Chapter 3

MAKING TEACHING AN ATTRACTIVE CAREER CHOICE

Summary

The teaching profession needs to be competitive with other occupations in attracting talented and motivated people. This chapter reviews the trends that are raising concerns about teaching's attractiveness as a career choice, reviews the evidence on the main causal factors involved, and develops policy options for countries to consider.

There are two broad concerns about the supply of teachers. One relates to teacher numbers: many countries are either currently experiencing, or will shortly face, a quantitative shortage of teachers. There are particular concerns about teacher shortages in areas such as mathematics, science, ICT and languages. Teacher shortage problems seem to be most acute in schools serving disadvantaged or isolated communities. The other concern is more qualitative, and reflects trends in the composition of the teacher workforce in terms of academic background, gender, knowledge and skills. The ageing of the teaching workforce is compounding recruitment concerns. On average, 26% of primary teachers and 31% of secondary teachers in OECD countries are aged over 50 years, and many will retire in the next few years.

There are a number of countries where teaching is held in high regard as a career, and there are many more qualified applicants than teaching vacancies. The experience of such countries helps counter the view that teaching is a profession in long-term decline. Counter evidence is also supplied by those countries that have experienced an upturn in demand for teaching jobs in recent years.

Policy responses are needed at two levels. The first seeks to improve teaching's general status and competitive position in the job market, and broaden sources of teacher supply to include well-qualified people from other careers and former teachers. The second involves more targeted responses to particular types of teacher shortages, including stronger incentives for teachers with skills that are in short supply, and encouragement and support for teachers to work in challenging schools or difficult locations.

Those countries experiencing teacher over-supply have the opportunity to be much more selective about those who are employed. Initiatives underway include a broadening of teacher selection criteria and well-structured induction and probationary processes to ensure that the best candidates get the available jobs.

A fundamental requirement for providing quality teaching in schools is that motivated people with high-level knowledge and skills choose to become teachers. The teaching profession needs to be competitive with other occupations in attracting talented people. This chapter reviews the trends and developments that are raising concerns about teaching's attractiveness. It then examines the policy tools that are potentially available to attract able people into teaching, reviews the evidence on the main causal factors involved, and discusses those that are most open to policy influence. The chapter includes descriptions of policy initiatives in participating countries, and develops policy options for countries to consider.

In terms of the model of the teacher labour market outlined in Section 2.5, the chapter focuses on those who are currently not in the teaching profession: potential new entrants to teaching and potential re-entrants to teaching. Issues to do with the attractiveness of continuing in teaching – including job satisfaction, working conditions and career structure – are discussed in Chapter 6.

3.1. Concerns about Teaching's Attractiveness

3.1.1. Countries have quantitative and qualitative concerns – which are interrelated

The Country Background Reports express two broad concerns about the supply of teachers. One relates to teacher numbers: many countries are either currently experiencing, or will shortly face, a quantitative shortage of teachers. For example, based on current trends, the Netherlands estimates that the number of unfilled teacher vacancies in primary schools will more than double in three years: from 2 800 full-time equivalent teachers in 2003 to 6 000 teachers in 2006.[1] The other concern is more qualitative in nature, and reflects trends in the composition of the teacher workforce, and trainee teachers, in terms of academic background, gender, competencies and so on.

Quantitative and qualitative concerns about teacher supply are interrelated. In the short run, school systems facing quantitative teacher shortages typically respond by one of two means, both of which raise quality concerns:

– *Lowering qualification requirements.* If a qualified applicant is not available to fill a teaching position, a less qualified applicant may be hired ("out-of-licence" teaching) or other teachers may be required to teach outside their areas of qualification ("out-of-field" teaching). In addition, school systems facing shortages may be compelled to keep employing teachers with poor performance records; or

– *Raising teaching loads.* The number of teachers required can be reduced by increasing the workloads of teachers, for example, by increasing class sizes and/or by increasing the average number of classes assigned to each teacher.

The absence of quantitative teacher shortfalls is no guarantee that countries do not face significant challenges. For example, Korea, a country that does not face teacher shortages, nevertheless expresses concern that in secondary education "the serious oversupply of

[1] Unless otherwise indicated, references to country data and developments are taken from the background reports prepared by countries participating in the OECD teacher policy project. To save space, the background reports are not individually cited. Appendix 1 provides information on the background reports, their authors, and availability.

teacher candidates [means that] many excellent high-school graduates avoid entering teacher education institutions". There can be shortages of teacher supply in qualitative as well as quantitative terms.

Such concerns are expressed not only by policy makers and official agencies, but also by teachers themselves. As discussed below in the section on the status of teaching, surveys of teachers consistently report concern about negative public perceptions of teaching, and the impact this will have on attracting talented new people into the profession.

It is important to note, however, that there are a number of countries where teaching still seems to be held in high regard as a career, and there are many more qualified applicants than teaching vacancies. The experience of such countries helps counter the view that teaching is a profession in long-term decline. Counter evidence is also supplied by those countries that have experienced an upturn in demand for teaching jobs in recent years. Such examples are discussed in the sections below.

3.1.2. There are only limited international data on teacher shortages

At the international level there is no clear, universally accepted measure of what actually constitutes a teacher shortage. Countries differ substantially in how they define a "qualified" teacher and the extent to which the rules requiring full qualifications can be relaxed in order to staff schools.

Two indicators are commonly used to measure the extent of teacher shortages but each of these has its limitations (Wilson and Pearson, 1993):

– *Vacancy rates:* The simplest measure is the number of unfilled vacancies for teachers. Despite its appeal, this measure has limitations. Very few vacancies cannot be filled in some way (e.g. through unqualified or temporary staff). Further, some schools might not create vacancies if they are unconvinced that a post will be filled by an appropriate teacher. However, even though a low number of unfilled vacancies does not necessarily mean there are few shortages, a high number provides strong evidence of shortages. This is especially so if information is also available on the number of "difficult-to-fill" vacancies, those which have been unfilled for a significant period of time, or the proportion of positions filled by teachers who are not fully qualified.

– *Hidden shortages:* These are said to exist when teaching is carried out by someone who is not fully qualified to teach the subject ("out-of-field" teaching) and is usually measured as the proportion of teachers teaching a subject in which they are not qualified. Nevertheless, this measure also has limitations as out-of-field teaching might result not only from shortages but also from the way schools are managed. In fact, many principals find that assigning teachers to teach out of their fields is often more convenient, less expensive or less time-consuming than the alternatives (Ingersoll, 1999).

Comparable international data on these two indicators are not available. However, a number of individual countries have national data which, although not strictly comparable, can help to construct at least part of the international picture. The OECD project has collected further information from participating countries to help fill some of the gaps. In addition, two major recent OECD surveys – the 2000 Programme for International Student Assessment (PISA) and the 2001 International Survey of Upper Secondary Schools (ISUSS) – collected information from secondary school principals on various aspects of

teacher shortages in a wide range of countries. All of these data sources are used below to provide different perspectives on concerns about teacher supply.[2]

3.1.3. In some countries school principals report serious recruitment difficulties

The 2001 ISUSS survey indicates that secondary school principals report major difficulties in recruiting teachers in various subject areas (Figure 3.1A). The area in which the reported difficulties are greatest is computer sciences with 49% of upper secondary students attending schools where the principal reported that hiring fully qualified teachers is difficult. Other problematic subject areas are mathematics (33%), technology (33%), foreign languages (32%) and sciences (30%). The results indicate large differences among countries in the extent of recruitment difficulties. Among the countries surveyed, principals in Belgium (Flemish Community) and Switzerland reported high levels of recruitment difficulties in computer sciences/information technology (Figure 3.1B) and mathematics (Figure 3.1C), Hungary and Finland in computer sciences, and Denmark and Ireland in mathematics. By contrast, France, Italy, Korea, Mexico, Portugal and Spain seem to have a relatively large pool of qualified candidates for teaching positions.

The 2000 PISA results showed that in half of the OECD countries, a majority of 15-year-olds attend schools where principals believe that student learning is hindered by a teacher shortage or inadequacy. Figure 3.2A summarises the results. In Germany, Greece, the United Kingdom, Mexico, Sweden, Finland, Norway and Iceland at least two-thirds of students were enrolled in schools where principals reported this concern. In contrast, at least two-thirds of students in Spain, Austria, Switzerland, Chile, France, Poland, the Czech Republic and Hungary were enrolled in schools where principals thought there was no adverse effect of a teacher shortage/inadequacy on student learning.[3]

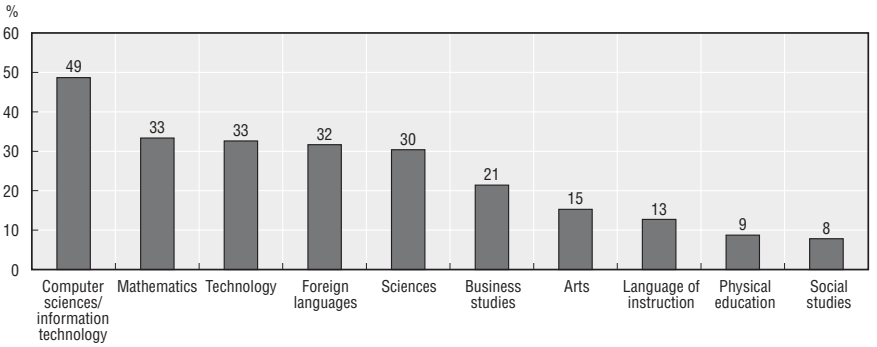
Figure 3.2B indicates that school principals generally perceived a teacher shortage/inadequacy as more problematic for student learning in mathematics and science than in the language of instruction (the three areas assessed in PISA 2000). This is particularly the case in Australia, Chile, Iceland, the Netherlands, New Zealand, Norway, the United Kingdom and the United States. These problems in regard to mathematics and science teachers are broadly consistent with those reported earlier from the ISUSS survey, as well as the information provided through the Country Background Reports. In Norway, for example, where more than 50% of the teachers in natural sciences at upper secondary level are aged over 50 years and relatively few students with a science background enrol in teacher education, there are concerns about the future of these subject areas in schools. Even countries like Finland, which do not have a general teacher shortage, express concern that enrolments in mathematics and science teacher education are well below the necessary levels.

[2] The OECD is working with countries to improve international data on teachers through the Indicators of Education Systems (INES) project. Chapter 7 discusses priorities for future data development.

[3] Such results could be influenced by differences in how principals interpret a "teacher shortage/inadequacy" and assess its effects. For example, principals in countries generally less affected by teacher shortages may consider a recent or modest level of shortages as having an important impact on student learning, whereas principals in countries with more long-term shortage problems may see things differently.

Figure 3.1A. **Average perceived difficulty of hiring qualified teachers in various study areas**

Cross-country mean percentage of upper secondary students attending schools where the principal reported that hiring fully qualified teachers is difficult, 2001

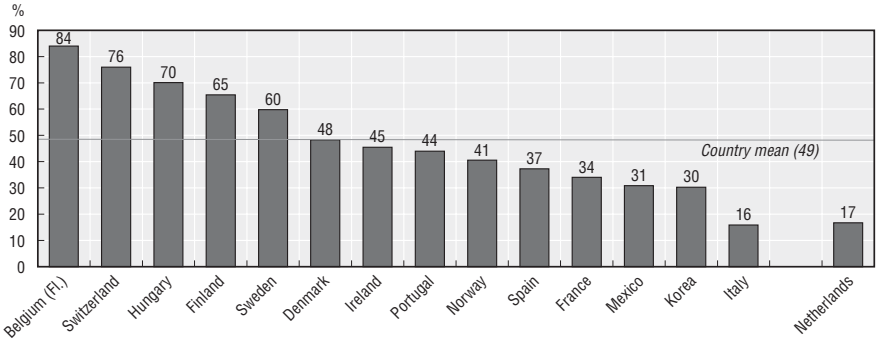


Note: Proportions by study area are calculated for cross-country means. The countries which participated in the ISUSS survey were: Belgium (Fl.), Denmark, Finland, France, Hungary, Ireland, Italy, Korea, Mexico, the Netherlands, Norway, Portugal, Spain, Sweden and Switzerland. the Netherlands is not included in the calculation of cross-country means as it did not meet international sampling requirements.

Source: OECD International Survey of Upper Secondary Schools (ISUSS) database, 2003. Published in OECD (2003) and OECD (2004b).

Figure 3.1B. **Average perceived difficulty of hiring qualified teachers in computer sciences/information technology, by country, 2001**

Mean percentage of upper secondary students attending schools where the principal reported that hiring fully qualified teachers in computer sciences/information technology is difficult

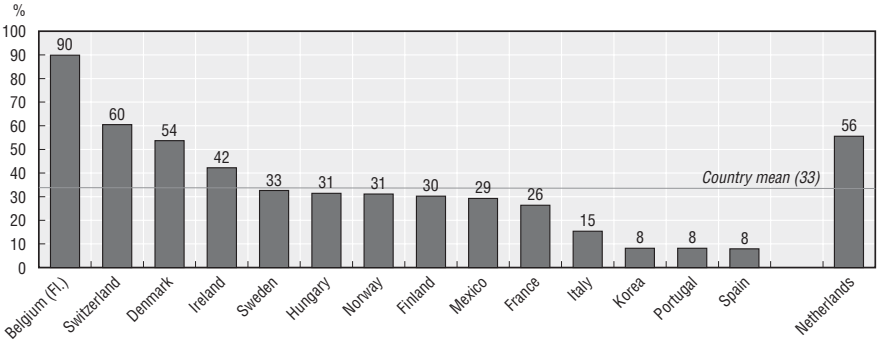


Note: For the Netherlands, the response rate is too low to ensure comparability. The Netherlands is not included in the calculation of the country mean.

Source: OECD ISUSS database, 2003.

Figure 3.1C. **Average perceived difficulty of hiring qualified teachers in mathematics, by country, 2001**

Mean percentage of upper secondary students attending schools where the principal reported that hiring fully qualified teachers in mathematics is difficult

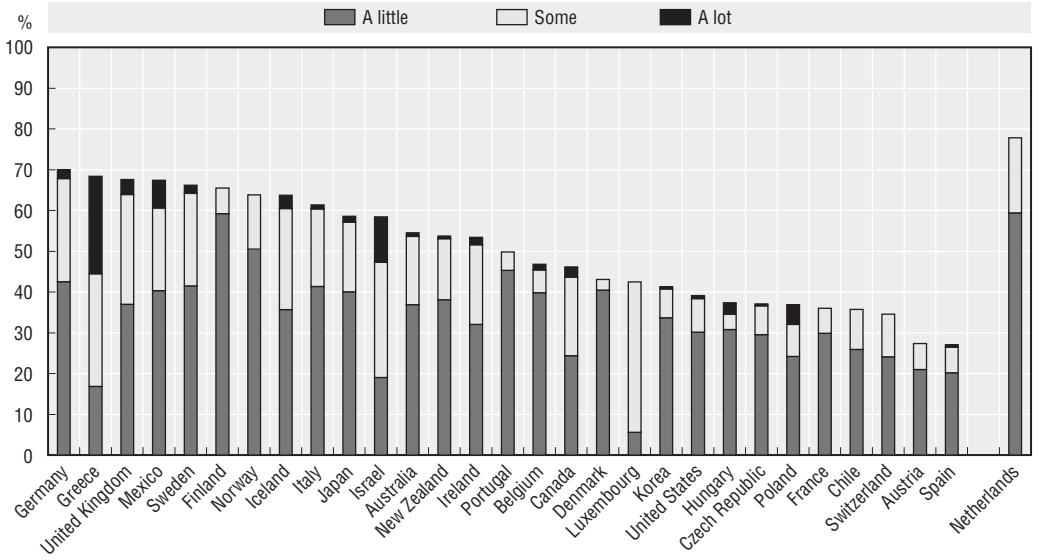


Note: For the Netherlands, the response rate is too low to ensure comparability. The Netherlands is not included in the calculation of the country mean.

Source: OECD ISUSS database, 2003.

Figure 3.2A. **Principals' perceptions of whether a shortage/inadequacy of teachers hinders student learning, 2000**

Percentage of 15-year-old students enrolled in schools where principals report that learning is hindered by a shortage/inadequacy of teachers to the following extent:

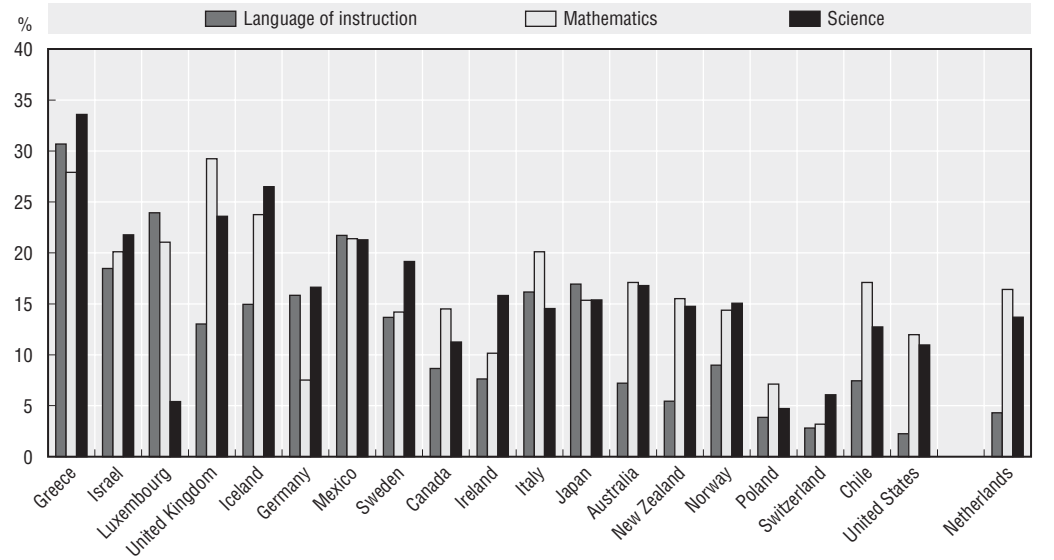


Note: In providing their perception of the extent to which the learning of 15-year-old students is hindered by a shortage/inadequacy of teachers, principals are expected to answer "Not at all", "A little", "Some" or "A lot". For the Netherlands, the response rate is too low to ensure comparability.

Source: OECD PISA Database, 2001.

Figure 3.2B. **Principals' perceptions of whether a shortage/inadequacy of teachers hinders student learning, by subject area, 2000**

Percentage of 15-year-old students enrolled in schools where principals report that learning is hindered "to some extent" or "a lot" by a shortage/inadequacy of teachers in the following subject areas:



Note: Only countries for which the perception of principals of whether shortages in general hinder student learning is above a certain threshold are considered. The threshold is defined as the sum of "Some" or "A lot" responses being at least 9% for shortages in general (indicator shown in Figure 3.2A). Countries are ordered, from left to right, according to the value of that sum. For the Netherlands, the response rate is too low to ensure comparability.

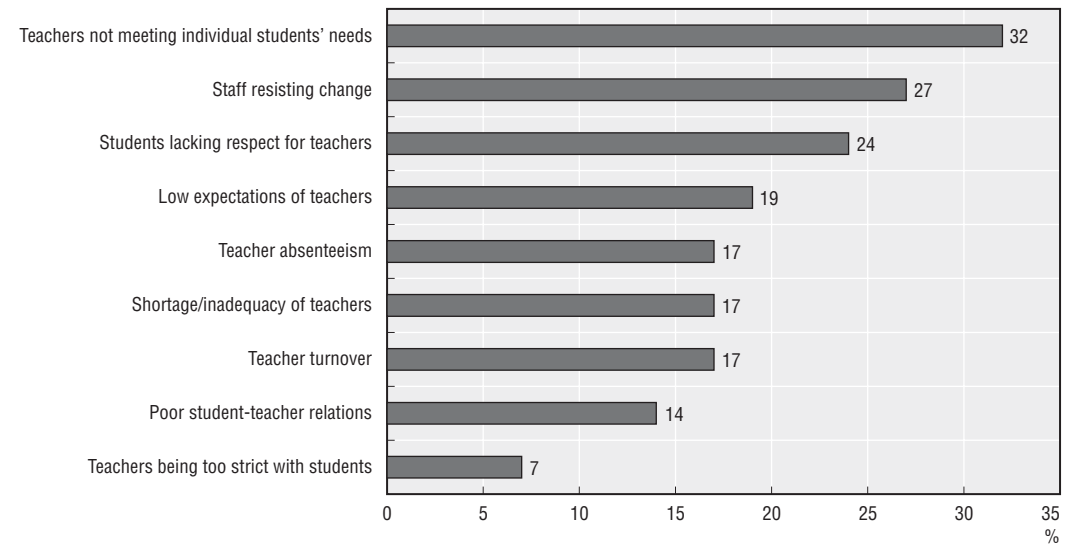
Source: OECD PISA Database, 2001.

Analysis suggests that there is a relationship, albeit modest, between a teacher shortage/inadequacy as perceived by principals and student performance on the PISA tests. In general, in schools where principals report that student performance is hindered by a shortage or inadequacy of teachers, student performance is lower (OECD and UNESCO, 2003).[4] Notably, this relationship appears to be stronger for countries where teacher shortages have been identified as more severe, including Australia, Belgium, Sweden, Switzerland, the United Kingdom, and the United States.

The 2000 PISA survey also asked principals for their perceptions of the impact of a range of other aspects relating to teachers. In most countries, school principals perceived that teacher shortage/inadequacy were not among the main teacher-related factors directly hindering student learning. Teachers not meeting individual students' needs, staff resisting change, students lacking respect for teachers and low expectations of teachers emerged as larger concerns (Figure 3.3). These results suggest that some school principals are more concerned about qualitative than quantitative shortfalls in the teacher workforce. Of course, there may be knock-on effects of teacher shortages that influence these other factors. For example, where schools have to rely on short-term replacement teachers, or unqualified teachers, this could worsen discipline problems and student respect for teachers.

Figure 3.3. **Principals' perceptions of the extent to which teacher-related factors hinder student learning, country mean, 2000**

Percentage of 15-year-old students enrolled in schools where principals report that learning is hindered "to some extent" or "a lot" by the following teacher-related factors:



Note: In providing their perception of the extent to which the learning of 15-year-old students is hindered by the teacher-related factors indicated above, principals are expected to answer "not at all", "a little", "some" or "a lot". The country mean is based on Chile, Israel and OECD countries (excluding the Netherlands as a result of its low response rate, and the Slovak Republic and Turkey which did not take part in PISA 2000).

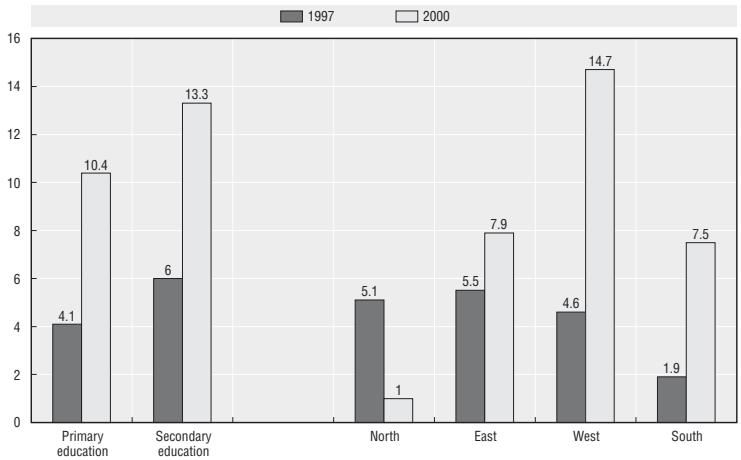
Source: OECD PISA Database, 2001.

[4] These results show only that the two factors are associated, not that one causes the other. It is possible that certain other variables (*e.g.* the socio-economic context of the school) could lead to both lower student scores and to teacher shortages. To explore potential causality, further (multivariate) analysis is needed.

3.1.4. Unfilled vacancies are evident in some countries

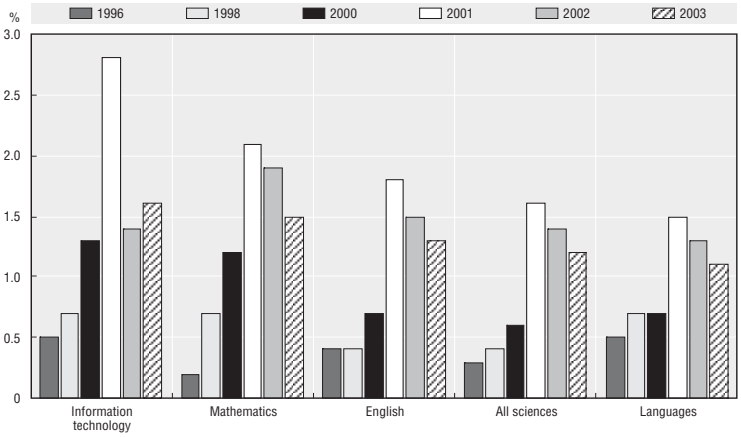
In the absence of international data on unfilled teacher vacancies, national studies provide indications of the concerns. In the Netherlands, about one in seven regular new teaching positions in secondary schools were not filled when the 2000 school year started, more than twice the rate observed in 1997 (Figure 3.4A). In England in 2003, 1.6% of all secondary teaching posts in information technology were not filled by January, some four months after the start of the school year (Figure 3.4B). There were slightly lower unfilled vacancy rates of between 1.0-1.5% in mathematics, English, sciences and languages in 2003. Encouragingly, however, the English data indicate a reduction of unfilled vacancy rates from their 2001 peak year.

Figure 3.4A. **Percentage of unfilled teaching vacancies, the Netherlands, by level of education and region, 1997 and 2000**



Note: Figures correspond to the percentage of regular vacancies unfilled at the beginning of the school year, relative to the total number of regular vacancies before the school year.
Source: Ministry of Education, Culture and Science, the Netherlands (2002).

Figure 3.4B. **Percentage of unfilled vacancies, England, by subject area, secondary schools, 1996 to 2003**



Note: Figures correspond to unfilled vacancies in January as a percentage of teachers in post for the respective subject area in publicly funded secondary schools. The 2001 vacancy figures are likely to have been overstated. Results from a telephone survey of vacancies at around the same time showed a 10-20% increase in secondary vacancies compared to 2000. The 2002 survey introduced data on temporarily filled posts across all grades. This helped schools and local authorities interpret the vacancy definition more accurately, and provides additional information on posts that are not permanently filled.
Source: Department for Education and Skills (2003, 2004).

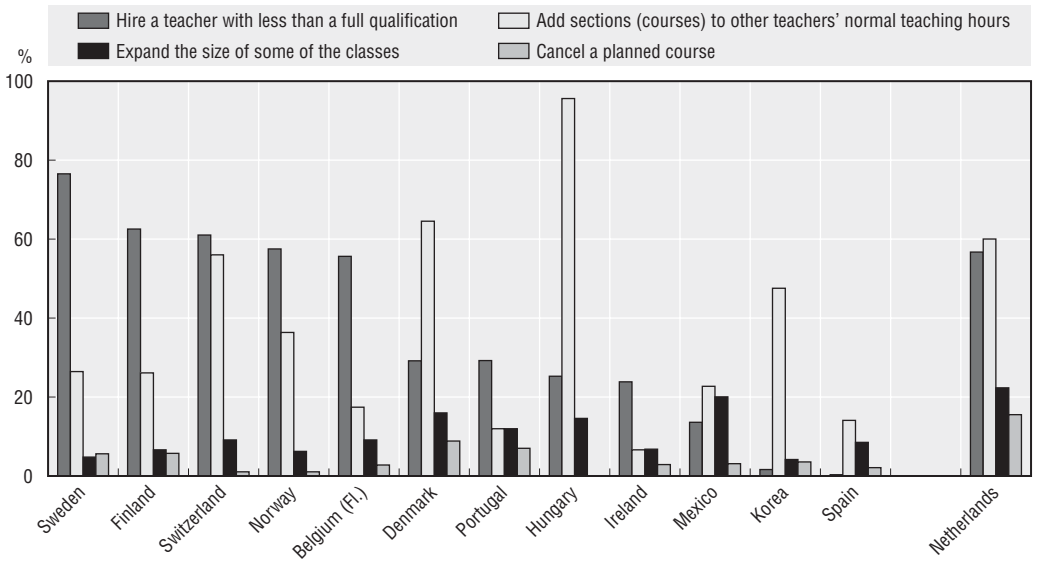
In Belgium (Flemish Community) in the 1999/2000 school year, there were only 0.75 teachers in lower secondary education available for every interim vacancy. In upper secondary education, the ratios were different, with 2.7 teachers available for every interim vacancy. However, the candidate teachers did not always have the subject qualifications required, and unfilled vacancies persisted in subjects such as mathematics, French, Dutch and technical education.

The Flemish data underline the fact that teacher shortages are usually spread unevenly throughout school systems. Figure 3.4 showed that unfilled vacancy problems were not universal in the Netherlands and England either, but were greater in secondary than primary education (the Netherlands), in the more urbanised western areas of the Netherlands, and in information technology and mathematics than in other subject areas (England).

As noted earlier, it seems rare that a significant proportion of vacant teaching positions remains unfilled. Results from the 2001 ISUSS survey show that countries generally hire teachers who are not fully qualified, or increase current teachers' workloads, when facing recruitment difficulties (Figure 3.5). Hiring policies, and internal school practices, ensure that teachers are present to staff almost all classrooms. Therefore, data on unfilled teaching vacancies are likely to understate the true extent of the problem, and not fully reflect the teaching quality problems that may ensue.

Figure 3.5. **Methods used to cover teacher vacancies, 2001**

Percentage of upper secondary students attending schools that use the following methods to respond to teacher vacancies, as reported by school principals



Note: Countries are ranked in descending order of the percentage of upper secondary students attending schools where the principal reported that they hired a teacher with less than a full qualification. The Netherlands did not meet international sampling requirements.

Source: OECD International Survey of Upper Secondary Schools (ISUSS) database, 2003. Published in OECD (2003) and OECD (2004b).

Table 3.1A. **Teachers without full qualifications**

Percentage of not fully qualified teachers, primary and secondary public schools, 2001

Below 4%		Between 4% and 10%	Above 10%
Canada (Qb.)	Japan	Belgium (Fl., primary ed.)	Belgium (Fl., secondary ed.)
France	Korea	Chile	Finland
Germany	Spain	Ireland (primary)	Israel
Greece	England		Slovak Republic
Hungary	Scotland		Sweden
Italy	Wales		United States

General note: This table was derived from data supplied by countries participating in the project. Data were requested in areas that are not already available through the OECD's Indicators of Education Systems (INES) project. Countries drew on existing data sets to meet the request, and did not engage in any new data collections. Not all countries were able to supply data in the form requested. The table should be interpreted as providing broad indications only, and not strict comparability across countries. Figures are based on head counts.

Definition: (for the purpose of supplying data in this area, countries were requested to follow this definition): A fully qualified teacher is a teacher who meets the minimum qualifications set by education authorities for employment as a public school teacher at the level of education concerned.

Specific notes: The reference year is 2002 for Finland and 2000 for Canada (Qb.) and the United States. Data for Belgium (Fl.), Finland and Hungary include both public and private institutions. Data for Belgium (Fl.), England and Wales refer to full-time equivalent teachers. For Japan only full-time teachers were considered.

Table 3.1B. **Teachers without full qualifications, by school sector**

Differences between primary and secondary public school teachers, 2001

Percentage of non-qualified teachers greater in primary schools	Similar percentage of non-qualified teachers	Percentage of non-qualified teachers greater in secondary schools
Japan	Canada (Qb.)	Belgium (Fl.)
Slovak Republic	Chile	Finland (in vocational schools)
	Korea	Israel
	United States	Italy
		Sweden

General note: See Table 3.1A.

Definition: See Table 3.1A for definition of fully qualified teacher. Percentages of non-qualified teachers are considered similar if the difference between them is either less than one fifth of the value of the lowest of the two or less than 1%.

Specific note: See Table 3.1A.

Table 3.1C. **Teachers without full qualifications, changes from 1995 to 2001**

	Decreased	Little change		Increased
Countries with 1995 percentage of non-qualified teachers below 5%		Canada (Qb.) France Greece Hungary	Japan Scotland Wales	Chile England Ireland Italy
Countries with 1995 percentage of non-qualified teachers above 5%	Israel Korea Slovak Republic	United States		Sweden

General note: See Table 3.1A.

Definition: See Table 3.1A for definition of fully qualified teacher. Little change occurs in the percentage of non-qualified teachers between 1995 and 2001 either if the change is less than one fifth of the 1995 value or if the change in absolute value is less than 0.5%.

Specific notes: See Table 3.1A. The 1995 reference year is 1994 for the United States, 1996 for England and Ireland, 1997 for Italy, and 1998 for Chile and Korea.

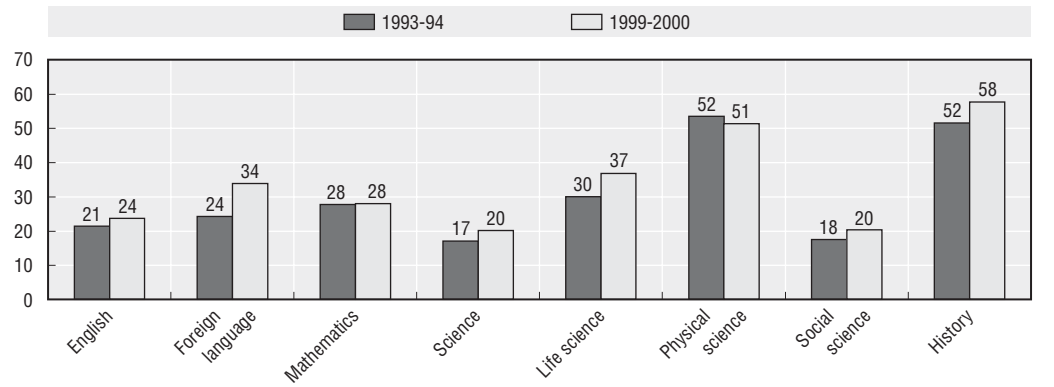
3.1.5. Some countries have a high proportion of unqualified and "out-of-field" teachers

The proportion of fully qualified teachers provides another indication of teacher shortages. As indicated in Table 3.1A, six of 21 countries reported that more than 10% of the teacher workforce in public schools did not hold the necessary minimum qualifications in 2001 (Belgium, Flemish Community, secondary schools; Finland; Israel; the Slovak Republic; Sweden; and the United States). Overall, the proportion of teachers lacking such qualifications tended to be greater in secondary schools than in primary schools (Table 3.1B). Notably, in only three of the 16 countries which supplied relevant data did the percentage of non-qualified teachers decrease between 1995 and 2001 (Israel, Korea and the Slovak Republic – see Table 3.1C). In eight countries there was little change between 1995 and 2001 in the percentage of teachers who lacked the necessary qualifications, but in five others the proportion increased.

The extent to which classes are taught by teachers who lack qualifications in the area concerned is another relevant indicator. Figure 3.6 shows, for United States high schools in 1999/2000, that at least 20% of the teachers in eight different subject fields did not have a degree (major or minor) in the subject they taught. The extent of out-of-field teaching was much higher in foreign languages (34%), life sciences (37%) and, especially, physical science (51%) and history (58%). In seven of the eight subject areas the proportion of teachers without a relevant degree had increased from 1993/94.

The Slovak Republic has put together the various measures of teacher qualifications to provide an overall indication of teacher supply concerns. In 2001 it was estimated that around 25% of primary classes, 30% of lower secondary classes, and 15% of vocational classes were taught by teachers who did not have teaching qualifications, or were teaching out-of-field, or who had already reached the official retirement age.

Figure 3.6. **Percentage of public high school (grades 9-12) teachers without a degree (*major* or *minor*) in course taught, United States (1993-94 and 1999-2000)**



Source: U.S. Department of Education (2002).

3.1.6. Shortages are associated with an inequitable distribution of teacher resources

There is evidence that in countries experiencing general teacher shortages, students in schools in remote or disadvantaged areas tend to find themselves in classes with the least experienced and qualified teachers. Teachers who work in schools with high concentrations of disadvantaged students often experience higher rates of attrition and turnover, which

raises concerns about the continuity of educational programmes in such schools. (Box 3.1 outlines recent initiatives in France to redress the problem of inexperienced teachers being heavily concentrated in disadvantaged schools.)

The connection between the distribution of teachers across schools and educational equity is particularly well documented in the United States. Lankford *et al.* (2002) show striking differences in the qualifications of teachers across schools in New York State. Low-income, low-achieving and non-white students, particularly those in urban areas, find themselves in classes with many of the least qualified teachers. In such cases salary variation rarely compensates for the difficulties of teaching in disadvantaged schools and, in some cases, contributes to the disparities.

Box 3.1. **Improving the distribution of teachers' skills and experience across schools in France**

France has moved to reduce the weight given to seniority in determining which candidates are appointed to teaching vacancies. This is intended to address the concern that beginning teachers were being mostly assigned to the more difficult and unpopular schools, with potentially adverse consequences for student learning and their own career development. Until recently, around two-thirds of recent graduates from initial teacher education started their career in a post classified as "difficult" – as a substitute teacher, or in a priority education zone (ZEP, *Zone d'éducation prioritaire*), or in a school located in a "difficult" area.

A series of initiatives has been implemented in order to improve the distribution of teachers' skills and experiences across schools:

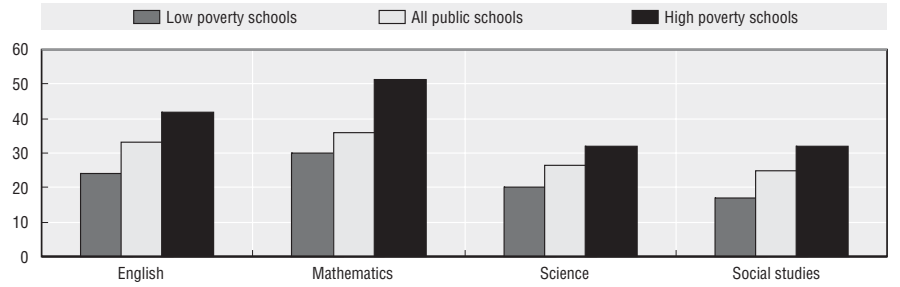
- the establishment of a salary bonus for teachers in schools which belong to a priority education zone, to encourage more experienced teachers to apply for vacancies;
- the creation of a number of "posts requiring specific qualifications" (*postes à exigences particulières*) in the suburban area around Paris with a series of benefits regarding placement, training and career progression;
- the granting to recent graduates from initial teacher education of "bonus" points which improves their chances of successfully applying for their preferred schools;
- the creation, in the priority education zones of Paris' suburbs, of special "group" teaching posts to which teacher trainees with well-developed strategies for improving school outcomes can jointly apply. In general, the teacher trainees are appointed to the post during their final year of initial teacher education, for a period of five years. The intention is to ensure that new teachers are better prepared for working in disadvantaged schools, that they develop skills in teamwork and project implementation, and that the schools have greater continuity of staffing.

These measures seem to be having a positive impact although they are still fairly limited in scope. Across France, the eight least popular *académies* (school regions), to which around 67% of all newcomers were once appointed in 1999, accounted for 58% of new teachers in 2000. The six most popular *académies* received 15% of new teachers in 2000 as opposed to 10% in 1999. The "posts requiring specific qualifications" introduced in 2001 attracted over 2,000 candidates for 700 vacancies, which made it possible to assign fully qualified teachers (rather than trainees) to 90% of them, but only two out of five appointees were experienced teachers.

These results are confirmed by Murphy *et al.* (2003) who used data from the 1999/2000 School and Staffing Survey conducted by the US Department of Education to find that urban schools and those with relatively high populations of minority and low-income students were more severely affected by teacher shortfalls. Ingersoll (2003) corroborates

these findings by showing that the proportion of secondary teachers without a degree (major or a minor) in the subject taught is highest in high poverty schools (Figure 3.7).

Figure 3.7. **Percentage of secondary teachers (grades 7-12) without a degree (*major* or *minor*) in subject taught, United States, 1999-2000**



Note: Low poverty refers to schools where less than 15% of the students receive publicly funded free or reduced price while *high poverty* refers to schools where over 80% do so.

Source: Ingersoll (2003).

Box 3.2. **Attracting teachers to remote and rural areas in Australia**

In Australia, schools in remote and rural areas have been experiencing difficulties in attracting and retaining teachers. To encourage teachers to teach and remain in those areas beyond the minimum required service period, special incentives and teacher education programmes are offered in most States, as illustrated by Queensland and New South Wales.

The Queensland Remote Area Incentive Scheme provides teachers who teach in remote and rural schools with financial benefits and support, including:

- Compensation benefits ranging from AUD$ 1 000 to 5 000 per year, plus an additional payment for dependants to offset the travel costs to certain districts.
- Incentive benefits ranging from $2 000 to $5 000 per year to encourage teachers to remain in rural and remote schools after the designated service period.
- Induction programmes for newly appointed teachers to assist preparing for service in rural and remote areas.
- Additional leave ranging from 5 to 8 days to cover leave to travel to major centres to conduct urgent personal business, including medical and dental appointments.

The New South Wales Department of Education has developed a pre-service teacher education programme, *"Beyond the (Great Dividing) Line"*, to provide students with first-hand experience of living and teaching in rural areas. Students in the second, third and fourth years of their initial teacher education visit rural areas and become guests of the schools for three days. In 2002 about 400 students from eight universities participated in the programme. Nineteen participants in the 2001 programme who completed their education in 2001 accepted permanent appointments in 2002 to "Beyond the Line" schools.

Boyd *et al.* (2003) argue that several features of US teacher labour markets increase the likelihood of an inequitable distribution of qualified teachers. First, the existence of a single salary schedule in most school districts makes it very difficult to raise salaries to attract more qualified teachers to hard-to-staff schools without also raising salaries in other schools. Second, the seniority-based recruiting method used in many districts encourages teachers in hard-to-staff schools to transfer to other schools after gaining some experience, thereby taking their on-the-job training with them. Third, the reliance on local property

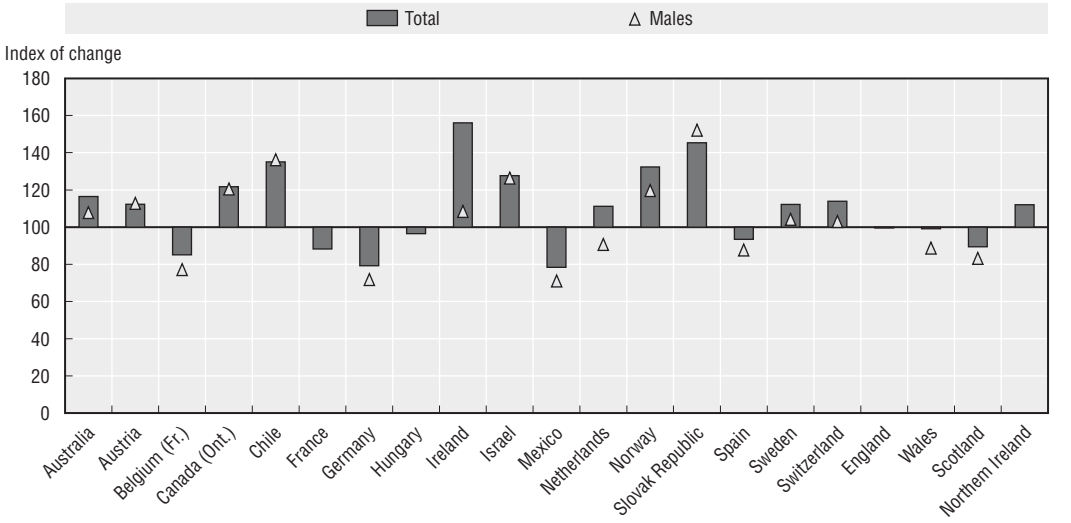
taxes for much school funding results in substantial differences between school districts in the capacity to pay for schools and teacher salaries.

The issues are not confined to the United States. For example, in Australia there are difficulties in attracting teachers to rural and remote areas and retaining them there beyond the minimum period required by employment contracts (see Box 3.2 for some recent policy responses). On the other hand, in the Netherlands the challenges of teaching in urban schools mean that the four largest cities have considerable problems filling teacher vacancies; in 2001 a quarter of the vacancies in those cities were not filled at the start of the school year, and around half the teachers are unqualified or underqualified. In the Slovak Republic, the poorest regions have the lowest proportions of qualified teachers. Hungary reports that, despite a general oversupply of teachers, primary schools, especially those with a high proportion of Roma students, often lack teachers with majors in some subject areas.

3.1.7. Some countries have concerns about attracting quality students to enter teacher education

Trends regarding student numbers in initial teacher education vary considerably across countries. Data supplied by countries participating in the project reveal that in just over half the cases there has been an increase in the number of students entering initial teacher education programmes (Figure 3.8). Trends are particularly positive in Chile, Ireland, Israel, Norway, and the Slovak Republic where the number of students entering initial teacher education programmes increased by more than 20% between the periods 1995-1997 and 1999-2001. By contrast, for the same periods, the numbers entering teacher education dropped in eight countries, with falls of more than 10% in Belgium (French Community), France, Germany, Mexico and Scotland.

Figure 3.8. **Index of change between 1995-97 and 1999-2001 in number of students entering initial teacher education programmes, all types of programmes (period 1995-97 = 100)**



Note: The index is calculated as the ratio between the average number of students entering initial teacher education programmes over the period 1995-97 and the average number of students entering similar programmes over the period 1999-2001 (multiplied by 100). The reference period for Chile is 1996-98.

Source: Data supplied by countries participating in the project. Data were requested in areas that are not already available through the OECD's Indicators of National Education Systems (INES) project. Countries drew on existing data sets to meet the request, and did not engage in any new data collections. Not all countries were able to supply data in the form requested. The chart should be interpreted as providing broad indications only, and not strict comparability across countries.

Box 3.3. **Incentives to attract individuals into teaching in England and Wales**

The *Training Bursary* scheme is aimed at students in postgraduate initial teacher education in England and Wales. Trainee teachers who are on an eligible course receive a £6 000 training bursary, and do not have to pay tuition fees. Those on flexible postgraduate routes are able to claim £3 000 after the first module and the remaining £3 000 when they are recommended for teacher certification.

Another incentive is payable to some trainee teachers in England through the *Secondary Shortage Subject Scheme*. This is an additional fund for eligible trainees in specified secondary subjects where there is a national shortage of teachers. Payments are based on a needs' assessment carried out by the training provider. For trainees under 25 years old, the maximum payment is £5 000 per year.

The *Golden Hello* scheme in England makes an additional £4 000 available for eligible postgraduates teaching specified subjects. This can be claimed by those who successfully complete teacher induction within a specified period and are working in a relevant teaching post in the maintained sector. Similarly, in Wales, those in specified secondary subjects receive a £4 000 teaching grant on successful completion of the first year of teaching, provided that the same subject continues to be taught.

Newly qualified teachers who are taking classes in a designated shortage subject area in England and Wales benefit from the repayment of their student loans. The scheme applies to teachers who spend at least half of their teaching time in a normal week teaching the specified subjects, including in primary schools which provide subject specialists across classes. This is an attractive incentive, allowing undergraduate students to borrow up to £4 000 per year from the Student Loans Company.

Teacher trainees on the *Fast Track* programme in England, which offers accelerated career progression for highly talented graduates, receive a *Fast Track* bursary of £5 000. They receive £3 000 at the start of the postgraduate initial teacher education programme and £2 000 when they take up their first *Fast Track* teaching post.

Teach First was introduced in 2003 and designed specifically to address teacher shortages in London. It is a two-year programme of employment-based teacher training for high-achieving graduates who expect to enter business careers. The programme offers intensive teacher training during the summer after graduation, and support and training during the first year of teaching, resulting in the attainment of teaching qualifications. During the second year the teacher is offered business-led mentoring and opportunities to do management training.

According to the background report from the United Kingdom, the numbers of applications and successful entrants to initial teacher education have risen in the last few years, and while improved financial incentives have played a role, it is difficult to attribute the increased recruitment to any single initiative. There is also some anecdotal evidence of increased academic quality among teacher education entrants. A concern about the introduction of the new financial incentives was the apparently negative effect on morale of those teacher trainees and teachers who missed out on a financial incentive that was introduced after they had completed their training.

Some countries express concern about the quality and motivation of a proportion of teacher trainees. For example, in Greece in 2000, only 15% of entrants into primary teacher education indicated that teacher education was among their top three preferences for university study. In the United States, college students with low examination scores are more inclined to major in education and become primary or secondary teachers than those with the highest scores (Henke *et al*., 1996). Research from Israel indicates that of those teacher education students who complete their courses, those who decide to become teachers have lower university entrance scores than those who decide not to join the profession (Wexler and Maagan, 2002). There is evidence that enrolment in initial teacher education programmes is often a second or third choice or a fall-back option in case the

graduate labour market deteriorates. Issues concerning entrance to teacher education are discussed in more detail in Chapter 4.

Box 3.3 describes a range of financial incentives and programme initiatives introduced recently in England and Wales to make teacher education more flexible and attractive to a wider range of people, and to address teacher shortages in specific subject areas.

3.1.8. The teaching workforce is ageing

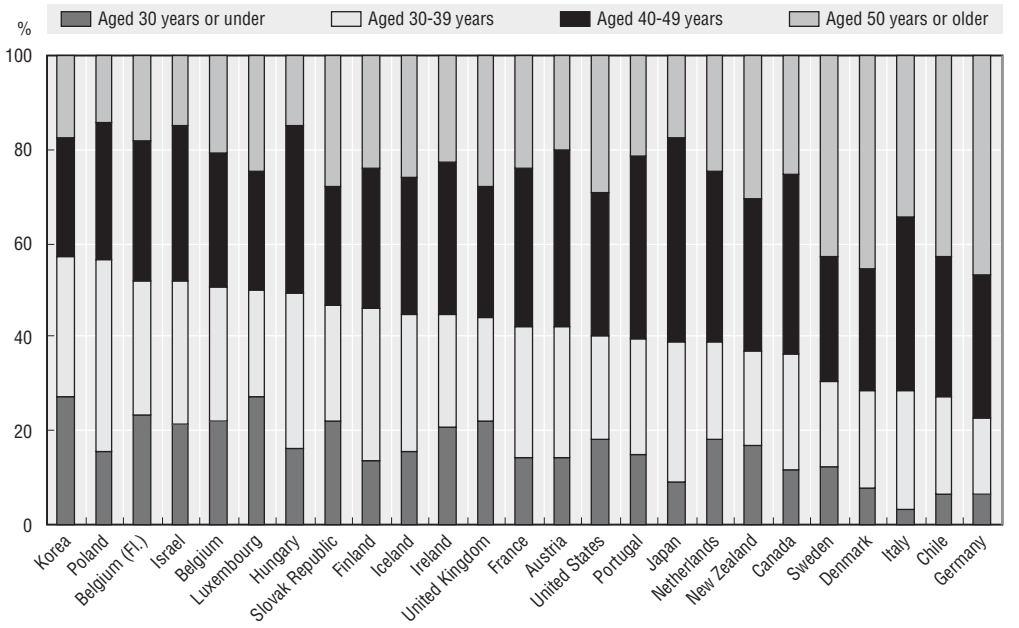
The ageing of the teaching workforce is compounding recruitment concerns. On average, 26% of primary teachers and 31% of secondary teachers in OECD countries are aged over 50 years. In some countries the proportion of teachers aged over 50 is markedly higher (Figures 3.9A, 3.9B). In primary schools this is the case in Chile (43%), Denmark (45%), Germany (47%) and Sweden (43%). In secondary schools this is the case in Germany (49%), Iceland (40%), Italy (48%) and Sweden (44%). Strikingly, in Italian lower secondary schools, only 5% of the teachers are aged less than 40 years. Although not all countries have an ageing teaching workforce, the majority of OECD countries experienced this phenomenon during the 1990s. As illustrated in Figure 3.9C, 10 of the 13 countries for which data are available for primary education experienced an ageing trend between 1992 and 2002. In the case of lower secondary education, 10 of the 14 countries saw an increase in the proportion of teachers aged over 50 (Figure 3.9D). In addition to the countries mentioned earlier, marked ageing trends are evident in France, the Netherlands, New Zealand and the United Kingdom.

The ageing of the teaching workforce raises several concerns. First, it has budgetary implications since in most school systems there is a link between pay and years of teaching experience. An increase in school costs due to teacher ageing can limit the capacity of school systems to take other initiatives. Second, although a more experienced teaching workforce can bring benefits to schools, it can also be the case that additional resources are needed to update skills, knowledge and motivation among those who have been teaching for a long time. Third, unless appropriate action to train and recruit more teachers is taken, shortages are likely as an increasing proportion of teachers retire.

3.1.9. The teaching workforce is highly feminised – and becoming more so

Many countries are concerned that the proportion of males in teaching is declining. Trend data clearly show that teaching has become more feminised in recent years. Figure 3.10A reveals that the proportion of female teachers increased between 1996 and 2002 in about three-quarters of the 28 countries for primary education, and in all the countries for lower secondary education (Figure 3.10B). In more than half the countries, over 80% of primary teachers are female. Moreover, the trend towards more female teachers is likely to continue as male teachers are concentrated in the older age groups, which are the groups most likely to retire in the next few years (Figure 3.10C). Furthermore, data collected from participating countries on entrants into initial teacher education also reveal that the proportion of females is likely to increase even more as, strikingly, in all but two countries for which data are available the proportion of males among students entering teacher education declined between 1995 and 2001 (Figure 3.10D). Despite their numerical dominance, however, women generally hold proportionately fewer leadership positions in schools than do men.

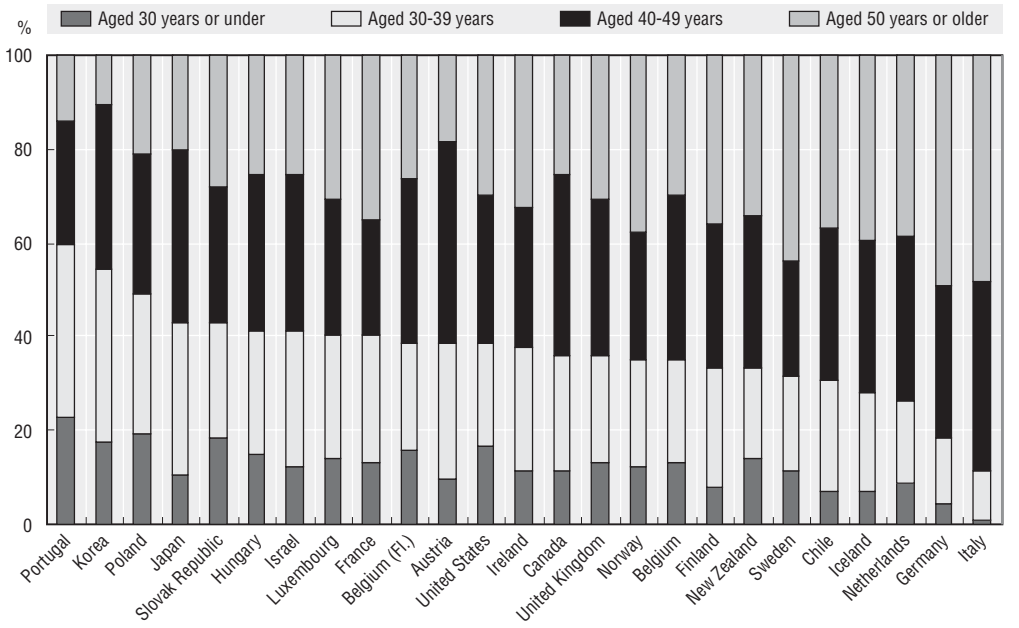
Figure 3.9A. **Distribution of teachers in public and private institutions by age group, primary education, 2002**



Note: Countries are ranked in ascending order of the percentage of teachers aged 40 years or older. Data for Luxembourg include public institutions only. The reference year is 2001 for Canada and Poland.

Source: OECD Education Database, 2004.

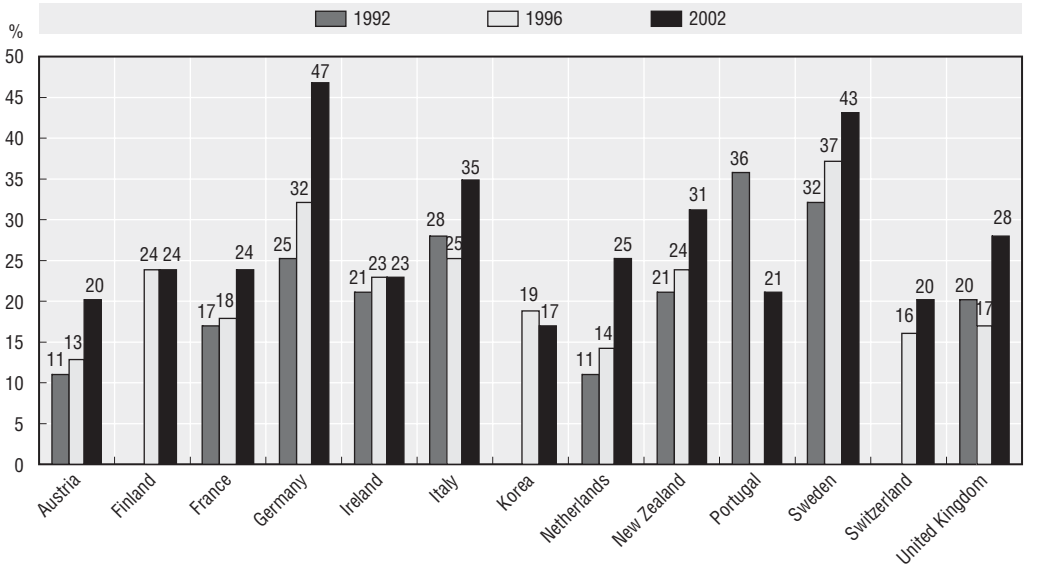
Figure 3.9B. **Distribution of teachers in public and private institutions by age group, secondary education, 2002**



Note: Countries are ranked in ascending order of the percentage of teachers aged 40 years or older. Data for Luxembourg include public institutions only, data for Iceland exclude lower secondary education, data for Norway include primary education and data for both Belgium and Belgium (Fl.) include post secondary non-tertiary education. The year of reference is 2001 for Canada and Poland.

Source: OECD Education Database, 2004.

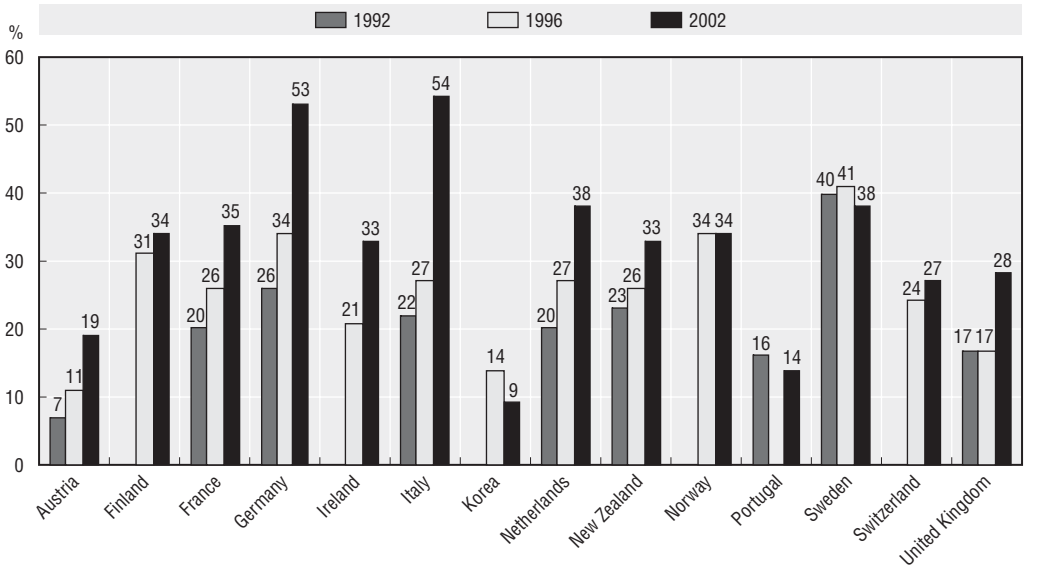
Figure 3.9C. **Percentage of teachers aged 50 years and over, primary education, 1992-2002**



Note: While data for 2002 include private and public sectors, data for 1992 and 1996 are limited to the public sector. 1992 data for France, Ireland and the United Kingdom include pre-primary sector. Data for 1992 for Germany refer to the former Federal Republic of Germany and include government-dependent private institutions. 2002 data for Switzerland include only public institutions. The 1992 figure for the United Kingdom is limited to England and Wales while the 1996 figure is limited to England and Scotland. The 2002 figure for Switzerland refers to 1999.

Source: OECD Education Database, 2004.

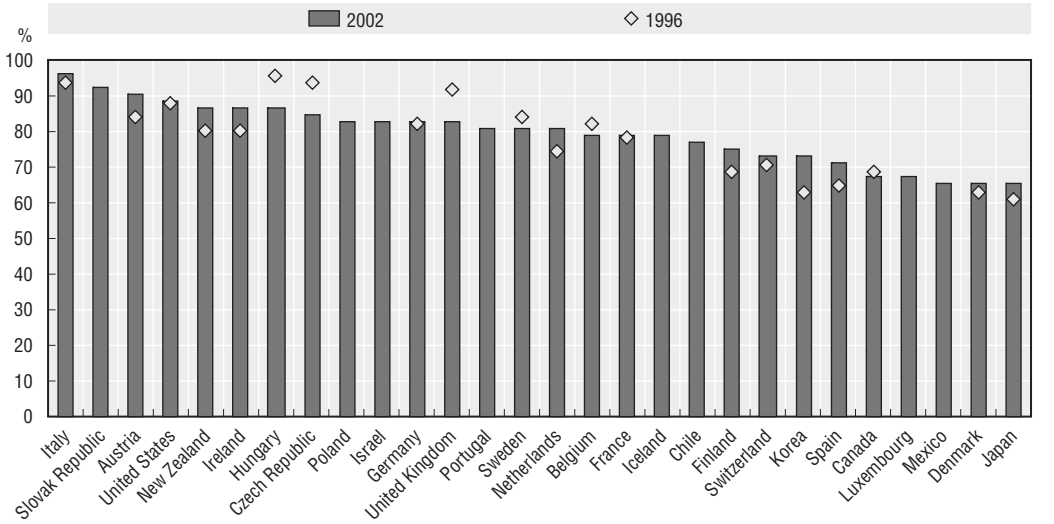
Figure 3.9D. **Percentage of teachers aged 50 years and over, lower secondary education, 1992-2002**



Note: While data for 2002 include private and public sectors, data for 1992 and 1996 are limited to the public sector. 1992 data for France, the Netherlands, Portugal and the United Kingdom, 1996 data for Ireland and New Zealand, and 2002 data for Ireland and the Netherlands include upper secondary sector. Data for 1992 for Germany refer to the former Federal Republic of Germany and include government-dependent private institutions. 2002 data for Switzerland include only public institutions and 2002 data for Norway include primary level. The 1992 figure for the United Kingdom is limited to England and Wales while the 1996 figure is limited to England and Scotland. The 2002 figures for Switzerland refer to 1999.

Source: OECD Education Database, 2004.

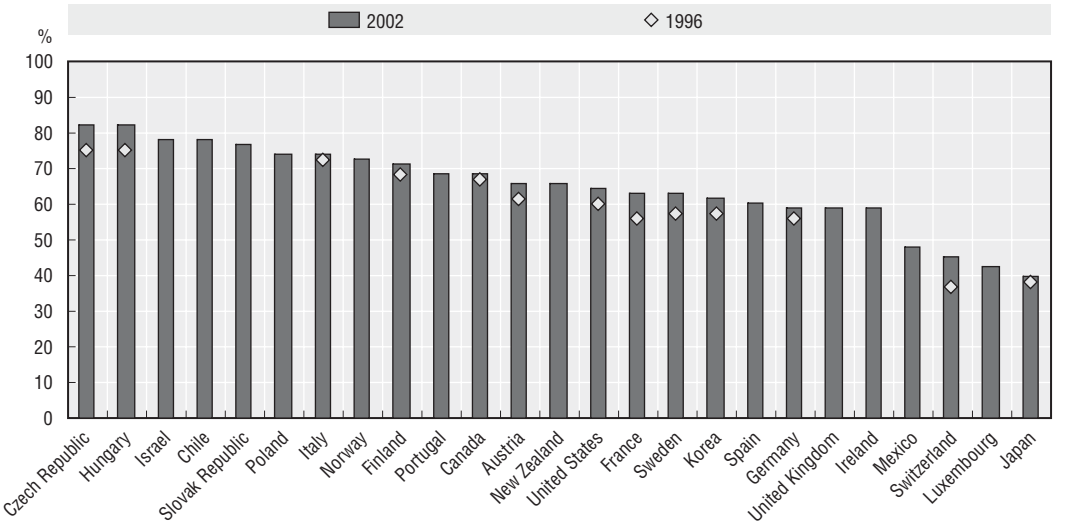
Figure 3.10A. **Percentage of females among teaching staff in public and private institutions, primary education**



Note: While data for 2002 include private and public sectors, data for 1996 are limited to the public sector. Data for Luxembourg and Switzerland include public institutions only. 2002 data refer to 1999 for Switzerland, 2001 for Canada and Poland. Data for Denmark and Iceland include lower secondary education.

Source: OECD Education Database, 2004.

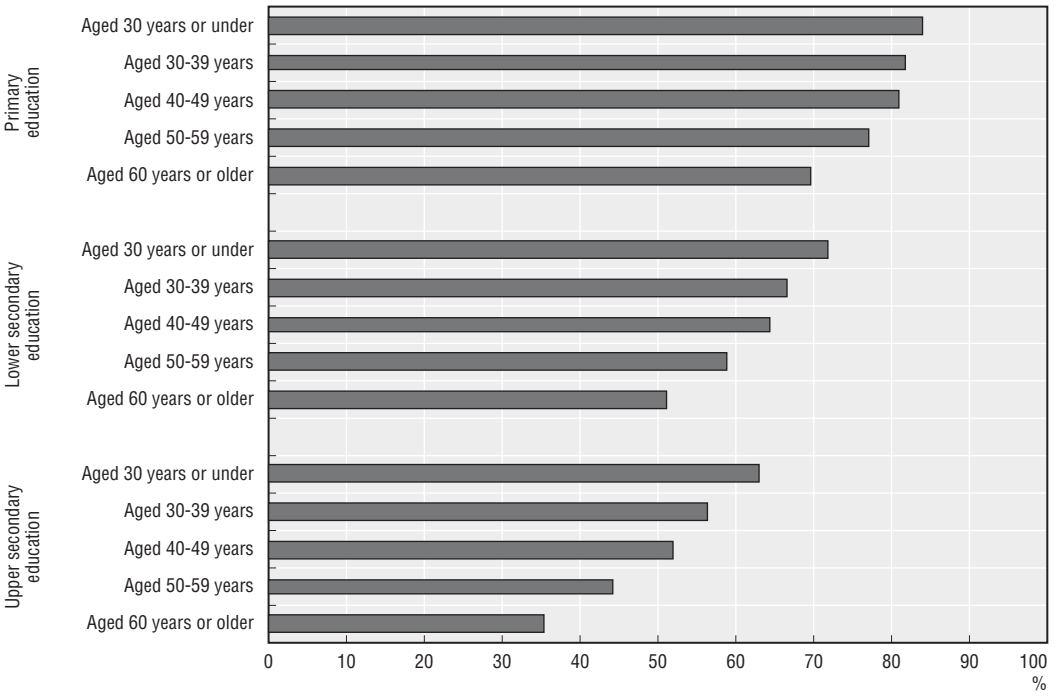
Figure 3.10B. **Percentage of females among teaching staff in public and private institutions, lower secondary education**



Note: While data for 2002 include private and public sectors, data for 1996 are limited to the public sector. Data for Luxembourg and Switzerland include public institutions only. 2002 data refer to 1999 for Switzerland, 2001 for Canada and Poland. Data for Norway includes primary education.

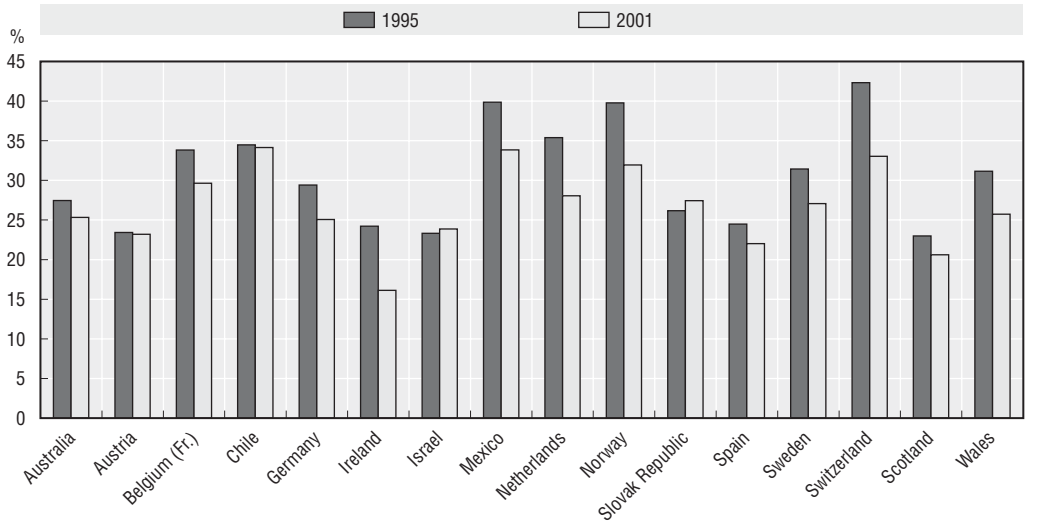
Source: OECD Education Database, 2004.

Figure 3.10C. **Percentage of females among teaching staff in each age group, OECD country mean, by level of education, 2002**



Source: OECD Education Database.

Figure 3.10D. **Percentage of males among students entering initial teacher education programmes**



Source: Data supplied by countries participating in the project. Data were requested in areas that are not already available through the OECD's Indicators of National Education Systems (INES) project. Countries drew on existing data sets to meet the request, and did not engage in any new data collections. Not all countries were able to supply data in the form requested. The chart should be interpreted as providing broad indications only, and not strict comparability across countries.

The concerns about the growing feminisation of teaching relate to the perceived benefits for students and teachers of having more males working in schools, especially in terms of providing positive male role models for disengaged boys, and the possibility that a decline in male teacher numbers signals teaching's more general loss of appeal as a career.

Australian research suggests three explanations for the changing gender profile of teaching:

– Teaching salaries overall are lower relative to other professions, especially for men.

– Cultural factors which tend to stereotype teaching as "women's work", especially in the primary area.

– A fear that they may be wrongly accused of child abuse is a possible deterrent to males entering teaching, particularly at the primary level (MCEETYA, 2003).

Research from Finland and Ireland, two countries where the status of teaching is high, adds an additional possible reason: boys tend to have lower school examination results than girls, and therefore comprise a smaller proportion of well-qualified applicants for teacher education positions (see Drudy *et al*., 2002, and Luukkainen, 2000, respectively).

3.1.10. In some countries the cultural background of teachers does not reflect the student population

Some countries express concern that the cultural and language background of the teaching workforce does not reflect that of students, at a time when the student population in most countries is becoming more diverse. This issue is explored by Mitchell *et al.* (1999) for the case of the United States. They survey the ethnic composition and changing demography of the general population, the students attending public schools, and the teaching staff in public schools. They conclude that there is a striking imbalance between the cultural diversity of public school students and the predominant number of white teachers who teach them.

In the Netherlands it is estimated that the proportion of primary students from ethnic minorities is 12%, while only 4% of teachers have a similar background. This has raised concerns in terms of relatively limited opportunities for ethnic groups to enter professional occupations like teaching, and the important contribution of teachers from ethnic minority backgrounds as role models for students from those backgrounds. Norway, which is another country starting to experience increased immigration, also notes the importance of having more teachers with first languages other than Norwegian, and the belief that teachers from minority backgrounds help improve understanding of cultural differences by teachers and students in general. A key issue in that country, though, is under-representation of immigrant youth in higher education, and a tendency for minority students enrolled in higher education to choose technical/natural science subjects rather than teacher education programmes (Støren, 2001).

3.1.11. Teaching continues to be an attractive career in many countries

A significant number of the participating countries do not currently face shortfalls in teacher numbers, and in some there are many more qualified applicants than teaching vacancies. As seen earlier, the ISUSS survey indicates that school principals in countries such as Italy, Korea, Portugal and Spain report relatively few difficulties in hiring qualified secondary teachers (Figures 3.1B and 3.1C).

Outcomes from teacher recruitment processes in other countries confirm that recruitment problems are not general across the participating countries. For instance, in Japan in the 2001 only 6% of qualified examinees were appointed as teachers in lower secondary education; the corresponding figures for primary and upper secondary education were 11% and 7%, respectively. In Korea, only about 20% of qualified applicants are appointed as teachers. Likewise, in France, in the 2000 teacher recruitment national competition, only 21% of candidates were admitted into the profession (Ministère de l'Éducation nationale, France, 2002). In a number of other countries, including Austria, Chile, the Czech Republic, Hungary, Poland and Switzerland, a teacher shortage/inadequacy is not perceived by school principals as hindering the learning of the students at secondary school level (see Figure 3.2A).

Entrance to teacher education provides another indication of teaching's appeal. For example, in Ireland, applicants for entry to primary teaching tend to come from the top quartile of students in the final school examination, and over 90% of entrants to the postgraduate course in secondary teacher education have advanced undergraduate degrees; high performance on the final school examination is required for those entering the undergraduate concurrent course in secondary teacher education.

3.1.12. Some countries face an oversupply of teachers, which raises different issues

Although it is generally better to have an oversupply of teachers than a shortage of qualified applicants, there can be high individual and social costs when substantial resources are invested in teacher education but many graduates are not able to find work as teachers. This is especially so where their qualifications are not widely recognised elsewhere in the job market.

Several countries report that because the current teacher workforce is "saturated" it is difficult to ensure that able and motivated people find jobs as teachers and are not lost to the profession. For instance, in Greece, newly qualified teachers often used to remain on the candidate list for 10 years or more before they obtained a teaching position; this led to a change in the system of recruitment from one based on candidate lists to one based primarily on competitive examinations. As noted earlier, Korea has expressed a concern that because only one in five secondary teacher education graduates finds work as a teacher, talented students are reluctant to enter teacher education. Countries in these circumstances need to ensure that the quality of teacher preparation is not undermined by the large number of candidates.

There can be quality concerns when no teacher shortages are apparent. The background reports of all participating countries raise concerns about ensuring that the existing teacher workforce has the skills and knowledge to meet the demands of modern schooling and more diverse student populations. Furthermore, analysis of the 2000 PISA survey indicates that school principals in a significant number of countries express concern about teacher morale and enthusiasm, and that such concerns seem to be more evident in countries which have a surplus of teachers.

3.2. Estimating the Future Demand for Teachers

Policies to make teaching a more attractive career choice must be framed in terms of the total number of teachers to be employed; and the extent to which those individuals have the

appropriate backgrounds, qualifications and competencies to meet student and school needs.

The total demand for teachers depends on a range of factors, only some of which are open to direct policy influence. The operation of the various factors is detailed in Santiago (2002). The main factors are the age structure of the school-age population, average class size, the teaching load of teachers, required instruction time for students, use of teaching assistants and other "non-classroom" staff in schools, use of technology and distance learning, age participation rates, in-grade retention rates, starting and ending age of compulsory education, policies pertaining to curriculum, students' preferences over elective courses and over educational programmes and, in the specific case of teachers in public schools, parents' preferences between private and public schools. Figure 3.11 shows the different elements at play. Some of these factors are much more open to direct policy influence (*e.g.* average class size and curriculum structure) than others (*e.g.* population size and distribution).

3.2.1. Population change is a key influence

The size of the school-age population is a dominant factor in the demand for teachers. Figure 3.12 provides information on the expected changes in the size of the population from 2002 to 2012 for the age groups 5-14 and 15-19. The age group 5-14, which covers primary and lower secondary education in most countries, is projected to decline in 27 of the 32 countries with relevant data. Only in Israel and Luxembourg is substantial growth expected (by 14% and 8%, respectively). Overall, therefore, there is likely to be some easing of the pressures on the total demand for teachers in the compulsory school years. Indeed, in 12 countries the number of 5-14 year-olds is projected to fall by at least 10% by 2012, with falls of over 20% likely in six European countries (Austria, Czech Republic, Hungary, Poland, Slovak Republic and Switzerland).

For the age group 15-19, which broadly corresponds with upper secondary education, the population projections reveal more mixed results. Of the 32 countries shown, 13 countries are projected to see an increase by 2012, four will have virtually no change, while 15 countries are projected to see a decline. The number of 15- to 19-year-olds is projected to increase by at least 15% in Denmark, Luxembourg, Norway and Sweden, but to decline by at least 15% in seven other countries (Czech Republic, Greece, Ireland, Japan, Poland, Slovak Republic and Spain).

As well as the total number of young people in the population, another critical factor in the demand for teachers is the rate of school participation by each age group. This depends on the compulsory age for beginning school and the minimum school leaving age, as well as the extent to which young people enrol in the non-compulsory years. The general trend has been for the length of compulsory schooling to increase, and for school participation rates to rise among young children (*e.g.* through the integration of pre-primary education into school systems), and also among adolescents (as school curricula have broadened and the benefits of completing secondary education have increased). The general effect of increased participation rates is that school enrolments rise more rapidly (or do not fall as quickly) as school-age population projections would suggest.

Figure 3.11. **The determinants of the demand for teachers**

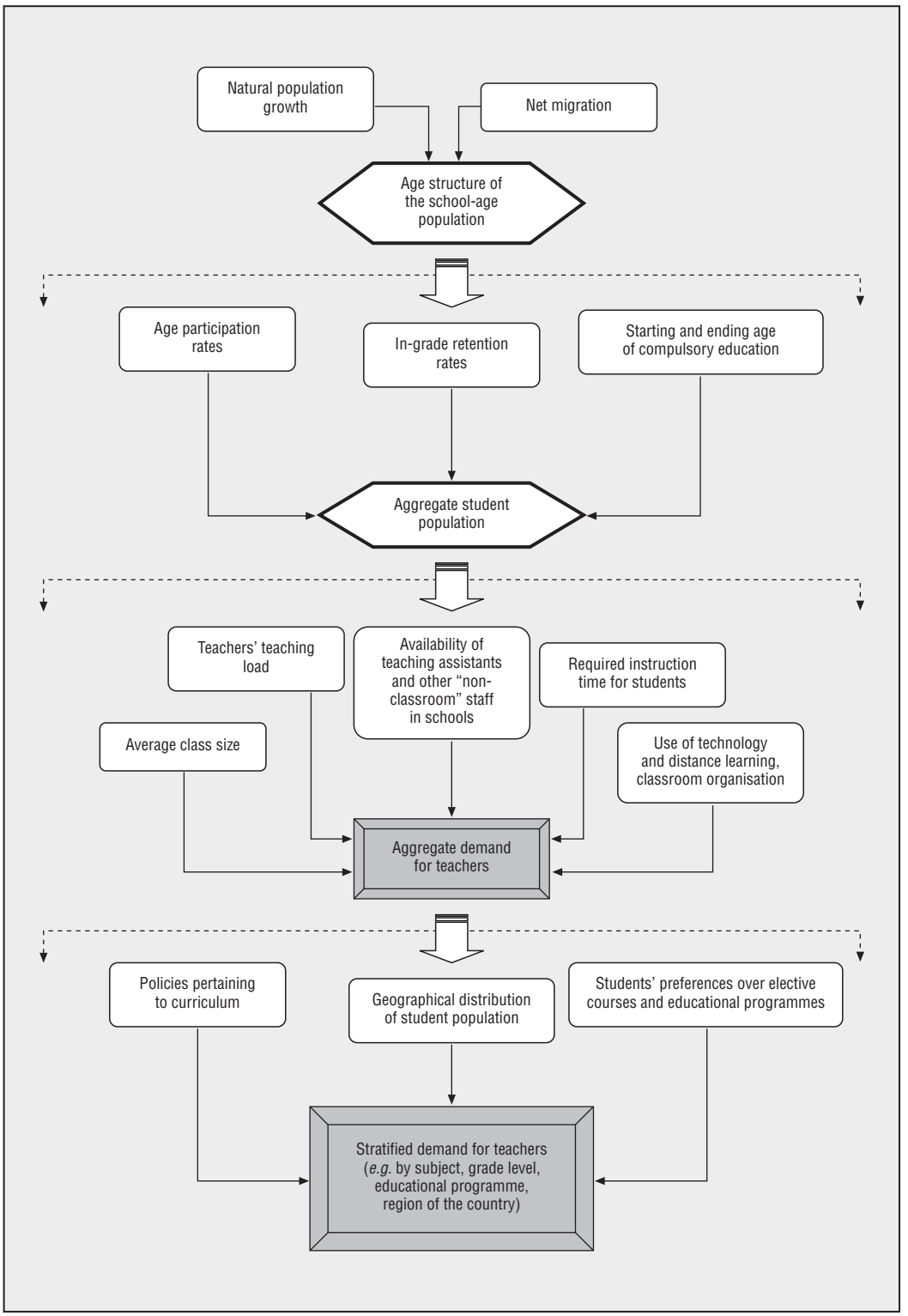
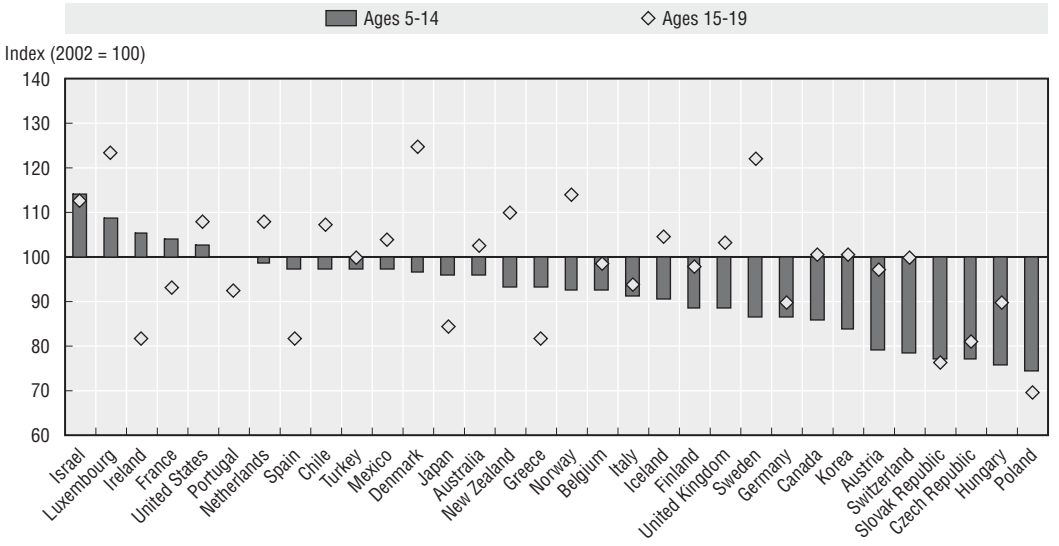


Figure 3.12. **Expected demographic changes in the school-age population from 2002 to 2012 (2002 = 100)**



Source: OECD (2004a).

3.2.2. Policies on student-teacher ratios are another key influence

The student-teacher ratio is the most important determinant of teacher numbers that is open to policy influence. The student-teacher ratio determines the number of teachers employed for a given population of students. It therefore provides boundaries for the average size of classes and the average class teaching load of teachers.[5] Over the long term countries have reduced student-teacher ratios in schools although, in terms of international comparisons, changes in data definitions and coverage suggest caution in estimating the size of the reductions.[6] The more widespread integration of students with special needs into mainstream schooling has been an important factor in the reduction of student-teacher ratios.

Typically, adjustments to the student-teacher ratio reflect budget and industrial relations factors, judgements about improving conditions in schools, or responses to rapid enrolment changes (*e.g.* where teacher numbers are maintained despite falling enrolments). Reductions in the student-teacher ratio enable either a lower average class size, or a reduction in teachers' class teaching time, or some combination of the two (which is probably the most common outcome over the longer term).

[5] There is a trade-off between the average size of classes and teachers' class contact time. For a given student-teacher ratio, the average class size can only be reduced by teachers spending more time in face-to-face teaching. Correspondingly, teachers having less classroom contact time leads to an increased average class size. Different uses of the same level of teacher resources may have different effects on student learning. For example, a school in which teachers spend more time in face-to-face teaching (and thereby reduce average class size) is not necessarily going to achieve better student learning than one in which class sizes are larger but teachers have more preparation time, or access to more specialist teacher support.

[6] A rough approximation is provided by comparing estimated student-teacher ratios in primary schools for the 15 OECD countries that supplied data on this measure in both 1992 and 2002 (OECD 1995, 2004a). Over that period, the average student-teacher ratio in primary schools for those 15 countries declined from around 18.4 to 16.8. This was equivalent to an increase of around 10% in the number of teachers employed for a given number of students.

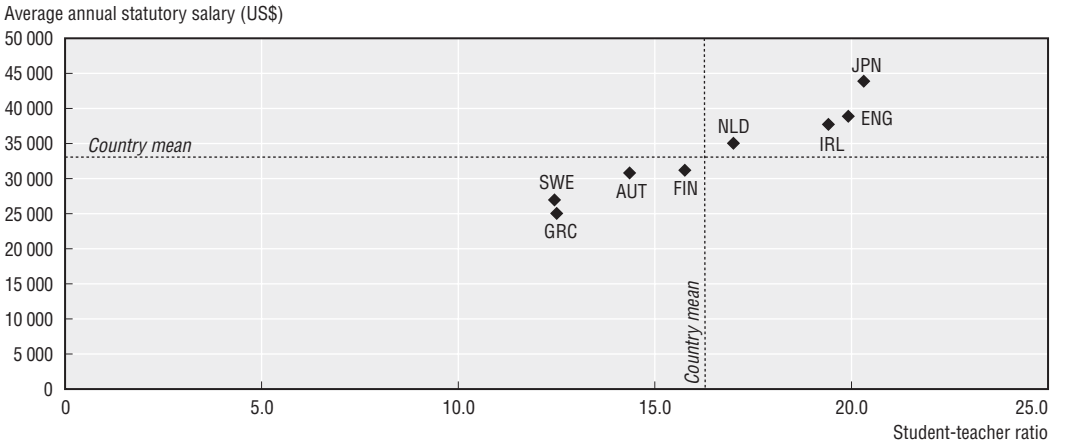
There are trade-offs between teacher numbers and average teacher salaries

Some difficult trade-offs need to be made in teacher employment policy. On the one hand, lowering the student-teacher ratio and employing more teachers is likely to improve learning conditions for students and working conditions for teachers. At any budget level, however, a larger number of teachers means that the average teacher salary is lower than would otherwise be the case. On the other hand, a higher student-teacher ratio, by requiring fewer teachers, would enable each teacher to be paid more, but would mean larger classes and/or less teacher time for non-classroom teaching responsibilities.

Figure 3.13 shows, for primary education, the wide range of different combinations of student-teacher ratio and average teacher salary currently evident among a subset of countries. Given that the trade-off between the student-teacher ratio and the average salary of teachers is meaningful only for a given expenditure on teachers per student, the analysis considers a set of eight countries with a similar level of expenditure on teachers per student. Figure 3.13 illustrates that there are markedly different patterns of resource use possible with similar levels of expenditure. On the one hand, Japan, England and Ireland have relatively high average statutory teacher salaries, but relatively high student-teacher ratios. On the other hand, Greece and Sweden use resources quite differently: they have relatively low average teacher salaries combined with low student-teacher ratios, which means that they employ comparatively more teachers than the other countries. Among this group of eight countries, Austria, Finland and the Netherlands have average teacher salaries and student-teacher ratios that are close to average for the group.

Figure 3.13. **Student-teacher ratio versus average salary of teachers (with 15 years of experience)**

Primary schools, 2002, selected group of countries with similar expenditure on teachers per student

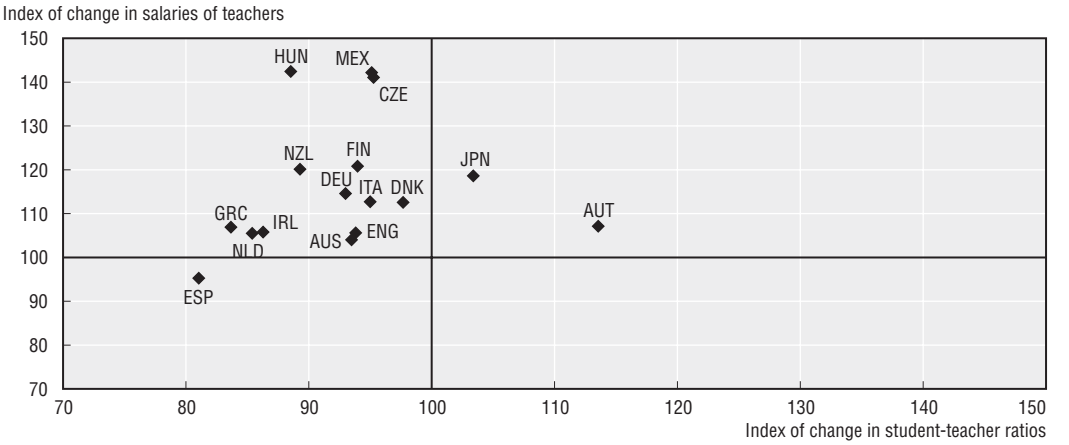


Note: Salary of teachers refers to annual statutory salary in public institutions after 15 years of experience. The ratio of students to teaching staff is for public and private institutions and is based on full-time equivalents. Given that the trade-off between the student-teacher ratio and the average salary of teachers is meaningful only for a given expenditure on teachers per student, this analysis considers a set of eight countries with a similar level of expenditure on teachers per student. The eight countries form the largest set of countries with expenditure levels within a range of US$ 250 per year (in this case between US$ 1 950 and US$ 2 200). The estimated annual expenditure on teachers per student is the product of the statutory salary of teachers with 15 years of experience and the inverse of the student-teacher ratio. The student-teacher ratio used for England is that of the United Kingdom.

Source: Derived from data in OECD (2004a).

To provide a longer-term perspective on the trade-offs involved, Figure 3.14 shows indices of change in teachers' salaries and student-teacher ratios for primary schools over the period 1996 to 2002. In 15 of the 16 countries with relevant data, the average statutory salary of a teacher with 15 years of experience increased (after adjusting for inflation). In the Czech Republic, Hungary and Mexico the average salary rise was more than 40%. In 14 of the 16 countries the student-teacher ratio fell over the same period, with especially large falls in Greece, Ireland, the Netherlands and Spain. In eight of the 13 countries that both raised teacher salaries and reduced student-teacher ratios during the 1996-2002 period, average statutory salaries rose faster than student-teacher ratios fell. This suggests that in recent years countries have tended to give greater weight to increasing average teacher salaries than to reducing student-teacher ratios – although these have generally continued to fall, albeit perhaps at a slower rate than in earlier times.

Figure 3.14. **Index of change between 1996 and 2002 in salaries of teachers with 15 years of experience and student-teacher ratios, primary schools (1996 = 100)**



Note: The estimation of the student-teacher ratio considers only teachers with teaching duties. The index of change in salaries of teachers is calculated as teacher salary in 2002 in national currency (multiplied by 100) divided by teacher salary in 1996 in national currency (multiplied by GDP deflator 2002). The index of change in student-teacher ratios is calculated as student-teacher ratio in 2002 (multiplied by 100) divided by student-teacher ratio in 1996. Indices for the Czech Republic and Germany reflect changes between 1996 and 2001. Values of student-teacher ratios for England refer to the United Kingdom.

Source: Derived from data in OECD (2003) and OECD (2004a).

Although it is difficult to generalise given the very wide range of country positions evident in Figures 3.13 and 3.14, the research suggests that student learning is likely to benefit more from policies that focus on improving teacher quality by increasing average teacher salaries, rather than by using extra spending to reduce student-teacher ratios, at least within the range of student-teacher ratios typical of most OECD countries. This is especially true in countries facing teacher shortages, since increased demand for teachers from reducing the student-teacher ratio is likely to exacerbate supply problems.

Class size reduction facilitated by lower student-teacher ratios has probably been the most widely supported and most extensively funded policy aimed at improving schools. However, the research on the relationship between class size and student achievement is not clear-cut, although there are several promising points of convergence (see Hanushek, 2000; Hoxby, 2000; Meuret, 2001).

There is general consensus that class size reductions are more beneficial for some students than for others. For example, there is evidence that class size reductions may be

particularly beneficial for students in the early years of schooling, and for students from disadvantaged backgrounds (see Santiago, 2002, for a detailed discussion). This research suggests that relatively large class size reductions targeted at particular students, grades or subject areas may be more cost-effective than smaller across-the-board reductions in class size for all students, at least within the range of class sizes currently operating in most countries.

Teacher skills and behaviour are key ingredients in whether class size reductions are likely to be beneficial. Since substantial reductions in class size imply hiring additional teachers, the success or failure of a class size reduction programme will depend not only on the impact of class size reduction *per se* but also on how the quality of the teachers is affected. If a policy of reduced class sizes exacerbates the problems of teacher shortage and necessitates recruiting teachers with lower qualifications – as appears to have been the case in California, for example[7] – the hoped-for gains in student performance may not eventuate. A critical factor will be whether schools and teachers change their approaches to capitalise on the potential offered by smaller classes.

There could even be a case for using an increase in average class size to fund higher teacher salaries and thereby make teaching more attractive to higher-quality candidates. However, the size of classes also affects teachers' working conditions, and teachers faced with larger classes may become more dissatisfied and inclined to leave the profession, thereby worsening supply. One of the few studies to look at this aspect (Mont and Rees, 1996) found that United States high schools with above-average class sizes were associated with a higher resignation rate of teachers. On the other hand, Stinebrickner (1999) concluded that, while the student-teacher ratio (which is highly correlated with class size) plays a significant role in whether teachers consider a school to be desirable, it is less important than salary.

3.2.3. Demand estimates are often more useful at the disaggregated level

Educational planners and schools also need to specify the demand for teachers at more detailed levels, such as by subject matter, school type, educational programme or region of the country. Although countries may not have a general shortage of teachers, for example, there can still be shortages of particular types of teachers, or shortages in particular schools. The background reports for Australia and the United States note that this is the situation they currently face. Both have moved in recent years from generalised teacher shortages to positions where total teacher supply approximates total teacher demand, but there are still shortages of qualified teachers in areas like ICT, sciences and languages; additionally, some schools have difficulties attracting and retaining teachers. The more highly specialised teachers are, and the lower the possibilities for teachers to move readily between teaching different grade levels or subject areas, the more important it is to identify teacher demand and supply at a highly disaggregated level.

Curriculum policies and priorities are the dominant influence in defining the different types of teachers needed. For example, changing the balance of the secondary school

[7] Jepsen and Rivkin (2002) investigated the trade-off between smaller classes and teacher quality by looking at the effects of the recent California class size reduction programme. The results show that smaller classes generally raised third-grade mathematics and reading achievement, particularly for lower-income students. However, the expansion of the teaching force required to staff the additional classrooms appears to have led to a decline in average teacher quality in schools serving disadvantaged students (*e.g.* a smaller proportion of qualified teachers). This decline partially or, in some cases, fully offset the benefits of smaller classes.

curriculum towards technology and computing leads to an increased need for teachers with these skills. Similarly, the introduction of foreign languages in primary schools leads the system to seek primary teachers with good foreign language skills. At the secondary school level, the curriculum requirements for student graduation can be important influences on the subjects that need to be covered and therefore the types of teachers required. Another influence on the type of teachers needed arises from the scope that students have to choose different parts of their curriculum. Students' preferences for various elective courses, or between different educational pathways (*e.g.* general and vocational programmes), play a key role in this regard. Of course, the influence can also work in the other direction: the choices that students are offered can be limited by the likely supply of teachers with the necessary competencies.

Since the teacher workforce is so large, relatively small changes in either teacher supply or demand can have major implications for whether schools are able to maintain their programmes. There is a constant need to monitor trends in teacher supply and demand, and to examine the potential implications of changes in the school, higher education and labour market environments. This is particularly challenging in highly decentralised school systems, where responsibility for teacher recruitment and employment is exercised at local level. This is the case in the Netherlands, for example, and has led to the development of a forecasting model for teacher demand and supply at a highly disaggregated level (see Box 3.4).

Box 3.4. **Planning future teacher needs in the Netherlands**

In 2002 the Netherlands Ministry of Education, Culture and Science commenced development of MIRROR,* a forecasting model which enables the identification of teacher needs at the regional and sub-regional levels. The model uses both central and local data on the age distribution of teachers, the number of recent graduates from initial teacher education, the employment status of teachers, teacher qualifications, rates of teacher transfers between schools, the projected supply behaviour of individuals and so on to monitor teacher demand and supply, and to assess the effects of different scenarios on teacher recruitment.

MIRROR was developed with the objectives of monitoring the teacher labour market, anticipating teacher needs, facilitating the alignment between the demand for and the supply of teachers, and therefore assisting the development of recruitment strategies. It offers regions and individual school boards the possibility to gain insight into developments in the teacher labour market affecting their immediate area, and to assess the likely impact of different policy initiatives. For instance, it enables central and local authorities to identify in considerable detail the geographic and subject matter areas at "high risk" of suffering from teacher shortfalls in the next few years. By 2005 the model will be available for direct use by all school boards in primary, secondary and vocational education. An internet platform is being designed to provide users with easy access.

**Microsimulatie Rekenmodel Regionale Onderwijs Ramingen* (Micro simulation estimation model of regional education labour markets).

3.3. Factors in the Attractiveness of Teaching as a Career

3.3.1. Motivation to become a teacher

Studies of the reasons that teachers give for joining the profession reveal a strong emphasis on intrinsic factors. Figure 3.15A illustrates this for beginning and experienced

primary teachers in France. Among both beginning and experienced teachers, the three most important reasons given were "wish to teach" (around 70% for both groups named this among the three main reasons), "wish to deal with children" (around 60%), and "play an educational role" (around 40%). More extrinsic reasons were ranked much lower, such as "job security" (about 20% for both groups), "free time, holidays" (10%) and "salary" (1 to 2%).

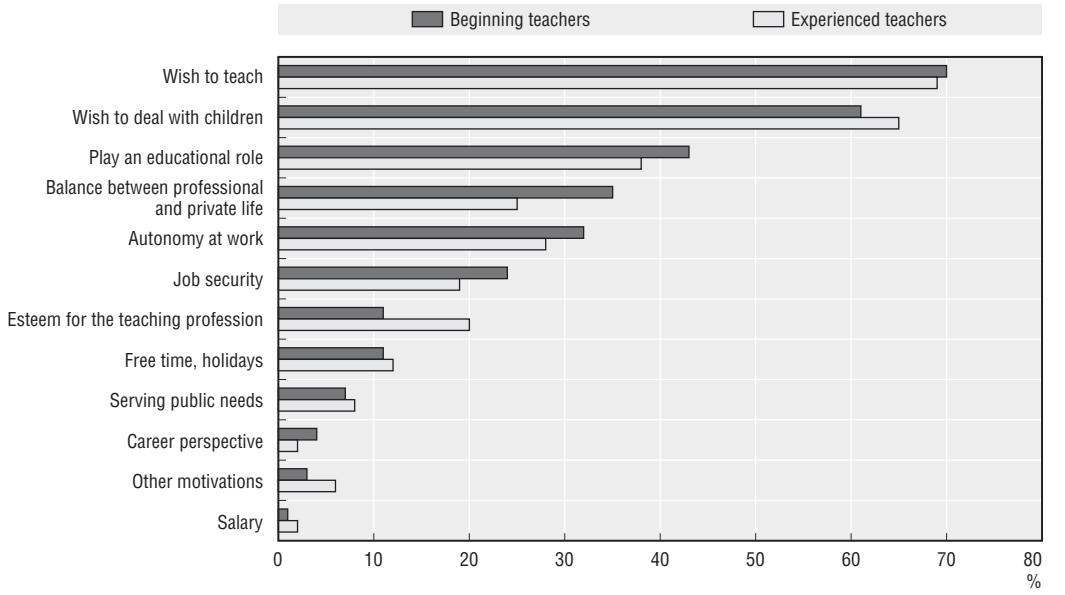
Broadly similar patterns are shown in Figure 3.15B, which documents the most important motivations for becoming a teacher expressed by Australian teachers. Among primary teachers the two most important reasons were "enjoy working with children" (37% named this as the most important), and "desire to teach" (23%). These two motivations were also the most important for secondary teachers, but to a lesser extent (23% and 21%, respectively). For between 11 and 12% of both types of teachers "recruitment campaign or impact of role model" was the most important motivation. The desire to "make a difference" was the most important motivation for 10% of primary teachers, but was less significant (6%) for secondary teachers. As was the case with French teachers, few Australian teachers cited extrinsic factors (employment conditions, scholarship, remuneration) as the most important reason for becoming a teacher, although secondary teachers were more likely to do so than primary teachers. Secondary teachers were also more likely (12%) to rate "enjoy subject" as their main motivation than were primary teachers (2%).

Similar results to the French and Australian studies on teacher motivation are reported in the background reports for Belgium (French Community), Canada (Quebec), the Netherlands, the Slovak Republic and the United Kingdom. The importance of intrinsic reasons is consistently emphasised by the research; working with children, intellectual fulfilment and making a contribution to society are major factors in why people choose to become teachers. There is a positive association between a desire to teach and previous experience working with children in sporting and other community activities. Research from the United Kingdom suggests that those entering teaching after another career strongly emphasise making a difference, and the job satisfaction of seeing students achieve (Hunt, 2002).

The reasons that people give for deciding to become a teacher are important considerations in designing recruitment strategies, and in identifying the sources of job satisfaction that influence whether people are likely to stay in the career. It is also important to analyse the reasons people give for not becoming teachers, and the reasons why existing teachers leave. In addition, behavioural evidence suggests that extrinsic factors (pay, working conditions and career prospects) are important influences on whether people choose to become teachers or not. Other professions offer strong competition to teaching for people who are academically talented and oriented towards helping others.

Former teachers are a potentially important source of recruits. In the United Kingdom the number of returning teachers has increased in recent years, and in 2000/01 they comprised about 25% of the flow of full-time teachers into the maintained schools sector, and more than 50% of the inflow of part-time teachers. Those data also indicate that the number of women returning to teaching is much greater than the number of men, and also that the returning teachers are spread across the age range: in 2000/01 about 12% of returning teachers were younger than 30 years, while 40% were aged over 45. Of those in returners' training courses, 29% said they were returning to teaching because they enjoy it, 25% because it suits family needs, and only 7% said it was because teaching was their only option (Penlington, 2002). Box 3.5 describes programmes in England and Wales to keep in contact with former teachers and to assist them in returning to the profession.

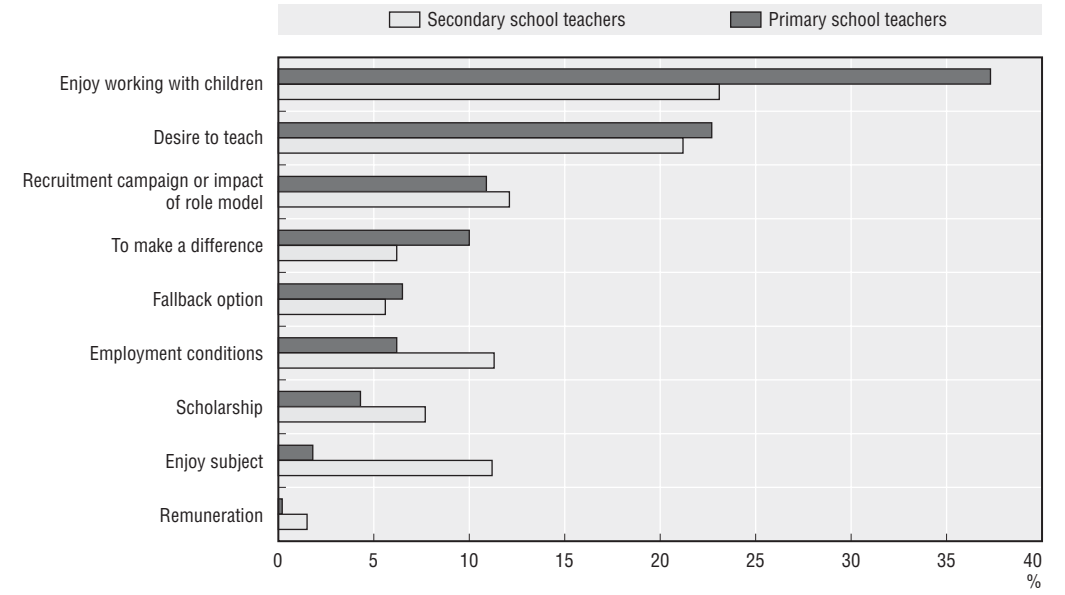
Figure 3.15A. **Main reasons for becoming a teacher, primary teachers, France, 2000**



Note: Figures are based on a survey of 858 primary school teachers in France. Figures reflect the percentage of surveyed teachers who mention each possibility among the three main reasons for becoming a teacher. As a result figures add up to more than 100% for each category of teachers.

Source: Ministère de l'Éducation nationale, France (2001).

Figure 3.15B. **Most important motivations for becoming a teacher, by level of education, Australia, 2002**



Note: Figures are based on a survey of 2 500 teachers from government and non-government schools, in metropolitan and non-metropolitan Australia, and from primary and secondary schools.

Source: Ministerial Council on Education, Employment, Training and Youth Affairs (2003).

Box 3.5. **Support for former teachers in England and Wales**

In England and Wales, the *Returning to Teach Programme* provides guidance services for qualified teachers taking a career break from teaching. It offers a dedicated help line, a termly magazine updating them on current issues in education, support in identifying courses for returners and links to recruitment activities of teacher employers. Opportunities to spend observation days in schools and refresher courses for returners are widely available. Courses last 6-12 weeks and are offered to those qualified teachers who feel that they need up-dating. Participants receive training bursaries of £150 a week (to a maximum of £1 500), and are also eligible for child-care support of up to £150 a week. The Teacher Training Agency (TTA) sponsors approximately 100 returner courses around the country each year. Approximately 20% of those returning to teaching attend such courses.

3.3.2. Salaries

The research evidence indicates that salaries and alternative employment opportunities are important influences on the attractiveness of teaching (Santiago, 2004). Teachers' salaries relative to those in other occupations influence: (i) *the decision to become a teacher* after graduation, as graduates' career choices are associated with relative earnings in teaching and non-teaching occupations, and their likely growth over time; (ii) *the decision to return to teaching after a career interruption* as returning rates are generally higher among those teaching subjects that provide the fewest opportunities for employment elsewhere; and (iii) *the decision to remain a teacher* as, in general, the higher teachers' salaries, the fewer people who leave the profession (evidence on teacher retention is discussed in Chapter 6). Relative earnings seem to be less important when the decision is *whether to enrol in teacher education* or another college course (Hanushek and Pace, 1995).

Focusing on the decision to become a teacher, Dolton (1990) used data on a large sample of United Kingdom university graduates. The results suggest that relative earnings in teaching and non-teaching occupations, and the likely growth in earnings, have a marked effect on graduates' career choices. He found that fewer graduates choose to become teachers when teachers' earnings are low relative to other graduate earnings, and when the growth in teachers' earnings is relatively slow. A similar analysis was conducted by Wolter and Denzler (2003) in Switzerland using data on university graduates for the period 1981-1999. They also found that teacher supply is responsive to relative salary levels: the more teachers earn relative to other graduate occupations, the greater the supply of people who wish to become teachers.

In an important difference from the United Kingdom results, Wolter and Denzler (2003) found that in Switzerland a large increase in teachers' relative salary was needed to prompt an increased supply of new teachers. This was attributed to the fact that teacher salaries in Switzerland are generally quite high compared to other occupations. By contrast, in the United Kingdom teacher supply seemed to be more "wage elastic": because teachers' wages were comparatively low, a given increase in the wage stimulated a larger increase in teacher supply.

Research has also shown that teacher supply is influenced by general economic conditions. Dolton *et al.* (2003) analysed United Kingdom data from 1960 to 2000 and concluded that when the general economy is strong, graduate unemployment is low and graduate earnings are high, fewer graduates choose to become teachers. This effect seemed to be particularly evident for males and those with higher qualifications. Correspondingly,

when general economic conditions worsen, teaching seems to become a more attractive job choice for graduates. For example, the background reports for both Sweden and the United States indicate that difficult graduate job conditions in the labour market as a whole in those countries may have contributed to some reductions in teacher shortage problems.

There is also evidence on the decision to return to teaching after a career interruption. According to Murnane (1996), in the United States, approximately one in four teachers who leave the classroom returns within five years. Beaudin (1993) found that the teachers most likely to return are those with subject area specialities that provide limited opportunities for better paying employment elsewhere, those who have more than two years of experience coupled with a Master's degree, and those who interrupted their careers at an older rather than a younger age.

Teachers' relative wages are likely to affect not only the number of people who are willing to teach, but also their characteristics. The growing feminisation of teaching has been attributed, in part, to the relative decline of teacher salaries over the long term. However, there is also evidence that, due to the rapid expansion of alternative employment opportunities for women, the composition of the female teaching workforce has also changed. Analysing the case of the United States for the period 1957-1992, Corcoran *et al.* (2002) examined how the propensity for academically talented women to enter teaching has changed. They found that while the academic quality of the average new female teacher has fallen only slightly over this period, the likelihood that a female from the top of her high school class will eventually enter teaching fell dramatically between 1964 (20% probability) and 1992 (4%). The explanation lies in the fact that job opportunities for academically talented women outside of teaching have increased substantially. Similar conclusions are reported by Stoddard (2003), among others.

Job opportunities have also broadened for well-educated males. In the case of the United Kingdom, Nickell and Quintini (2002) concluded that the decline in teachers' relative salaries has been associated with a decline in the average academic quality of the males entering teaching between the late 1970s and early 1990s.

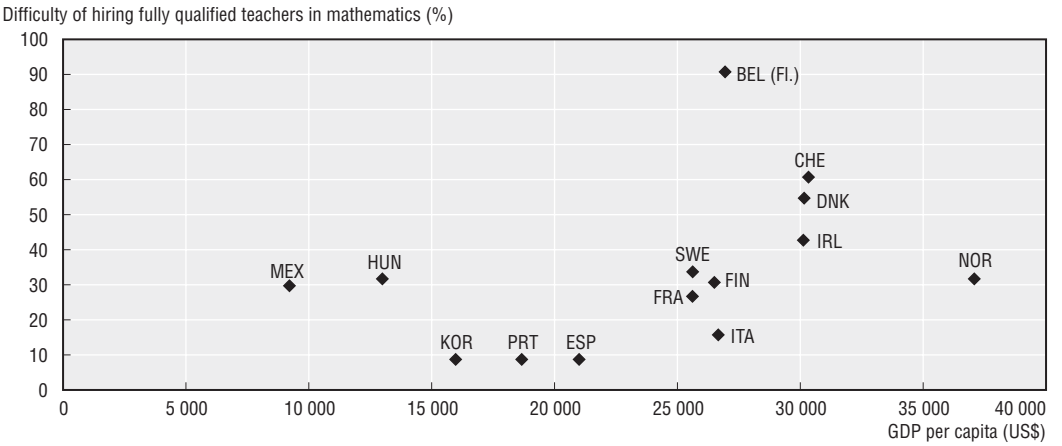
Such findings raise the issue of whether, as countries develop and provide more alternative job opportunities for graduate labour, teaching will struggle to be attractive to well-qualified people. Figure 3.16 provides some support for this view. It uses data on 14 countries to plot a measure for the difficulty of hiring fully qualified mathematics teachers in upper secondary education against GDP per capita. The data indicate that the current problems of teacher shortages seem to be more acute in relatively wealthy countries, presumably because such countries provide more alternative employment opportunities for well-educated workers.

Although an increase in teachers' relative salary can be reasonably expected to reduce shortages, whether or not the quality of the teaching workforce also improves depends on which teachers join and which ones stay. In the case of the United States, Ballou and Podgursky (1997) conclude that there is little evidence that higher salaries have raised the quality of newly hired teachers, at least by the indicators of teacher quality that were used. On the other hand, Figlio (1997) found that, within local labour markets, there exists a significant positive relationship between teacher salaries and teacher quality, measured by undergraduate university selectivity and subject matter expertise.

Although it is reasonable to expect that an increase in the teacher supply pool in response to higher salaries would also increase the number of high-quality candidates, effort is necessary to ensure that the most able new teachers are actually recruited and selected. The teacher labour market can quickly swing from shortages to oversupply, in part

because a general salary rise is likely to reduce the resignation rate among existing teachers. The best new candidates may not be willing to wait in a queue for teaching vacancies if they have good job prospects elsewhere. Issues to do with teacher recruitment and selection are taken up in Chapter 5.

Figure 3.16. **Difficulty of hiring fully qualified teachers in mathematics and GDP per capita, upper secondary education, 2001**



Note: Difficulty of hiring qualified teachers in mathematics corresponds to the mean percentage of upper secondary students attending schools where the principal reported that hiring fully qualified teachers in mathematics is difficult.

Source: Derived from data in OECD ISUSS database, 2003.

Teachers' salaries differ considerably across countries

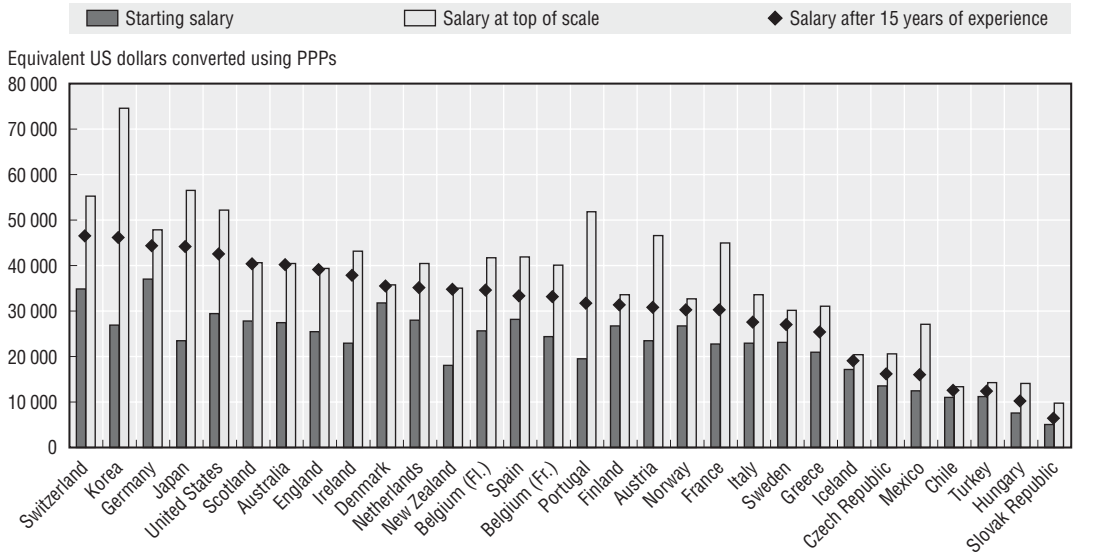
Figure 3.17A compares the starting, mid-career and maximum statutory salaries of primary teachers in public education in 2002. Salaries are expressed in equivalent US dollars converted using purchasing power parities. The annual statutory salaries of teachers with 15 years of experience range from below US$ 15 000 in Chile, Hungary, the Slovak Republic and Turkey, to over US$ 45 000 in Korea and Switzerland.

Countries exhibit marked variation in relation to salary differentials across the teaching career. In some countries the statutory salary of a teacher at the top of the scale is more than twice the salary of a beginning teacher (France, Japan, Korea, Mexico and Portugal). Other countries have a quite different salary structure in which the top salary step is less than 25% higher than the beginning salary (Denmark, Iceland and Norway). As discussed further in Chapter 6, countries also differ in the number of years required to move from the beginning to the top of the salary scale, and these different salary structures are likely to affect the patterns of teacher recruitment and retention.

Figure 3.17B examines within-country teacher salaries for teachers in primary, lower secondary and upper secondary education. Two broad patterns are evident. In 12 of the countries teachers have the same statutory salary irrespective of the level of school in which they work. In 16 of the countries upper secondary teachers earn more than lower secondary teachers, and generally much more than primary teachers. In the Netherlands and Iceland an experienced upper secondary teacher earns more than 40% more than a primary teacher with similar teaching experience, whereas in Sweden and Chile the differential is less than 10%. Turkey is the only country in which the statutory salary of an experienced primary teacher is greater than that of an upper secondary teacher with similar experience.

Figure 3.17A. **Teachers' salaries in primary education, 2002**

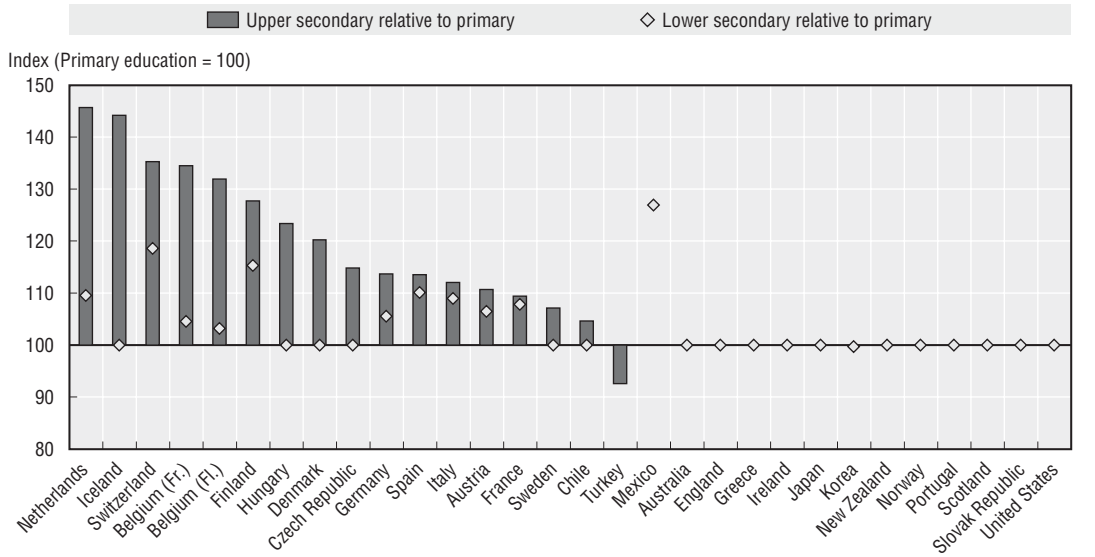
Annual statutory teachers' salaries in public institutions in primary education, in equivalent US dollars converted using PPPs



Source: OECD (2004a).

Figure 3.17B. **Teachers' salaries compared across levels of education, 2002**

Ratio of salaries of teachers in upper secondary education (general programmes) and lower secondary education to salaries of teachers in primary education, salaries after 15 years of experience, public institutions

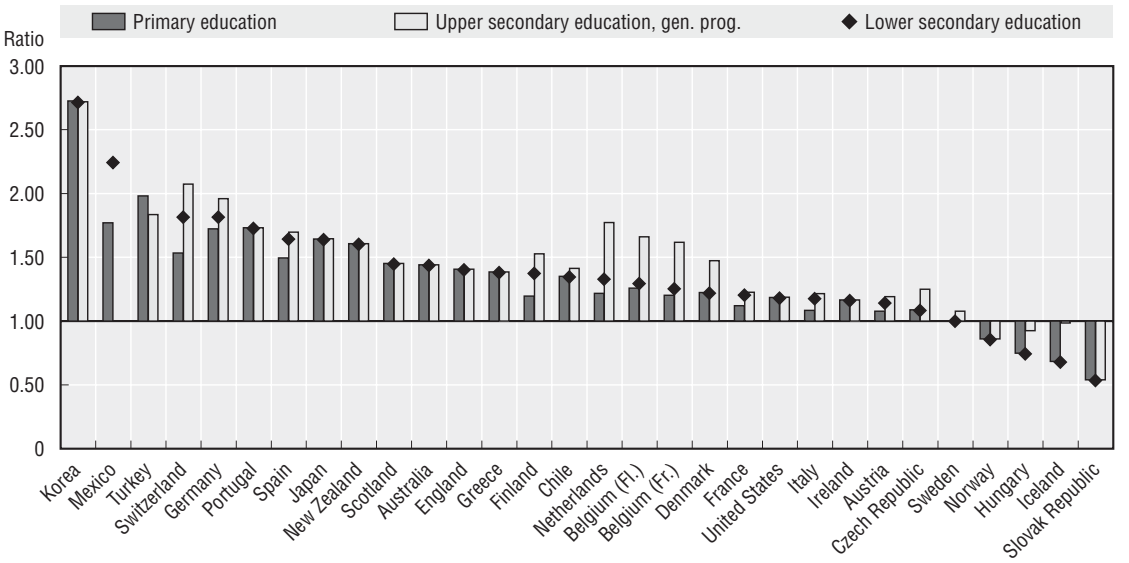


Note: Data are not available for upper secondary education in Mexico and lower secondary education in Turkey.

Source: OECD (2004a).

In terms of the attractiveness of the teaching career, it is important to analyse teacher salaries relative to other occupations. However, there are only limited internationally comparable data available. The main indicator that is currently used, teachers' statutory salary expressed as a ratio of GDP *per capita* (Figure 3.18), has a number of limitations.[8]

Figure 3.18. **Ratio of teachers' salary after 15 years of experience to GDP per capita, public institutions, 2002**



Source: OECD (2004a).

Mid-career statutory salaries for primary teachers average 1.33 times GDP per capita in OECD countries. The averages for mid-career lower secondary and upper secondary teachers are a little higher, 1.37 and 1.45 times GDP per capita, respectively. As Figure 3.18 shows, however, there is a very large range among countries on this indicator. In Korea teachers with 15 years experience earn 2.73 times GDP per capita, and in Mexico experienced lower secondary teachers earn 2.25 times GDP per capita. By contrast, experienced teachers in the Slovak Republic earn just 0.54 times GDP per capita, and in Iceland and Hungary the equivalent teacher salaries are 0.68 and 0.75 times GDP per capita, respectively. Reports indicate that teachers in the Slovak Republic and Hungary often need to take second jobs to augment their earnings.

Countries in which teacher salaries are relatively high in GDP per capita terms generally have fewer teacher supply problems. However, this is not uniformly the case. For example, until recently Switzerland has faced teacher shortages despite having relatively high teacher salaries. On the other hand, Hungary has a general oversupply of teachers, despite relatively low teacher salaries, notwithstanding some specific shortages in areas like ICT and languages. A more rounded and long-term perspective on the teacher labour market is needed to address the relationship between salaries and supply.

[8] This indicator is based on statutory rather than actual salaries, other benefits such as vacations and pensions are not included, and the reference point, GDP per capita, does not reflect compensation levels in comparable occupations.

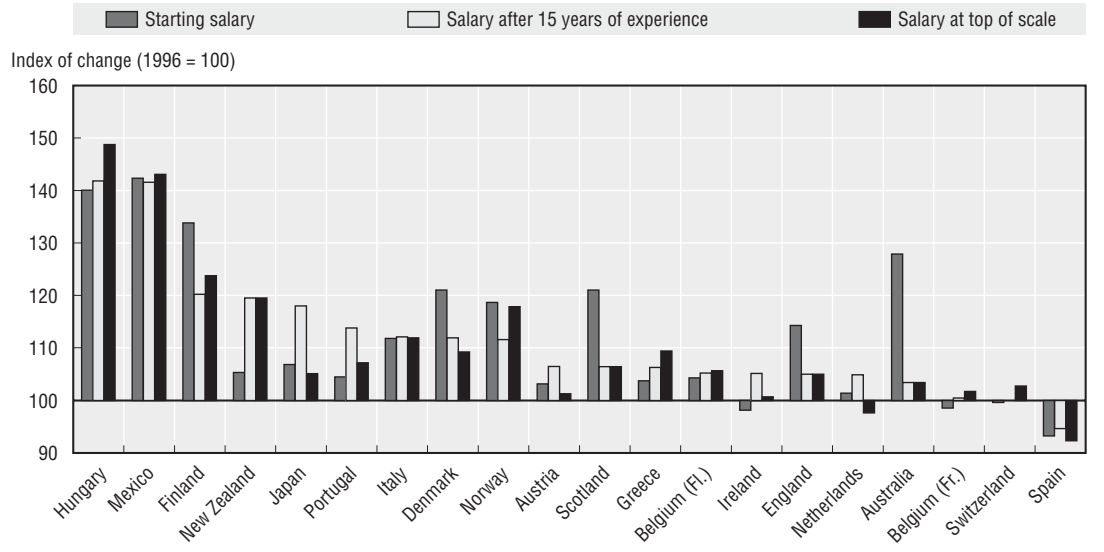
Table 3.2 provides another indicator of teachers' relative salary position in 26 OECD countries by comparing the average salary of secondary teachers with those of five selected occupations in the public sector (computer operator, librarian, social worker, university lecturer and civil engineer). In virtually every country university lecturers earn at least 10% more than secondary teachers. Relative to most of the other public sector occupations the salaries of secondary teachers are higher in Austria, Finland, Hungary, Mexico, New Zealand and Turkey, but seem to be less competitive in Iceland, Norway, Portugal and Sweden. In general, the former group of countries has fewer teacher shortages than the latter.

But relative salaries seemed to have declined over time despite real increases in absolute terms

Figure 3.19 shows the index of change between 1996 and 2002 in primary teachers' statutory salaries after adjusting for inflation (similar patterns are evident for secondary teachers). It shows that, in real terms, the statutory salaries of teachers rose in almost all 20 countries concerned. During this period, the increase in teachers' salaries was particularly marked in Hungary, Mexico, Finland and New Zealand. By contrast, statutory salaries of teachers declined in real terms by between 5 and 8% between 1996 and 2002 in Spain, and by small amounts for different career steps in Ireland, the Netherlands, the French Community of Belgium and Switzerland.

Figure 3.19. **Change in teachers' salaries between 1996 and 2002, primary education**

Index of change between 1996 and 2002 in teachers' salaries converted to 2002 price levels using GDP deflators (1996 = 100)



Note: The index is calculated as: Teacher salary in 2002 in national currency × 100/Teacher salary in 1996 in national currency × GDP deflator 2002. The data for Belgium in 1996 are based on Belgium as a whole.

Source: OECD (2004a).

Table 3.2. **Comparison of average secondary teachers' salaries with those of other public sector employees, 1999**

Average compensation of employees for selected occupations in the public sector relative to the average compensation of secondary teachers

Comparison with a secondary teacher's salary:

⬆ Average compensation in selected occupation is at least 10% higher than that of secondary teachers

⇔ Average compensation in selected occupation is between -10 and +10% than that of secondary teachers

⇩ Average compensation in selected occupation is at least 10% lower than that of secondary teachers

	Computer operator	Librarian	Social worker	University lecturer	Civil engineer
Australia	⇔	⇩	⇩	⇔	⇔
Austria	⇩	⇩	⇩	⬆	⬆
Canada	⇩	⇔	⇔	⬆	⬆
Czech Republic	⇩	⇩	⇔	⬆	⬆
Denmark	⇔	⇔	⇩	⬆	⬆
Finland	⇩	⇩	⇩	⬆	⬆
France	⇔	⬆	⇩	⬆	⬆
Germany	⇩	⇔	⇩	⇔	⇔
Greece	⇔	⇩	⇩	⬆	⇔
Hungary	⇩	⇩	⇩	⬆	⬆
Iceland	⇔	⇔	⬆	⬆	⬆
Ireland	⇩	⇔	⬆	⬆	⬆
Italy	⇔	m	m	m	m
Japan	⇩	m	m	⬆	⬆
Korea	⬆	⬆	⇩	⬆	⬆
Luxembourg	⇩	m	⇩	m	⇔
Mexico	⇩	⇩	⇩	⬆	⬆
Netherlands	⇔	m	m	⬆	⬆
New Zealand	⇩	⇔	⇩	⬆	⇩
Norway	m	⇔	⇔	⬆	⬆
Poland	⇔	⇩	⇔	⬆	⬆
Portugal	⇔	⬆	⬆	⬆	⬆
Spain	⇩	⬆	⇩	⬆	⬆
Sweden	⇔	⇔	⇔	⬆	⬆
Turkey	⇩	⇩	⇩	⬆	⇩
United States	⇩	⇔	⇔	⬆	⬆

m: Data not available.

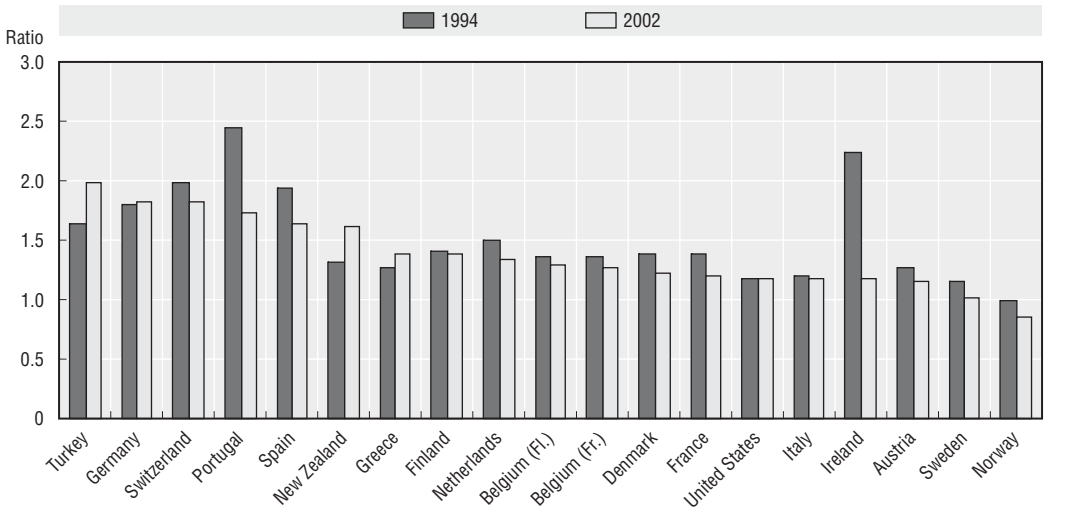
Source: Derived from OECD (2003), Table D5.3.

Notably, Figure 3.19 indicates that in a number of countries the salaries of some teachers increased more rapidly than others: (i) the salaries of beginning teachers increased more rapidly than other teachers in Australia, Finland, Denmark, Norway, England and Scotland; (ii) mid-career teachers earned comparatively large pay rises in Japan, Portugal and Austria; and (iii) experienced teachers were granted relatively large salary rises in Hungary, New Zealand and Greece, with proportionately smaller increases evident for experienced teachers in Belgium (French and Flemish Communities) and Mexico. The varying levels of increases for different types of teachers indicate a targeted and market-sensitive approach. A number of countries that have been experiencing shortages have concentrated salary rises for teachers in the early stages of their careers. This has been done in Australia, Denmark, England and Norway, for example. Each of these countries has reported an increase in teacher education numbers and, in Australia and England at least, there is some evidence of an increase in the academic quality of those studying teacher education.

Despite the fact that teachers' statutory salaries have increased in most countries since the mid-1990s, the evidence is that average community incomes (as indicated by GDP per capita) have increased at a faster pace. As Figure 3.20 shows, in 14 of the 19 systems with relevant data, the statutory salary of a lower secondary teacher in public schools with 15 years experience fell relative to GDP per capita between 1994 and 2002. The fact that teaching is largely a public sector activity would explain part of this relative decline since in many countries in recent years public sector salaries have grown more slowly than those in the private sector.

Figure 3.20. **Teachers' relative salaries over time**

Ratio of salary after 15 years of experience to GDP per capita; Public institutions, lower secondary education



Note: All countries for which data are available for both years considered are shown. Data for Turkey refer to primary education and common data were used for both Belgian Communities for 1994. The indicator is limited because it is based on statutory rather than actual salaries, financial benefits other than salaries are not included, and the reference point, GDP per capita, does not reflect salary levels in comparable occupations. A more appropriate indicator would compare teachers' actual salaries and other benefits with workers in professions requiring similar qualifications and at similar age levels. Such data are not yet available at international level.

Source: OECD (2001, 2004a).

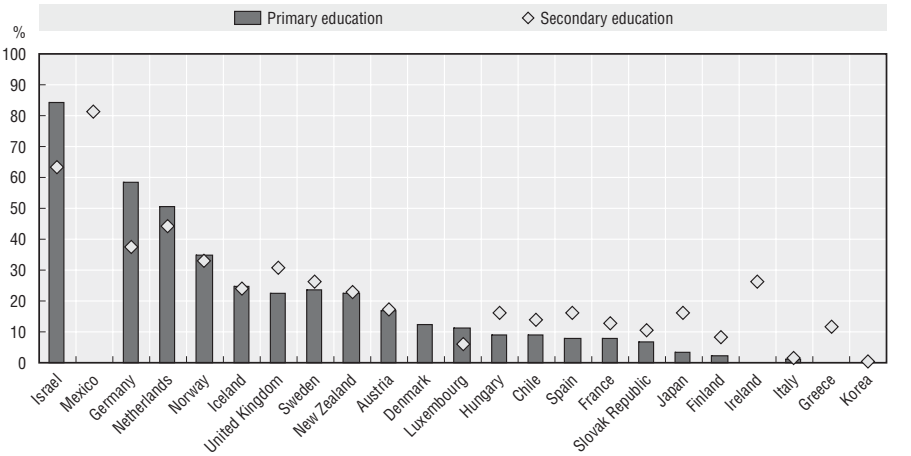
3.3.3. Job flexibility

Teaching needs to offer potential recruits a satisfactory work-life balance if it is to be competitive in the job market. As was shown in Figure 3.15A for France, 35% of beginning primary teachers named achieving a balance between professional and private life as one of the three main reasons for becoming a teacher. In the United Kingdom, the Equal Opportunities Commission (2002) argues that, while in the past teaching attracted entrants who saw it as "family friendly" because of the shorter contact hours and long holidays, this is no longer the case. Other employers and professions are now recognising the benefits for recruitment of providing a good work-life balance and greater opportunities for flexible working.

Table 3.3 documents the flexibility of a range of teaching employment conditions in public schools. Overall, teaching seems to offer considerable flexibility. Part-time teaching is possible in almost all countries; only in Greece, Japan and Korea are "regular" teachers unable to work part-time. Most countries also enable teachers to hold more than one part-time teaching job.[9]

Figure 3.21 shows the actual proportions of teachers in the different countries who are classified as working part-time (*i.e.* less than 90% of a normal full-time teaching load). The country average of part-time teaching is 19% in primary education and 24% in secondary education. The incidence of part-time teaching is more common in secondary education in 16 of the 21 countries for which data for both levels of education are available. Countries vary widely in the extent to which part-time teaching is used. In Israeli primary schools and Mexican secondary schools about 80% of the teachers are classified as part-time, as are approximately 50% of the primary teachers in Germany and the Netherlands. On the other hand, less than 5% of primary teachers in Finland, Greece, Ireland and Japan work part-time, and there are very few part-time primary or secondary teachers in Italy and Korea.

Figure 3.21. **Percentage of teachers who work part-time in public and private institutions, 2002**



Note: Teachers employed for less than 90% of the normal or statutory number of hours of work for a full-time teacher over a complete school year are classified as part-time teachers. Secondary education includes both general and vocational programmes. Data for primary education for Denmark, Iceland and Norway include lower secondary education. Data for secondary education for Iceland refer to upper secondary education only.

Source: OECD Education Database, 2004.

[9] This may not always reflect teachers' preferences but rather the difficulty of securing a full-time position.

Table 3.3. **Flexibility of teaching employment, public schools, 2004**

	Is part-time teaching possible?	Can teachers hold more than one part-time teaching job at the same time?	Can teachers take leave without pay for a career break and return to teaching with the same employment conditions? (maximum duration of such leave in parentheses)	Is sabbatical leave available for teachers? (in parentheses: the maximum duration of the sabbatical leave and the frequency with which teachers can take it)	Do teachers have to stay at the school during the regular school day while not engaged in classroom teaching?
Australia	For all teachers	Yes, for most states	Yes, generally to same salary step and often same teaching post if within agreed timeframe (usually 12 months)	Generally yes, e.g. under deferred salary schemes (usually for 12 months)	Yes
Austria	For all teachers	Yes	Yes, teachers return to the same salary step but not necessarily their previous teaching post (10 years)	Yes	No
Belgium (Fl.)	For all teachers	Yes	Yes, teachers return to the same salary step and to their previous teaching post (unlimited)	No	No
Belgium (Fr.)	For all teachers	Yes	Yes, teachers return to the same salary step but not necessarily their previous teaching post (6 years)	No	No
Canada (Qb.)	For all teachers	Yes	Yes, teachers with permanent post return to the same salary step and to their previous teaching post (2 years)	No	Depends on local agreements
Chile	For all teachers	Yes	Yes, teachers return to the same salary step and to their previous teaching post (6 months)	No	Yes, for full-time teachers
Denmark	For all teachers	Yes	Yes, teachers return to the same salary step and to their previous teaching post	No	No
Finland	For all teachers	Yes	Yes, teachers return to the same salary step and to their previous teaching post	No	No
France	For all teachers	No[1]	Yes, teachers return to the same salary step but not necessarily their previous teaching post	No[2]	No
Germany	For all teachers	No	Yes, teachers return to the same salary step but not necessarily their previous teaching post	Yes (typical duration of 1 year)	No
Greece	Only for temporary teachers and teachers on an hourly basis[3]	Yes	Yes, teachers return to the same salary step and to their previous teaching post (3 years)	Yes (up to 5 years in total throughout career but no more than 4 consecutive years)	Yes[4]
Hungary	For all teachers	Yes	Yes, teachers return to the same salary step and to their previous teaching post (in most cases, at the discretion of the principal)	Yes, at the discretion of the school principal (duration and frequency are not regulated)	No
Ireland	For all teachers	No, in primary education; Yes, in secondary education	Yes, teachers with permanent post return to the same salary step and to their previous teaching post (5 years)	Yes (up to 5 years in total throughout career, frequency decided on a case-by-case basis)[5]	Yes, in primary education; No, in secondary education
Israel	For all teachers	Yes	Yes, teachers return to the same salary step and to their previous teaching post, upon receiving the approval of regional authorities (3 years)	Yes (1 year, every 6 to 8 years)[6]	Yes, (2 hours a day beyond classroom teaching time)
Italy	Only for teachers with a permanent post	No	Yes, teachers return to the same salary step and to their previous teaching post (1 year)	No	No
Japan	Only for temporary teachers	Yes	Yes, teachers return to the same salary step and to their previous teaching post (3 years)	No	Yes
Korea	Only for teachers employed on an hourly basis	Yes	Yes, teachers return to the same salary step and to their previous teaching post (3 years)	No	Yes
Netherlands	For all teachers	Yes	Yes, teachers return to the same salary step but not necessarily their previous teaching post	Yes (1 year, every 12 years)	No
Slovak Republic	For all teachers	Yes	Yes, teachers return to the same salary step but not necessarily their previous teaching post	No	No
Sweden	For all teachers	Yes	Yes, teachers return to the same salary step but not necessarily their previous teaching post	No	Yes
Switzerland	For all teachers	Yes	Yes, teachers return to the same salary step but not necessarily their previous teaching post (generally, 1 year)	Yes (generally 6 months, generally once during career)	No
United Kingdom (Eng.)	For all teachers	Yes	Yes, teachers return to the same salary step but not necessarily their previous teaching post	No, but schools might exercise discretion over it	At the principal's discretion
United Kingdom (N.Irl.)	For all teachers	Yes	Yes, teachers return to the same salary step and to their previous teaching post	At the discretion of the employer	At the discretion of the employer
United Kingdom (Scot.)	For all teachers	Yes	At the discretion of the employer	At the discretion of the employer	No
United Kingdom (Wal.)	For all teachers	Yes	Yes, teachers return to the same salary step but not necessarily their previous teaching post	No, but schools might exercise discretion over it	At the principal's discretion
United States[7]	Generally, for all teachers	Generally, yes	Generally, yes	Generally yes (typically one year but sabbaticals are not widely practised at the school level)	Varies by school district

Definition: *Sabbatical leave* is defined as leave with part or full pay for study or other career-related purposes.

Notes:

1. However, teaching might be undertaken at different schools.
2. However, teachers benefit from a special leave for professional training of a maximum duration of 3 years, which includes full pay for one year.
3. Part-time teaching is possible for *regular* teachers under special circumstances (e.g. difficult pregnancy, secondment to other educational services).
4. Stipulated by law but not often observed in practice.
5. Teacher is required to employ a replacement at his/her own expense for the duration of the sabbatical. The maximum duration of 5 years for a career break considers leaves other than the sabbatical.
6. Teachers can take a sabbatical leave for two years on a half-time basis.
7. Policies vary by school district (local municipal education agencies) and it is difficult to express the average for the country as there are 15 000 school districts and no uniform policies across the country. Data on each district's policies regarding leave without pay are not available.

Source: Derived from information supplied by countries participating in the project. The table should be interpreted as providing broad indications only, and not strict comparability across countries.

Increasing the opportunities for part-time teaching could increase its appeal to a wider range of people. In particular, the United Kingdom background report notes that 70% of women returning to work in teaching after maternity leave choose part-time work if it is available. Rates of return to teaching by women are likely to increase if more part-time teaching is available. However, having a high proportion of part-time teachers can pose management and programme co-ordination difficulties for schools. Making part-time teaching more readily available could therefore necessitate more support resources in order to be successfully implemented.

Table 3.3 shows that in 15 of the 26 of the systems concerned, teachers are able to go on leave without pay for long periods and return to their previous salary step and teaching post. In another 10 countries teachers keep their salary step but not necessarily their previous post.

Flyer and Rosen (1997) found that, in the United States at least, teaching enables more flexible movements between paid employment and other activities. Their particular focus was female university graduates, and the extent to which leaving employment for child-rearing purposes imposed a financial penalty. While any break from paid work has a cost, female teachers suffered less than other graduate workers: in general, when female teachers resumed employment it was at the same salary step as when they left, whereas other female graduates experienced an average salary reduction of around 9% for each year spent away from paid employment. Their work also showed that such flexibility in teaching is valued highly by women.

Table 3.3 reveals a more mixed situation regarding the availability of paid leave for sabbatical purposes, with only ten countries making some form of provision. However, of these it seems that only a few countries have well-established sabbatical systems (Germany, Israel and the Netherlands). In Germany, almost all Länder offer a sabbatical year to teachers where the work due in that particular year is "worked in advance" in the preceding years – the teacher works longer hours for the same pay or the same hours for lower pay during a given period, which is then used to fund the sabbatical year. Teachers are also entitled to take a leave of absence for roles outside education or to work in school administration, teacher education institutions or school counselling.

Another aspect of job flexibility, although one that may have mixed effects, is whether or not teachers have to stay at the school during the regular school day while not engaged in classroom teaching. In 14 of the 22 systems which supplied such information, teachers do not. This is more likely to apply to secondary than primary teachers since the latter tend to be responsible for a class for most of the day.[10]

3.3.4. Job security

In most countries teachers are employed as part of the public service, and this involves a high level of job security once a tenured position is obtained. Estimates for Belgium (Flemish Community) indicate that although teachers on average have a lower salary than

[10] The country review visits generated varying perspectives on the phenomenon of teachers not being at school for the full school day. Some teachers expressed appreciation for this flexibility, as it enabled them to prepare for their teaching in ways that suited them best, and to combine this with family or other responsibilities. Other teachers pointed out that it was a necessity to prepare work away from the school because school facilities were so poor. On the other hand, a number of teachers and principals expressed concern about the practice as it hindered whole-school planning, and reduced opportunities for discussions with colleagues, parents and students.

other workers with equivalent qualifications, the relatively high levels of job security enjoyed by permanent teachers and the longer holidays available to them mean that their overall compensation package is broadly competitive with private industry (Hay Group, 2001). Teachers also benefit from a generous pension scheme. The regulated retirement age is 60 but it is possible to retire with a pension at age 58.

Although research on motivation for becoming a teacher indicates that job security is not among the most highly ranked reasons, it nevertheless forms part of the overall package. For example, as Figure 3.15A showed, around 25% of beginning primary teachers in France indicated that job security was one of the three main reasons for becoming a teacher. Research from Northern Ireland shows that among primary teacher trainees job security was ranked fifth out of 12 factors by males and seventh by females (Johnston *et al*., 1999).

The challenge at the present time is that the hurdles throughout the teaching career are typically quite uneven. The obstacles are generally quite high in the beginning of the career while the teacher has temporary status. During this period, the teacher may be appointed for short periods of time, may be replaced by teachers with permanent status, may need to move from one school to another, may teach in several schools in the same school year, and may be dismissed in a relatively straightforward manner. Once permanent status is acquired, the picture generally changes quite markedly, and the teacher acquires a significant level of job security together with virtually automatic salary rises over time.

As was noted in Section 3.1.12, in a number of countries beginning teachers currently find it quite difficult to obtain a permanent position, and the process can take several years. Work by Vandenberghe (2000) indicates that for beginning teachers in the French-speaking Community of Belgium, salary is a less important factor in deciding whether to stay in the profession than access to a full-time permanent teaching post. The estimates by the Hay Group (2001) for teachers' comparative compensation in the Flemish Community of Belgium indicate that the overall package for beginning teachers is not competitive with equivalent positions in private industry since beginning teachers lack job security.

The appropriate policy response is not to necessarily make it easier for beginning teachers to gain permanent job status and security. Rather, it is to provide more structured induction and support for teachers early in their careers, along with a more systematic process of performance review for established teachers. These issues are taken up further in Chapters 4 and 5, respectively.

3.3.5. Public perceptions of teachers and teaching

There is a frequently voiced concern that teaching has fallen in social standing over the years, and that this has made it harder to recruit talented individuals into the field. There is no comparative international evidence on this question, and only a few countries have any long-term national data. The individual country results are difficult to analyse because of differing methodologies, samples and questions asked. The scattered findings do not provide a solid basis for generalisations, and can be taken as indicative only. Based on the material included in the Country Background Reports, however, the social standing of teachers seems quite high, and seems to have changed little over the years.

Nevertheless, despite the relatively high status of teachers, and general public confidence in their work, many people also see teaching as difficult and demanding work. As most Country Background Reports note, media coverage of schools often focuses on the negatives such as student violence and misbehaviour, and this undoubtedly makes teaching seem a less attractive career.

Indicators of public perceptions drawn from the Country Background Reports are as follows.

- Australia (2003 data): teaching was the 4th highest ranked of 15 professions by the public for ethics and honesty (behind nurses, pharmacists and doctors), and was the only profession to significantly improve its ranking over the previous 20 years.

- Canada (Quebec, 2003): almost 90% of citizens expressed confidence in teachers, and they had higher confidence ratings than judges, police officers, notaries, bankers, priests or senior civil servants.

- Japan: in 1995 elementary school teachers were ranked 17th out of 56 professions in social status, which was little changed from their 1975 ranking (18th out of 82 professions).

- Switzerland (2002 data): 73% of adults believe that teachers enjoy "considerable" or "great" respect, and this proportion had not changed since 1993.

- England (2000 data): 94% of adults agree that teaching is a highly skilled job, 84% of parents believe that teachers do a good job at their child's school, and 81% of non-parents think that teachers do a good job. A 2003 public opinion survey indicated that being a teacher ranked second (12% of respondents) behind doctor (29%) on a list of 11 occupations as the job they would be most proud for a member of their family to do (Taylor Nelson Sofres, 2003). Teaching had shown the largest gain since the first survey in 2001 when it then ranked third (9%) behind being a lawyer.

Some negative public perceptions of teaching are also evident.

- Switzerland (1999 data): 65% of individuals believed that teachers are not adequately motivated for their work, and 54% felt that teachers were too focused on passing on knowledge and were not sufficiently concerned with the all-around education of students. On the other hand, the same survey indicated that 74% of people felt that teachers would give their best in the interests of students.

- England (2003 data): when asked the reasons for not choosing teaching as a job they would be most proud for a member of their family to do, 18% indicated there are too many discipline/behaviour problems in schools, 17% indicated other careers were better, 13% said the job is too stressful and 12% said that the pay is too low.

- Other research from the United Kingdom indicates that the main aspects of teaching that deter young people from considering it as a career are low pay, paperwork and dealing with disruptive pupils (Haydn *et al*., 2001).

Teachers seem to perceive that their job has lower status than wider public surveys would indicate. For example, a 1998 survey in Korea indicated that 75% of parents ranked teachers' social status as average or higher, whereas 60% of teachers ranked their social status as low or very low. In Austria, a 2000 survey indicated that about two-thirds of teachers are not happy with the image of the teaching profession, and that this is their major source of job dissatisfaction; and yet other information indicates that the social standing of teachers in Austria is relatively high. In the United Kingdom, a very large 2003 survey indicated that only 30% of teachers felt that the public respected the teaching profession,

which contrasts with the much more positive findings from public opinion surveys cited earlier.

Such results imply that teachers' self-image needs to be improved. In Italy, 75% of high-school teachers surveyed in 1999 felt that teaching's prestige had declined during the 1990s; in 1990 an equivalent survey found that 65% of high-school teachers felt that teaching's prestige had declined during the 1980s. Almost half of the 1999 survey group expected that teaching's prestige would decline further during the forthcoming decade.

Australian research indicates that the image of teaching is much more positive among those who have close contact with schools: parents with school-age children generally are more positive than non-parents; and those who are engaged in school activities are more positive than those who are not. This suggests that building stronger links between the schools and the community will help to enhance the status of teaching. Box 3.6 outlines recent initiatives by education authorities and teacher unions to improve teaching's public image in Austria, Brandenburg (Germany), Finland, he Slovak Republic and Sweden.

Box 3.6. **Improving the image and status of teachers in Austria, Brandenburg (Germany), Finland, the Slovak Republic and Sweden**

In *Austria* there are extensive communications (including websites) from schools and provincial education authorities about school operations and educational "success stories"; campaigns by teachers' unions to better inform people about why teaching is important and what it really involves; and public recognition from the federal authorities for outstanding schools and teachers, through the "education Oscars" programme.

The Land of *Brandenburg* in Germany has been proactive in taking measures to improve public appreciation of schools and the image of teachers. These include: public ceremonies when new teachers are appointed and experienced teachers retire; the award of a prestigious public prize to projects in schools and in the field of social education; sponsored trips for teachers to educational fairs held in other Länder; and the public presentation of 50 projects from schools, chosen by competition, during the annual festivities of Brandenburg Day. These projects are selected to showcase student initiative and creative and socially engaged teachers, and the winning schools are awarded substantial prizes.

In *Finland* in 2002, the Trade Union of Education launched the "Finland Needs Teachers" project to raise awareness of teachers' work and its significant contribution to society. The project is aimed at conveying a more realistic and positive image of teaching to the general public.

In the *Slovak Republic*, the establishment of an annual "Teacher Day" as a teacher holiday in honour of the anniversary of Comenius' birth has provided a high-profile way to showcase teaching and to express public appreciation for teachers' work.

In *Sweden* the *Attractiv Skola* (Attractive Schools) project, a joint venture of education authorities, teacher unions and the principals' professional association, is encouraging local authorities to form stronger links between schools, universities and the business community. Local authorities apply to join the project whose aims include improving community awareness of school programmes, job exchanges between schools and businesses, developing networking skills among schools and teachers, and improving the appeal of schools as places of work.

3.3.6. The structure of initial teacher education

The structure of teacher education and the requirements to obtain a teaching qualification have an important impact on the decision about whether to become a teacher.

Traditionally, teacher education programmes have been oriented towards attracting school leavers, or recent graduates, and have required people to make a relatively early decision about becoming a teacher. Before people could start teaching in schools they generally had to complete a full programme of initial teacher education. Such requirements can limit the pool of prospective applicants. For example, Hanushek and Pace (1995) concluded that university students in the United States are less likely to complete education majors in states that require candidates for teaching licences to complete a relatively larger number of education-related courses. This requirement raises the cost of obtaining an education degree, especially for university students who either plan to teach for a few years before moving to another occupation or want to obtain a teaching licence as "insurance" in case opportunities in other fields prove unattractive. Similarly, the authors conclude that requiring applicants for teaching licences to score above a pre-specified cut-off on a standardised test (National Teacher's Examination) reduces the number of university students who train to become teachers and the number of university graduates who obtain teaching licences.

Countries face difficult challenges in balancing the requirements to increase the supply of prospective teachers while at the same time maintaining or hopefully improving teacher quality. However, most countries are now seeking more flexible approaches to both teacher education and entry into the field. These new approaches are intended to help address teacher shortages, as well as to bring new types of skills and experience into schools.

Table 3.4 summarises the current provision of alternative pathways into teaching. Seventeen of the 25 systems offer pathways into teaching for so-called "side entrants", that is people from other careers who do not hold full teaching qualifications. The most common approach is to organise special training programmes in "traditional" teacher education institutions (12 of 17 countries). A few other approaches exist such as training programmes within adult education (Belgium, Flemish and French Communities), distance learning (Chile, Denmark, the Netherlands, the Slovak Republic and Sweden) and school-based programmes (England and Wales and the Netherlands). The duration of such alternative programmes is typically between one and two years, but great variability exists. In some countries, pedagogical preparation can be acquired within one year: Belgium (Flemish Community); Denmark; England and Wales; Finland; France, Germany; Israel and the United States.

In almost all countries for which information is available (15 of 16 cases), it is possible to start working as a teacher before completing the preparation in pedagogy (the exception is Quebec). Where people have to acquire their pedagogical preparation before starting work as a teacher, they typically do not receive any remuneration. In most countries side-entrants are able to start teaching without full teaching qualifications (16 of 20 countries, the exceptions being Australia, Austria, Denmark and Ireland).

Table 3.4. **Alternative pathways into teaching, public schools, 2004**

	Preparation in pedagogy					
	Alternative programmes available	Duration	Before starting work as a teacher or while on the job?	Do *side-entrants* receive remuneration while acquiring their teaching qualifications (where this occurs before starting work as a teacher)?	Are *side-entrants* able to start teaching without full teaching qualifications?	Do *side-entrants* have their work experience acquired outside education recognised for the definition of their starting salary?
Australia	Special training programmes in *traditional* teacher education institutions in most states	Varies from 1 to 4+ years	Both but usually before starting work as a teacher	Generally no but internship programmes available in two States	Usually no	Generally no but sometimes yes e.g. public service work experience
Austria	Special training programmes in *traditional* teacher education institutions	2-3 years	Both	Yes for teachers of vocational education; No for all other teachers	Yes for teachers of vocational education; No for all other teachers	Yes up to a maximum of 5 years of experience if related to subject being taught
Belgium (Fl.)	Special training programmes in adult education institutions	Flexible, but a minimum of two periods of 6 months	Both	No	Yes	For all teachers: work experience from the public service recognised For vocational teachers only: up to a maximum of 10 years of experience recognised
Belgium (Fr.)	Special training programmes in adult education institutions	*m*	Both	No	Yes	For vocational teachers only: up to a maximum of 6 years of experience recognised
Canada (Qb.)	Special training programmes in *traditional* teacher education institutions	2.5 years	Before starting work as a teacher	No	Yes	Yes if experience is deemed relevant: first ten years of experience outside education are recognised as 1 year experience in teaching; half of all other years beyond initial ten are also recognised
Chile	Special training programmes in *traditional* teacher education institutions and institutions using distance learning	No more than 2 years	While on the job	*m*	Yes	No
Denmark	Special training programmes in *traditional* teacher education institutions and institutions using distance learning	1-2 years	*m*	No	No	On a case-by-case basis
Finland	Non-regular special training programmes	1 year	While on the job, generally	*m*	Yes	Yes
France	Direct access to the final year of initial teacher education following success in examination ("troisième concours")	1 year	While on the job	Yes	Yes	For vocational teachers only: a third of the years of experience recognised
Germany	Special training programmes in *traditional* teacher education institutions, especially in vocational education	1-3 years	While on the job	Yes	Yes	Yes if related to the subject being taught
Greece	None	*a*	*a*	*a*	*m*	*m*
Hungary	None	*a*	*a*	*a*	Yes in the last year of coursework	Yes all years of other work experience
Ireland	None	*a*	*a*	*a*	No	*a*
Israel	Special training programmes in *traditional* teacher education institutions and other types of institutions	1 year	Both	Yes	Yes	Yes if related to the subject being taught
Italy	None	*a*	*a*	*a*	*m*	*m*
Japan	None	*a*	*a*	*a*	Yes	No
Korea	None	*a*	*a*	*a*	Yes	No
Netherlands	(1) special programmes in traditional teacher education institutions; (2) special programmes using distance learning; (3) training programmes mostly school-based but under responsibility of teacher education institution	(1) 4 years; (2) and (3) maximum of 2 years	(1) Before starting work as a teacher; (2) and (3) while on the job	(1) No; (2) and (3) Yes	Yes	Yes all years of other work experience
Slovak Republic	(1) special programmes in traditional teacher education institutions; (2) special programmes using distance learning.	1-2 years	Both	Yes	Yes	Yes, partially
Sweden	Special training programmes in *traditional* teacher education institutions, often using distance learning	1.5 years	Both	Yes	At the discretion of the school principal	*m*
Switzerland	Special training programmes in *traditional* teacher education institutions	6 months for preparation courses plus between 3.5 and 4.5 years	Both	Yes	Yes	*m*
United Kingdom (Eng. and Wal.)	Undergraduate, postgraduate and employment-based	1-4 years	Both	Trainees on postgraduate certificate (PGCE) receive a bursary; Trainees on employment-based routes are paid as unqualified teachers	England: Yes (for up to 4 years); Wales: As long as no qualified teacher is available (up to 2 years for overseas teachers).	At the discretion of the school or local education authority
United Kingdom (N.Irl.)	None	*a*	*a*	*a*	*m*	*m*
United Kingdom (Scot.)	None	*a*	*a*	*a*	*m*	*m*
United States[1]	Yes	1-3 years	Both	Generally not	Yes	Generally not

Definitions: *Alternative pathways into teaching* refer to mechanisms which grant entry into the teaching profession to individuals with work experience outside education and who do not hold full teaching qualifications. For this purpose, the individuals entering teaching via alternative pathways are referred to as *side-entrants*. Programmes for recent graduates to acquire teaching qualifications (*e.g.* a teaching qualification after graduation in a subject field) are not included. Similarly, retraining or refresher courses for individuals returning to teaching are excluded. *Preparation in pedagogy* refers to programmes principally designed to provide preparation in pedagogy to *side-entrants* which are necessary to acquire a formal teaching qualification. Even if individuals with work experience outside education and no teaching qualifications can opt for the traditional concurrent or consecutive models of initial teacher education, these are not included. Duration of preparation in pedagogy is for an individual enrolled on a full-time basis.

Notes: *a* Information not applicable because the category does not apply; *m* Information not available.

1. Policies vary by school district (local municipal education agencies) and it is difficult to express the average for the country as there are 15 000 school districts and no uniform policies across the country.

Source: Derived from information supplied by countries participating in the project. The table should be interpreted as providing broad indications only, and not strict comparability across countries.

Only 3 of 18 countries fully recognise the work experience of side-entrants in determining their starting salary in teaching (Finland, the Netherlands and Hungary). Other countries recognise such work experience under certain circumstances: if "deemed relevant" or related to the subject taught (Austria, Quebec, Denmark, Germany, Israel, England and Wales), or if it was acquired in the public service (Australia and Belgium, Flemish Community). Both the Flemish and French Communities in Belgium and France recognise relevant work experience of vocational teachers. Four countries generally do not recognise the work experience of side-entrants for salary setting purposes (Chile, Japan, Korea and the United States).

As is discussed further in Chapter 4, although the data are limited, there seems to be growth in the number of people entering teaching via alternative pathways. A broad conclusion from the research, mainly from the United States, is that alternatively certified teachers generally perform as well as those prepared through traditional teacher education programmes. However, it also seems to be the case that participants in alternative pathways need strong supervision and ongoing support to maximise their chances of success.

3.4. Priorities for Future Policy Development

This chapter has documented a range of country concerns about teaching's attractiveness as a career. Around one-half of the participating countries face teacher shortages either at the present time or in the near future as large numbers of teachers reach retirement age, even after allowing for projected declines in student enrolments. Even where general teacher supply and demand are approximately in balance, countries report concerns about shortages of specialist teachers in areas such as mathematics, science, ICT and languages. There is evidence that teacher shortage problems are most acute in schools serving disadvantaged or isolated communities. The other set of concerns about teacher supply are more qualitative in nature and reflect trends in the composition of the teacher workforce in terms of academic background, gender, competencies, cultural background and so on. Such concerns are raised even by countries which currently have a large oversupply of teachers.

Country experience suggests that policy responses are needed at two levels. The first is concerned with the nature of the teaching profession itself, and seeks to improve its general status and competitive position in the job market. The second involves more targeted responses to particular types of teacher shortages. It recognises that that there is not a single labour market for teachers, but a set of them, distinguished by school type and personal characteristics like gender and subject specialisation.

An important consideration for teacher policy is the consistent finding that the responsiveness to incentives depends on the characteristics of individuals. For example, individuals in certain academic disciplines, such as science, and teachers with higher academic credentials are less likely to be attracted to teaching in the first place, and less likely to return to teaching once they leave. Women are likely to particularly value the potential flexibility that teaching can offer, so improved leave provisions, opportunities for part-time employment and career breaks, and child care are likely to be particularly important to their career choices. Such findings support the case for targeted policies, and yet there are often pressures for "one size fits all" policy responses.

The policy suggestions in this section are drawn from the Country Background Reports, the country review visits, and other research. The suggested policy priorities do not necessarily apply to all of the participating countries since in some cases such policies are

already implemented, while in others they may not apply because of different country circumstances in regard to teacher demand and supply.

Improving the image and status of teaching

A key part of any general strategy must involve reminding teachers that they are highly skilled professionals doing important work. Surveys from a number of countries report that teachers' self-image is relatively low, and indeed lower than wider public opinion of the value of their work. Teacher role models are likely to be an important influence on students' interest in the career.

Research shows that people who have close contact with schools – such as parents who assist in classrooms, or employers who have students in workplace learning programmes – have much more positive attitudes towards teachers than people with little direct contact. This suggests that building stronger links between the schools and the community will help to enhance the status of teaching. Programmes that provide opportunities for tertiary students to visit schools and observe teachers' work are another way of increasing awareness of the importance and rewards of a teaching career. Such initiatives can be reinforced with general campaigns in the media to enhance the image of the profession by highlighting its importance for the nation as well as its sophistication and complexity, and the intellectual excitement it can generate. Surveys of what teachers themselves value about their work provide insights about what needs to be emphasised: teaching's social relevance; working with young people; creativity; autonomy; and working with colleagues.

Countries also report success with promotional programmes targeted at groups who are "non-traditional" entrants to teaching, such as people in their thirties and fourties from other professions who are looking for a career change, and young graduates for whom teaching could provide an opportunity to build a wide range of skills before moving on to other employment. Such initiatives reinforce the message that teaching need not necessarily be seen as a lifetime career, and that there is flexibility to cope with a more dynamic job market.

There is also a need to promote the benefits of a teaching career to groups who are often under-represented among teacher ranks, such as males and those from minority cultural backgrounds. Such strategies would include promoting positive teacher role models from similar backgrounds, investigating the reasons behind apparently negative views about teaching and correcting misconceptions about the job, and disseminating information about teaching through forums and media that are relevant to such groups.

Improving teaching's salary competitiveness

Although the data are somewhat limited, and there are a number of country exceptions, the general picture is that teachers' salaries relative to those in broadly comparable occupations have declined since the early 1990s. Although other aspects of teachers' employment conditions, such as vacations, relative job security and pensions, are often more generous than in other occupations, teachers' total compensation package is probably less competitive than it once was.

A broad conclusion from the research is that in countries where teacher salaries are low relative to professions requiring similar qualifications, teacher supply appears to be quite "elastic": that is, for a given percentage increase in teachers' relative salaries, the supply of potential teachers increases by a larger proportion. In countries where teacher salaries are already relatively high, teacher supply seems to be less elastic: for such countries to achieve a given increase in teacher supply requires a proportionately larger salary rise.

Nevertheless, the large size of the teaching workforce means that to raise salaries across-the-board by even a few percentage points is very costly. It may be more cost-effective, therefore, to target larger salary rises to the key groups in short supply. For example, as discussed in the previous chapter, countries that have in recent years provided much larger pay rises for beginning teachers have tended to see an increase in teacher education enrolments, some indication of increased academic quality among new student teachers, and increased numbers of young people joining the profession. Similar results have been reported for targeted salary rises in the nursing profession (Simoens and Hurst, 2004). Improving teaching's general salary competitiveness is also likely to improve its appeal to males and members of minority groups who are currently under-represented in the profession.

Targeted policy initiatives are also evident in regard to attracting particular types of teachers. A number of countries have introduced special programmes and incentives designed to attract more teachers for subjects such as mathematics, science, technology, and vocational subjects. Fee waivers, scholarships and forgivable loans are some of the financial incentives being provided to attract such people into teacher education, and salary bonuses and recognition of work experience are being provided for those who already have qualifications that are in short supply. Some countries have also considered financial incentive schemes to attract males and members of minority groups into teacher education, although the scope of these can be limited by equal opportunities legislation.

Improving employment conditions

Teaching will improve its competitiveness as a career choice if it is able to provide flexible conditions of employment. Employers are increasingly recognising the need to provide workers with a good work-life balance and opportunities to combine work with family responsibilities and other activities. Increasing the opportunities for part-time teaching could increase its appeal, as could opportunities throughout the career to gain experience outside schools through sabbatical leave, extended leave without pay, and job exchanges with industry. Although all such initiatives involve costs, they need to be set against the benefits of lower staff turnover, improved morale, and bringing new knowledge and skills into schools.

Expanding the supply pool of potential teachers

Countries are seeking to attract new sorts of people into teaching – not just to overcome shortages, but also to broaden the range of backgrounds and experiences in schools. Some countries have had a long tradition of requiring industrial experience for teaching in vocational programmes, but this is now being broadened to other types of teachers. The potential sources of teachers can be expanded by opening the teaching profession to individuals with relevant experience outside education. A useful model is provided by countries that recognise the skills and experience gained outside education in terms of starting salary, and which enable appropriately qualified entrants to start working and earning a salary before completing teacher training qualifications. These are generally complemented by more flexible approaches to teacher education that offer opportunities for part-time study and distance learning, and which give credits for relevant qualifications and experience. Some countries have indicated that alternative pathways into teaching seem to be particularly appealing to under-represented groups such as males and those from minority cultural backgrounds.

Another way of expanding the potential supply pool is through an increased mobility of teachers across educational levels, something that can be achieved by ensuring that different teacher education programmes have more elements in common, and by providing more opportunities for retraining and upgrading teachers' skills. Former teachers also provide a major potential source of recruits in many countries. Strategies to tap this source include maintaining contact with former teachers to keep them informed of educational developments and job opportunities, and targeted retraining schemes to prepare them for teaching new school programmes.

Making reward mechanisms more flexible

In most countries teachers with similar qualifications and experience who are working at a given level of schooling (primary, upper secondary and so on) are paid according to a single salary scale. The use of single salary schedules makes it very difficult to raise salaries to attract more qualified teachers to hard-to-staff schools or in subject areas experiencing shortages without also raising salaries across-the-board. The teacher labour market is diverse, and teacher recruitment difficulties vary by type of school, subject specialisation, and region. Also, in many countries the problems of teacher shortages and high turnover of staff are felt most acutely in schools that are already disadvantaged.

The research evidence suggests that in a number of countries the current incentives are insufficient to attract teachers to work in challenging schools or difficult locations. Some countries use administrative rules that require teachers to spend designated periods of time in particular types of schools before they are eligible for promotion or more favoured locations, and one or two countries require teachers to change schools periodically. For countries where such rules would not be feasible, or there would be concerns about the quality implications of teachers being required to work in certain locations rather than choosing to do so, the incentive structure needs to be used in a more flexible manner. For instance, substantial salary allowances for teaching in difficult areas, transportation assistance for teachers in remote areas, or bonuses for teachers with skills in short supply will help ensure that all schools are staffed with teachers of similar quality. Research from the health sector suggests that incentives to encourage doctors to work in rural areas (including support for spouse employment and accommodation) are more cost-effective than schemes that require doctors to serve a designated amount of time in rural areas (Simoens and Hurst, 2004).

Also worthy of attention are non-salary strategies, such as lower class contact times or smaller classes, for schools in socially difficult areas or which have particular educational needs. The incentives need to be sufficiently large to make an ongoing difference in the quality of teaching in disadvantaged schools.

Improving entrance conditions for new teachers

Policies to encourage more people to enter teaching are unlikely to pay off if high-quality candidates find it hard to gain teaching posts. The best candidates, who are likely to have good job prospects outside teaching, may not be willing to wait in a lengthy queue or to endure a succession of short-term teaching assignments in difficult schools. Well-structured and resourced programmes of induction for new teachers and selection processes that ensure the best candidates get the available jobs are critical in these cases. Reducing the weight given to seniority in ranking applicants for teaching vacancies will also help reduce the risk of new teachers being disproportionately assigned to difficult schools. Issues of induction, and teacher selection and assignment, are taken up further in Chapters 4 and 5, respectively.

Rethinking the trade-off between the student-teacher ratio and average teacher salary

Much of the preceding discussion has focused on ways to improve teacher supply. However, when demand exceeds supply, another strategy is to look at ways of reducing demand, or at least not increasing it further. Broadly speaking, further spending on schools can be used to either reduce student-teacher ratios (and thereby employ more teachers and reduce average class size), or increase teachers' average salaries, or some combination of the two. While targeted class size reductions can be beneficial for some students (such as those in the early years of school or those from disadvantaged backgrounds), across-the-board reductions in class size are expensive and unlikely to lead to substantial learning gains, at least in the range of class sizes currently existing in most countries. The literature identifies several cases in which the expansion of the teaching force required to staff a policy of smaller classes appears to have led to a decline in the average quality of new teaching recruits – and thereby put at risk the hoped-for benefits of smaller classes.

An alternative strategy would be to focus additional spending on increasing teachers' average salaries and employing more support staff in schools. This strategy would aim to both make teaching more attractive and, through the greater use of support staff, enable teachers to focus more on their specialist expertise. Indeed, there is some evidence from recent years that more countries are placing greater weight on increasing teacher salaries than on reducing student-teacher ratios. There could even be arguments for reconfiguring staffing in some schools so that fewer teachers are employed but they are paid substantially more and provided with much more extensive support.

At the other end of the spectrum, there are some countries with an oversupply of teachers and which have both high student-teacher ratios and average teacher salaries. In such cases there would be an argument for focusing additional school spending on employing more teachers, rather than increasing teachers' average salaries, and thereby improve teaching and learning conditions in schools.

Capitalising on an oversupply of teachers

Not all countries currently face teacher shortages, and some have many more qualified applicants than available teaching positions. In countries with high student-teacher ratios, this can provide an opportunity to increase teacher employment and improve conditions in schools. Countries experiencing teacher oversupply also have the opportunity to be much more selective about those who are employed. There is evidence among some participating countries of a broadening of teacher selection criteria and processes away from a reliance on examination results. Candidates are now being required to undertake interviews, undergo aptitude tests, prepare lesson plans, and demonstrate their teaching skills.

School systems with too many qualified teachers are looking for ways to adapt teacher education and professional development to deal with oversupply in a constructive manner. Countries in these circumstances need to ensure that the quality of teachers' preparation is not undermined by the large number of candidates – *e.g.* through quantitative pressures in institutions of teacher education, difficulty in providing traineeships in schools, or fewer opportunities for professional development activities. An oversupply of teachers has resulted in some countries from a policy that largely guarantees graduates of initial teacher education employment in public schools. Changing this policy so that employment as a teacher depends on demonstrated need and individual competence is clearly important, along with making initial teacher education programmes broader so that individuals obtain

skills and qualifications that provide other employment opportunities when teaching jobs are not available.

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