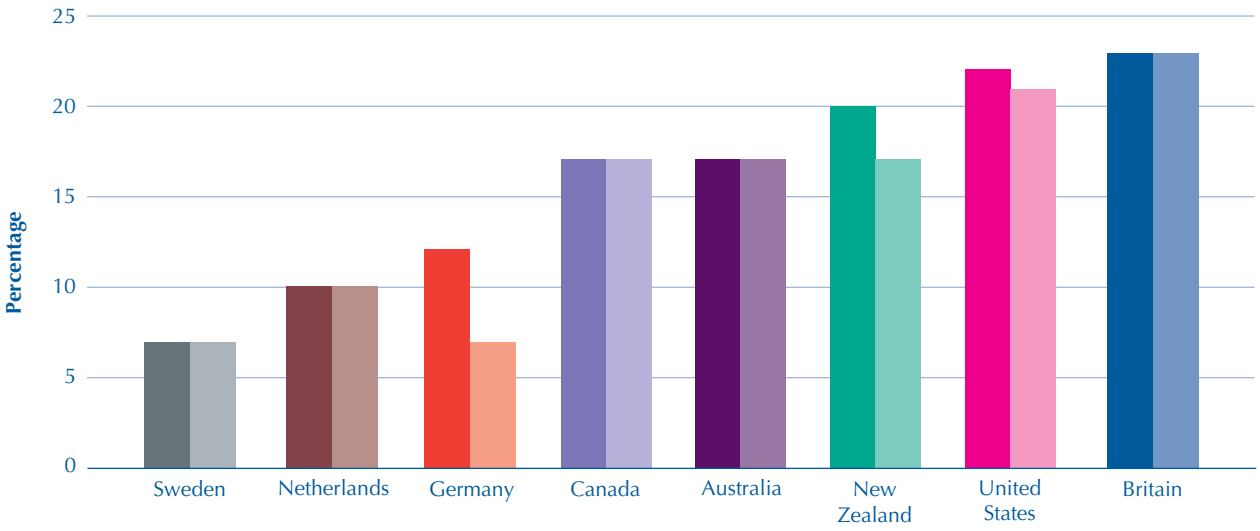
- **Prose literacy** - the knowledge and skills needed to understand and use information from texts, including editorials, news stories, poems and fiction.
- **Document literacy** - the knowledge and skills required to locate and use information contained in various formats, including job applications, transport schedules, maps, tables and graphics.
- **Quantitative literacy (numeracy)** - the knowledge and skills required to apply arithmetic operations, either alone or sequentially, to numbers embedded in printed material, such as balancing a cheque-book, or determining the amount of interest on a loan from an advertisement.

4.28 Though many countries have problems with poor literacy and numeracy, Britain has more severe problems than most **(Figure 30)**. Of the twelve countries in the survey, only Poland and Ireland had a higher proportion of people with literacy and numeracy skills at the lowest level.

4.29 In March 2001, the Government launched a national strategy, *Skills for Life,* for improving adult literacy and numeracy. The 2000 Spending Review Public Service Agreement target commits the Department for Education and Skills to improving the basic skills of 750,000 adults by 2004. The Department reported that in the period April 2001 to January 2002, 124,000 adults had been helped to improve their skills[14].

14 *Departmental Report 2002, Department for Education and Skills and Office for Standards in Education, Cm 5402.*

30 Adults with literacy and numeracy skills at the lowest level (1997)



The lighter tinted bars represent adults at lowest numeracy level. The darker tinted bars represent adults at lowest literacy level.

NOTE

Literacy results combine prose and document literacy. At the lowest literacy level an individual may, for example, be unable to determine the correct amount of medicine to give a child from information printed on the package. At the lowest numeracy level an individual may, for example, be unable to add 2 and 50 together.

Source: Literacy Skills for the Knowledge Society, OECD, 1997

The returns to education

4.30 One way in which markets provide incentives for individuals to develop and maintain appropriate levels of skill is through wage differentials, in particular through enhanced earnings from additional education. The pursuit of higher levels of education can also be viewed as an investment by society in human capital.

4.31 The overall incentives on individuals to invest in their education can be summarised in estimates of the private internal rates of return. The rate of return represents a measure of the returns obtained, over time, relative to the cost of the initial investment in education. It is expressed as a percentage as it is analogous to percentage returns from investing the cost of education in a savings account and reaping the returns in higher earnings. This rate of return does not take into account the non-monetary benefits of education.

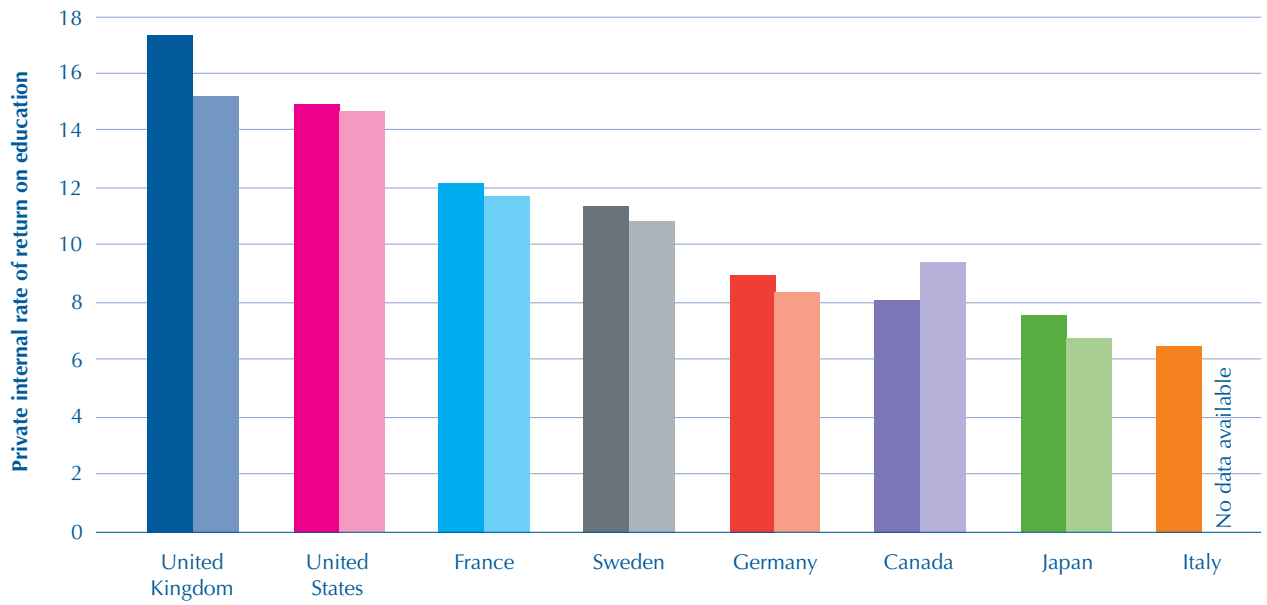
4.32 **Figure 31** shows that the estimated private internal rates of return to tertiary education differ across the countries. The United Kingdom has highest internal rates of return for both men (17.3) and women (15.2). The rate of return is higher for men than women in all countries except Canada, where this position is reversed.

4.33 Earnings differentials and the length of education are generally the prime determinants of the private internal rates of return. The high rates in the United Kingdom, for example, are to a large extent due to relatively short higher education courses, whereas the low rates in Germany are strongly influenced by comparatively long study periods.

4.34 As well as individual returns to investment in education, there are also social returns. In order to shed light on the impact of policy and institutions on output growth in OECD countries, an empirical analysis based on growth regressions has been undertaken[15]. **Figure 32** displays the estimated percentage change in growth rate due to increases in human capital from the 1980s to the 1990s. It shows that growth attributable to human capital varied from 0.84 per cent in Italy to 0.07 per cent in the United States. In the United Kingdom, human capital accounted for 0.44 per cent growth in the 1990s compared with the previous decade. Some of the ten countries experienced negative overall growth over the period. Here the implication of the regression is that growth would have been even more negative without the benefits of investments in human capital. The growth attributable to human capital in Italy, is almost twice that of any other country. This may reflect the fact that the education attainment of Italy's population is lower than any other country (see Figure 2 on page 4), and an increase in this is likely to have a larger effect on its growth rate than for other countries, who already have better-educated populations.

15 *For details see Economic Outlook, No. 68.*

31 Private internal rates of return on tertiary education (1999-2000)



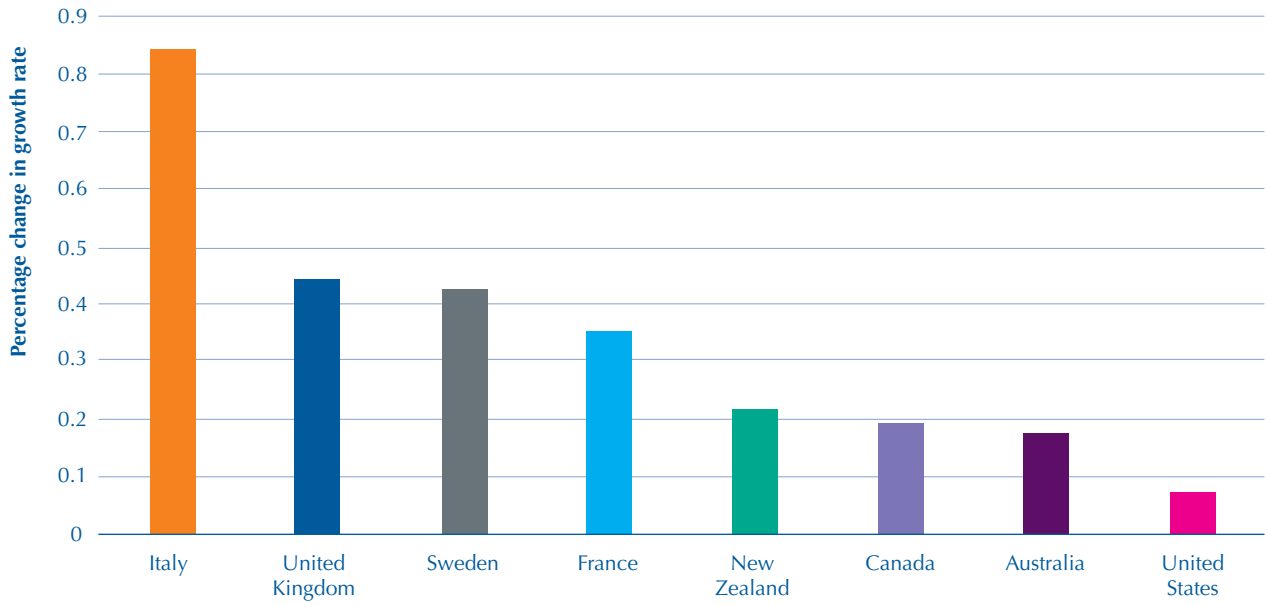
The lighter tinted bars represent internal rates of return for females. The darker tinted bars represent internal rates of return for males.

NOTE

The rate of return is estimated as the additional benefit that a person gains over a lifetime from undertaking tertiary education, rather than stopping at the secondary level, offset by the costs of doing so. It is analogous to the rate of return in an investment.

Source: Table A13.3, Education at a Glance: OECD Indicators 2002, OECD

32 Changes in annual average growth rates of GDP (1980-1997) due to investments in human capital



NOTE

Human capital is estimated on the basis of completed levels of education and average years of schooling at each level in the working age population. Educational attainment is a proxy for skills and competencies, taking little account of the quality of formal education or of other important dimensions of human capital.

Source: Table A14.1, Education at a Glance: OECD Indicators 2002, OECD

Appendix 1 Compulsory education, typical graduation ages, length of school year and annual teaching hours

Compulsory education and typical graduation ages

Country	Start of compulsory education	Ending age of compulsory education	Typical graduation ages		
			Upper secondary	Tertiary-type B	Tertiary-type A
Australia	6	15	18	-	20
Canada	6	16	-	20	22
France	6	16	18-19	20-21	21-22
Germany	6	18	19	21	25
Italy	6	14	19	-	22
Japan	6	15	18	20	22
New Zealand	6	16	-	20	21-22
Sweden	7	16	19	22-23	23-25
United Kingdom	5	16	18	20	21
United States	7	17	18	20	21

NOTE

Tertiary-type B graduation ages are for medium (2 to 3 years) duration programmes. Tertiary-type A graduation ages are for medium (3 to 5 years) duration programmes. Graduation age for upper secondary in the United Kingdom is provided by the Department for Education and Skills and represent a figure for England only.

Source: Education at a Glance: OECD Indicators 2001 and 2002, OECD

Length of school year and annual teaching hours

Country	School year (days)	Annual teaching hours	
		Primary	Lower secondary
Australia	196	882	811
Canada	-	-	-
France	180	907	639
Germany	188	783	732
Italy	-	748	612
Japan	193	635	557
New Zealand	192	985	968
Sweden	-	-	-
England	190	798(5 to 7) 893(8 to 11)	912
Scotland	190	950	893
United States	180	1139	1139

NOTE

Annual teaching hours for England are minimum recommended hours.

Source: Table D7.1, Education at a Glance: OECD Indicators 2002, OECD

Appendix 2 Education delivery systems

Australia

Administration

1 Each State in Australia has responsibility for its own education system, including curricula, although the Federal Department for Education, Training and Youth Affairs is responsible for a national education policy and ensures consistency and standards are maintained though all the States and Territories. The Federal Government provides significant Australia-wide funding for school education. In 1999, public funding accounted for 76.8 per cent of expenditure on educational institutions.

2 Consultation between the Federal Government and the States occurs through the Ministerial Council on Education, Employment, Training and Youth Affairs. They produce an annual report, *the National Report on Schooling in Australia*, which focuses on student outcomes and school performance. The Australian Universities Quality Agency promotes, audits and reports on quality assurance in Australian higher education and the National Training Quality Council monitors national vocational education and training (VET) system.

Pre-primary education

3 Pre-primary education is not compulsory in Australia. In most States and Territories schools provide one year of pre-primary education and one year of part-time pre-school before the pre-primary year. Pre-school programmes are provided by public and private institutions and parental fees are subsidised by Child Care Benefit.

Compulsory education (primary and lower secondary)

4 Primary and secondary school teachers are expected to implement the curriculum in their classrooms. They may be expected to develop State or territory curriculum statements. Within each State and Territory, Ministers, departments, statutory authorities and individual schools determine policies and practices in such matters as curriculum, and there is some variation between States and Territories in the degree to which the curriculum is prescribed centrally. Compulsory education in public institutions is free in most States. In 1999, 2.5 per cent of primary and secondary students attended government-dependent private institutions.

Upper secondary and post-secondary education

5 Senior secondary education offers several types of programme which prepare students either for future study (tertiary entrance programmes), employment (vocational education and training programmes) or adult life (recreational and personal development courses). Most senior secondary educational institutions charge fees or have contribution schemes.

Higher education

6 There are two main types of higher education programme: vocational education and training, offered by Technical and Further Education institutions and industry; and academic programmes offered by universities and other higher education institutions. Higher education students are subject to a range of fees and charges. In 1999, public sources accounted for 53.5 per cent, and private sources accounted for 46.5 per cent, of expenditure on tertiary educational institutions. Publicly funded student support accounted for 32.3 per cent of public expenditure on tertiary education (14.6 per cent on scholarships and other grants and 17.7 per cent on student loans), equivalent to 0.38 per cent of GDP.

Teachers

7 Each State and Territory has its own requirements and procedures for the recognition and recruitment of teachers. Teachers, however, must successfully complete four years of tertiary education, which include at least one year of full-time teacher education. In Western Australia, for example, you can become a teacher in one of two ways - by completing a four-year Bachelor of Education degree, or by completing a tertiary degree (e.g. Bachelor of Science, Bachelor of Arts) and a one-year Graduate Diploma of Education. States must prepare public "report cards" on teacher quality, including the percentage of teachers who are teaching under sub-standard licenses, and the quality of teacher education programs. In 1999, teaching staff in primary and secondary education represented 2.3 per cent of the total labour force.

Canada

Administration

8 Within the Canadian federal system of shared powers, responsibility for education rests with the ten provinces and three territories. Each has a ministry or department, which develops its own educational structures and institutions. The provinces and territories co-operate on activities at the primary, secondary and post-secondary levels via the Council of Ministers of Education. Each province or territory has its own quality assurance arrangements and teacher evaluation policies. The federal government has responsibilities for economic planning and human resource development. In 1999, public funding accounted for 79.8 per cent of expenditure on educational institutions.

Pre-primary education

9 Pre-school programmes or kindergartens, which are operated by local education authorities, are optional and free of charge. Children may attend kindergarten for one or two years at the age of four or five.

Compulsory education (primary and lower secondary)

10 Curricula are either developed centrally by the provincial ministry or jointly with local school boards. There is neither a national curriculum nor national standards for education. Under provincial jurisdiction, individual schools are operated and administered by local boards of education. Most secondary schools offer a mix of academic and vocational courses, although a few offer only academic or vocational courses. Compulsory education in public institutions is free of charge. In 1999, 2 per cent of primary and secondary students attended government-dependent private institutions and 3 per cent attended independent private institutions.

Upper secondary and post-secondary education

11 Most secondary schools also provide post-compulsory education for students aged 16 to 18. Colleges, known as Cépags, offer both a general programme that leads to university admission and a professional programme that prepares students for the labour force. College students are generally charged tuition fees, whereas secondary school students are not.

Higher education

12 Higher education is provided by universities and university colleges, which offer a range of degree courses and community colleges which offer vocationally-oriented or technical programmes and sometimes academic university transfer programmes. Universities are largely public funded and charge tuition fees. In 1999, public sources accounted for 61.7 per cent, and private sources accounted for 38.3 per cent, of expenditure on tertiary educational institutions. Publicly funded student support accounted for 18.6 per cent of public expenditure on tertiary education (12.2 per cent on scholarships and other grants and 6.4 per cent on student loans), equivalent to 0.35 per cent of GDP.

Teachers

13 In most Canadian jurisdictions, becoming a teacher requires the completion of a three- or four-year degree from an accredited university and at least one-year of teacher training, or its equivalent. The structure of teacher education programs may differ by province; some universities include special programs or certificates as part of their required curriculum. In 1999, teaching staff in primary and secondary education represented 1.7 per cent of the total labour force.

England, Wales and Northern Ireland

Administration

14 The responsibility for educational service lies with the Department for Education and Skills in England, with the National Assembly for Wales Training and Education Department, and, in Northern Ireland, the Department for Education and Department of Employment and Learning. In England and Wales, the planning and funding of further education is the responsibility of non-departmental public bodies (the Learning and Skills Council and the National Council for Education and Training), and funding higher education is the responsibility of national level bodies (the Higher Education Funding Council for England and the Higher Education Funding Council for Wales). In Northern Ireland the Department of Employment and Learning is responsible for both these areas. In 1999, public funding accounted for 85.9 per cent of expenditure on educational institutions in the United Kingdom.

15 The inspection of schools in England is the responsibility of a non-ministerial Government Department, the Office for Standards in Education. A non-departmental public body, the Adult Learning Inspectorate, is responsible for the inspection of further education institutions. In Wales, a single body (Estyn) inspects pre-school, schools and further education institutions, while in Northern Ireland, the Education and Training Inspectorate within the Department of Education, is responsible for inspecting schools and further education institutions.

Pre-primary education

16 For children aged from three months to three years, provision is largely in the private and voluntary sectors, and parents pay fees. For children aged from three to five, early years education and childcare in England and Wales is currently being reformed with the aim of universal, free nursery provision for all three-year olds by 2004. Northern Ireland is also working towards provision of a full year of pre-school for every child whose parents want it.

Compulsory education (primary and lower secondary)

17 All primary schools and most secondary schools accept pupils without regard to ability. In Northern Ireland, and in some areas of England, there are selective schools. Many secondary schools also provide education for post-compulsory students aged 16 to 18. Compulsory education in public institutions is free of charge. In 1999, 31 per cent of the United Kingdom's primary and secondary students attended government-dependent private institutions and 4 per cent attended independent private institutions.

Upper secondary and post-secondary education

18 There are three types of education; secondary schools and sixth form colleges offer general education; further education colleges offer largely vocational education although many also offer general education; tertiary colleges offer both general and vocational education. Upper secondary and post-secondary education is free of charge.

Higher education

19 Higher education institutions include universities, higher education colleges and a small number of university colleges. Universities charge tuition fees. In 1999, public sources accounted for 73.9 per cent, and private sources accounted for 26.1 per cent, of expenditure on tertiary educational institutions in the United Kingdom. Publicly funded student support accounted for 36.4 per cent of public expenditure on tertiary education (23.1 per cent on scholarships and other grants and 13.3 per cent on student loans), equivalent to 0.39 percent of GDP.

Teachers

20 School teachers are employed either by the local authority or by the individual institution, depending on the type of school. Initial teacher training generally involves a four-year Bachelor of Education degree course or a bachelor's degree followed by a one-year Postgraduate Certificate in Education. In 1999, teaching staff in primary and secondary education in the United Kingdom represented 2.4 per cent of the total labour force.

France

Administration

21 The State assumes overall responsibility for education policy. The Ministry of Education lays down guidelines for teaching, draws up the school curriculum and administers staff recruitment, training and management. To implement policy, the Ministry has 30 external administrative departments, each with jurisdiction over a particular geographical area. Within the overall system schools have a degree of independence. In 1999, public funding accounted for 93.7 per cent of expenditure on educational institutions.

22 Several inspectorates supervise the system. Two general inspectorates are entrusted with very broad responsibilities for evaluation. In addition, national education inspectors visit primary schools and monitor the performance of their teachers, while regional inspectors of teaching activity are responsible for marking and assessing secondary school teachers.

Pre-primary education

23 Pre-primary education, for pupils aged between two and six, is optional and free of charge. Schools have a fully-fledged teaching programme and their teachers belong to the same profession as those in primary schools.

Compulsory education (primary and lower secondary)

24 The Ministry of Education establishes educational curricula and basic guidelines. Teachers choose their own teaching methods and textbooks. Pupils normally complete at least one year of upper secondary education to comply with compulsory schooling requirements. Compulsory education in public institutions is free of charge. In 1999, 17 per cent of primary and secondary students attended government-dependent private institutions and 4 per cent attended independent private institutions.

Upper secondary and post-secondary education

25 There are two types of upper secondary education: general or technical; and vocational. Curricula are drawn up at the national level, with teachers choosing methods and materials. Upper secondary education is free of charge.

Higher education

26 Higher education institutions include universities and public sector or private institutions providing vocational training. Technological, vocational and teacher training institutes may be attached to universities. Universities charge academic fees. In 1999, public sources accounted for 88.0 per cent, and private sources accounted for 12.0 per cent, of expenditure on tertiary educational institutions. Publicly funded student support (scholarships and other grants) accounted for 8.0 per cent of public expenditure on tertiary education, equivalent to 0.08 per cent of GDP.

Teachers

27 To enter teaching students must have completed a university degree. A year's preparation is organised in university institutes for teacher training, followed by a competitive examination. Success in the examination is followed by a compulsory year of teacher training, combining theoretical work with periods of classroom practice. In 1999, teaching staff in primary and secondary education represented 2.7 per cent of the total labour force.

Germany

Administration

28 Responsibility for the education system is conditioned by the federal structure of the State. Educational legislation and administration are primarily the responsibility of the *Länder* (a system comprising the Ministry of Education, the Ministry of Cultural Affairs and Science, the regional authorities and the school offices at local level). In 1999, public funding accounted for 78.0 per cent of expenditure on educational institutions.

29 The Federal Government has responsibilities concerning the general framework for higher education and the financial assistance for individual training, including promotion of young academic staff. School supervisory authorities in each *Land* are responsible for inspection and exercise academic, legal and staff supervision within the school system. Public-law corporations, such as chambers of industry and commerce, supervise vocational training in the workplace.

Pre-primary education

30 Children aged three to six can attend *Kindergärten*, to which parents are required to contribute financially, despite the allocation of major public subsidies and other funding sources.

Compulsory education (primary and lower secondary)

31 The type of school attended at lower secondary level is decided by the parents on the basis of an assessment made by the primary school. The *Länder* ministries determine the curriculum, recommend teaching methods and approve textbooks. Compulsory education in public institutions is free of charge. In 1999, 5 per cent of primary and secondary students attended government-dependent private institutions.

Upper secondary and post-secondary education

32 There are three types of education at these levels: general upper secondary, full-time vocational and the dual system of vocational training in both the workplace and at school. The curriculum varies with the type of education and training. The dual system is experienced by two-thirds of all young people. Firms finance the training in the workplace. Upper secondary and post-secondary education is free of charge.

Higher education

33 Higher education institutions include universities and equivalent higher education institutions, colleges of art, colleges of music and universities of applied science. Access to publicly funded higher education institutions is normally free. In 1999, public sources accounted for 91.8 per cent, and private sources accounted for 8.2 per cent, of expenditure on tertiary educational institutions. Publicly funded student support accounted for 12.0 per cent of public expenditure on tertiary education (10.1 per cent on scholarships and other grants and 1.9 per cent on student loans), equivalent to 0.13 per cent of GDP.

Teachers

34 Teachers are trained at universities and colleges of art and music and take a state examination, usually in two subjects and educational science. Primary school teachers are generalists and secondary teachers are subject specialists. Teachers are generally employed by the *Land*. In 1999, teaching staff in primary and secondary education represented 1.9 per cent of the total labour force.

Italy

Administration

35 Overall responsibility lies with the Ministry of Education, University and Research, which is represented at local level by regional and provincial education offices. In 1999, public funding accounted for 91.4 per cent of expenditure on educational institutions. From the year 2000-01, all schools have autonomy in the fields of administration, organisation, pedagogy, research, experimentation and development. At the higher education level, universities are private sector institutions, promoted and managed by bodies and private citizens. A technical inspectorate, answerable to the Ministry, operates at national and regional level and supervises the educational system as a whole.

Pre-primary education

36 Day-care centres or crèches are available for children up to the age of three. From then on, children can attend nursery school, which is the first stage of the schooling system. Nursery schools are free of charge.

Compulsory education (primary and lower secondary)

37 The general curriculum is nationally determined and adapted to local needs by each school. Compulsory education in public institutions is free of charge, but in lower secondary school pupils have to buy their own textbooks. In 1999, 1 per cent of primary and secondary students attended government-dependent private institutions and 6 per cent attended independent private institutions.

Upper secondary and post-secondary education

38 There are four types of education: classical, artistic, technical and vocational. Fees are payable but students in state schools may be exempt or receive financial support depending on their family income. Central government determines basic curricula for each type of education and gives guidance on teaching methods.

Higher education

39 There are two main types of higher education. Universities offer a range of degree courses and diplomas, some of which qualify students for various professions. Non-university higher education is offered by various institutions, each of which has its own particular structure, regulations and organisation. Most universities charge enrolment fees and some also charge special fees. In 1999, public sources accounted for 86.5 per cent, and private sources accounted for 13.5 per cent, of expenditure on tertiary educational institutions. Publicly funded student support (scholarships and other grants) accounted for 16.9 per cent of public expenditure on tertiary education, equivalent to 0.14 per cent of GDP.

Teachers

40 Teachers in nursery and primary school must obtain the degree *diploma di laurea*. A two-year post-graduate course is necessary for secondary school teachers. Primary teachers are generalists and secondary teachers are subject specialists. In 1999, teaching staff in primary and secondary education represented 2.9 per cent of the total labour force.

Japan

Administration

41 Overall responsibility lies with the Ministry of Education. In cities, towns and villages, boards of education administer local education, under the guidance of regional boards of education. These regional boards report to the Minister of Education. In 1999, public funding accounted for 75.6 per cent of expenditure on educational institutions.

42 Japan supports a wide-range of academic institutions outside of the school system. This network consists of home-tutors, correspondence courses and exam preparation schools, and is collectively referred to as *juku* by Japanese parents and students.

Pre-primary education

43 Education prior to primary education is provided at kindergartens and day-care centres. Public and private day-care centres will take children from less than a year old up to five-years-old. Fees are charged.

Compulsory education (primary and lower secondary)

44 Compulsory education comprises attendance at elementary and lower secondary or secondary school. The Ministry of Education defines the elementary and junior high school curricula, although teachers have a degree of autonomy at high school. School fees are not charged in public institutions, but there is a charge for textbooks. In 1999, 10 per cent of primary and secondary students attended independent private institutions.

Upper secondary and post-secondary education

45 Upper secondary schools are divided into three types: general; vocational; and combined comprehensive. The first year of senior high school is devoted to general education for all students. Other institutions that offer secondary and post-secondary education include colleges of technology, specialised training colleges and schools for the blind, deaf and other disabilities. Fees are payable for post-secondary education.

Higher education

46 Higher education is provided by colleges and universities, junior colleges, and special training schools. Colleges and universities provide a range of four-year courses. Junior colleges, the majority of which are private institutions, generally offer two-year vocational courses. Higher education institutions charge tuition fees. In 1999, public sources accounted for 44.5 per cent, and private sources accounted for 55.5 per cent of expenditure on tertiary educational insitutions. Data are not available for publicly funded student support.

Teachers

47 Teachers are hired by the local or regional boards and are rotated through the schools on a pre-determined schedule. Teachers must obtain a university degree. Prospective teachers must also pass a highly competitive prefectural qualifying exam. Once hired, new teachers are required to undergo various in-service training sessions during their first years in the school system. In 1999, teaching staff in primary and secondary education represented 1.5 per cent of the total labour force.

New Zealand

Administration

48 The Ministry of Education is responsible for the regulation and funding of education. A board of trustees, comprising elected parent and community volunteers, the school principal and a staff representative, governs each state school. The Ministry has local offices, which support school boards. The Education Review Office, a government department, is responsible for evaluating all New Zealand schools and early childhood services. Data on the relative proportion of public and private investment in New Zealand's educational institutions are not available.

Pre-primary education

49 Early childhood services include kindergartens, childcare centres, playcentres, and home-based care, most of which are administered by voluntary agencies with Government assistance. It is available to children under five years of age through a wide range of services. Childcare centres and playcentres charge a fee, whereas kindergarten's ask parents to help out at some sessions and to help with fundraising or committee work.

Compulsory education (primary and lower secondary)

50 Compulsory education is divided into primary, intermediate and secondary schooling. The Ministry of Education decides the scope of the curriculum. It has responsibility for setting national curriculum objectives within the national guidelines. Schools and teachers make the decisions as to what will be learned and taught in order to meet these objectives. Compulsory education in public institutions is free of charge. In 1999, 1 per cent of primary and secondary students attended government-dependent private institutions and 5 per cent attended independent private institutions.

Upper secondary and post-secondary education

51 Upper secondary education is provided by secondary schools, area schools and colleges. Many students transfer to colleges to complete their upper secondary education even though the colleges charge fees. Post-secondary education is provided by polytechnics that offer a range of vocational and technical training, and charge tuition fees.

Higher education

52 Higher education is provided by universities, polytechnics and colleges of education. The universities provide a broad range of degree courses that are subject to tuition fees. The polytechnics, some of which are named institutes of technology, are state funded and provide education and training at many levels, from introductory studies to full degree programmes. Colleges of education provide specialised training for teachers. Data are not available on the relative proportions of public and private expenditure on tertiary educational institutions. In 1999, student support (scholarships and other grants) accounted for 22.2 per cent of public expenditure on tertiary education, equivalent to 0.27 per cent of GDP.

Teachers

53 Initial teacher training generally involves a four-year Bachelor of Education degree course or a bachelor's degree followed by a one-year Postgraduate Certificate in Education. In 1999, teaching staff in primary and secondary education represented 2.6 per cent of the total labour force.

Scotland

Administration

54 The First Minister for Scotland is responsible for the overall supervision and development of educational service. Day-to-day responsibility for education is delegated to the Minister for Education and the Minister for Enterprise and Lifelong Learning, each supported by a department of the Scottish Executive. Further and higher education institutions are autonomous bodies funded by the Scottish Executive through two funding councils. The First Minister is advised by Her Majesty's Inspector of Schools and the national bodies dealing with the development of the curriculum and public examinations. In 1999, public funding accounted for 85.9 per cent of expenditure on educational institutions in the United Kingdom.

Pre-primary education

55 Attendance at pre-primary level is optional. A free nursery place is to be made available for all children whose parents want it in the two years before they are due to start primary school. Education is provided in public, private and voluntary centres.

Compulsory education (primary and lower secondary)

56 The curriculum is not determined by statute or regulation but by advice from the Scottish Executive Education Department in various curriculum documents. In 2001, regulations were introduced to ensure classes in the first three years will have a maximum of 30. Compulsory education in public institutions is free of charge. In 1999, 31 per cent of the United Kingdom's primary and secondary students attended government-dependent private institutions and 4 per cent attended independent private institutions.

Upper secondary and post-secondary education

57 Secondary schools and further education colleges provide post-compulsory education. Vocational training is also offered by independent trainers and by employers in the workplace. Upper secondary and post-secondary education is free of charge in state institutions.

Higher education

58 Nineteen universities and six other education institutions provide higher education. All further education colleges also offer courses at higher education level. All major higher education institutions are autonomous bodies and charge tuition fees. In 1999, public sources accounted for 73.9 per cent, and private sources accounted for 26.1 per cent, of expenditure on tertiary educational institutions in the United Kingdom. Publicly funded student support accounted for 36.4 per cent of public expenditure on tertiary education (23.1 per cent on scholarships and other grants and 13.3 per cent on student loans), equivalent to 0.39 per cent of GDP.

Teachers

59 The local authority employs schoolteachers. Initial teacher training for primary and secondary teachers involves a four-year education degree or a bachelor's degree and one-year Postgraduate Certificate in Education. In 1999, teaching staff in primary and secondary education in the United Kingdom represented 2.4 per cent of the total labour force.

Sweden

Administration

60 The Ministry of Education and Science has overall responsibility for education and sets the framework for education at all levels but the municipalities are responsible for providing and operating schools at basic, secondary and adult education levels. The universities and university colleges are responsible for providing and operating higher education. In 1999, public funding accounted for 97.0 per cent of expenditure on educational institutions. The National Agency for Education is responsible for monitoring, evaluation and supervision of Swedish schools, while the National Agency for Higher Education is responsible for evaluation and supervision of higher education institutions.

Pre-primary education

61 The municipalities are required to provide pre-school activity for all children aged one to five whose parents work or study. This is generally provided in pre-schools, but also by childminders. Municipal pre-school activity is jointly financed by the municipal budget and parental fees, usually income-related. In 2002, a maximum childcare charge was introduced in most municipalities.

Compulsory education (primary and lower secondary)

62 Within the curricula framework, determined at national level, teachers and institutions have freedom to determine teaching methods and select teaching materials. Compulsory education in public institutions is free of charge. In 1999, 2 per cent of primary and secondary students attended government-dependent private institutions.

Upper secondary and post-secondary education

63 All upper secondary education programmes take place in the *Gymnasieskola*, which is free of charge. Teachers and schools work within the nationally determined framework.

Higher education

64 Higher education is provided in universities and university colleges. It is government funded and, with a few exceptions, there are no tuition fees for Swedish or foreign students. In 1999, public sources accounted for 88.4 per cent, and private sources accounted for 11.6 per cent, of expenditure on tertiary educational institutions. Publicly funded student support accounted for 30.4 per cent of public expenditure on tertiary education (10.1 per cent on scholarships and other grants and 20.3 per cent on student loans), equivalent to 0.63 per cent of GDP.

Teachers

65 To be permanently employed, a teacher must complete a study programme at a university or university college. An applicant not fulfilling this requirement can be appointed for a maximum of 12 months only. In July 2001, a new integrated teacher training degree was established. The degree varies in length, from three to five and a half year of full time study, depending on the chosen area and level. In 1999, teaching staff in primary and secondary education represented 2.8 per cent of the total labour force.

United States

Administration

66 The United States does not have a national school system. In most states, education policy and legislature is developed by the State Board of Education and while the State Department of Education, headed by the superintendent (or commissioner), is responsible for implementing policy and overseeing the state's school districts. The federal government provides guidance and funding for federal education programmes, in which both public and private schools take part, and the United States Department of Education oversees these programmes. In 1999, public funding accounted for 75.0 per cent of expenditure on educational institutions.

Pre-primary education

67 Pre-primary education is provided by public and private kindergartens, elementary schools, day care centres, child care services (including home services), and charitable organisations. Some states pay a strong central role in the selection of learning materials for their students, whereas in others decisions are left to local school officials. Fees are applicable.

Compulsory education (primary and lower secondary)

68 Compulsory education comprises attendance at elementary school, middle or junior high school, and high school. States establish their own guidelines and policies for the curriculum while considerable freedom is often left to local and school authorities. Compulsory education in public institutions is free of charge. In 1999, 11 per cent of primary and secondary students attended independent private institutions.

Upper secondary and post-secondary education

69 Vocational and technical education is offered at both the secondary and post-secondary levels. Post-secondary education providers include public community colleges and vocational/technical institutes as well as private trade and technical schools, employers, and independent training services. Community colleges offer up to two years of academic instruction beyond secondary school, and provide a transitional link between high school and university. Tuition fees are charged by upper secondary and post-secondary education institutions.

Higher education

70 Higher education is provided by universities, four-year colleges and institutes of technology. These all offer various degree programmes. Public universities, colleges and institutes usually charge tuition fees. In 1999, public sources accounted for 46.9 per cent, and private sources accounted for 53.1 per cent of expenditure on tertiary educational institutions. Publicly funded student support accounted for 19.2 per cent of public expenditure on tertiary education (11.1 per cent on scholarships and other grants and 8.1 per cent on student loans), equivalent to 0.26 per cent of GDP.

Teachers

71 Every state has its own requirements for teachers. Teachers, however, must complete a bachelor's degree, an approved teacher training program, a prescribed number of subject and education credits and supervised practice teaching. In 1999, teaching staff in primary and secondary education represented 2.2 per cent of the total labour force.