

The Quality of the Teaching Workforce

**Are there reasons
for concern?**

**Which incentives attract
individuals into the teaching
profession?**

**How does the school system
determine teacher needs?**

**What labour market features
affect teacher recruitment?**

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of teachers be improved?**

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Introduction

The quality of the teaching workforce is a major consideration in any nation's aspirations for an educational system of high quality. Teachers form the core of the school system and a wide range of research studies has confirmed the importance of teacher quality for student learning. Thus, the development of policies seeking to improve the quality of teachers and ensure that all students receive quality teaching is a central concern for governments.

Key aspects include the responsiveness of teachers to incentives, the trade-offs governments face in defining the number of teachers needed, the impact of the mechanisms which match teachers to schools, the role of teacher education and professional development in shaping teacher skills, and school processes which foster the effectiveness of teachers.

The size of the teaching workforce is considerable in all countries. Across OECD countries, on average, school teachers comprise 2.6% of the total labour force, and teaching is the largest employer of graduate labour. In addition, expenditure on teachers' compensation is typically very high relative to total current expenditure on schools – 63% for the OECD countries, on average, in 2000.

Teacher policy is currently high on the agenda of OECD countries. Substantial policy initiatives are under way in a range of areas including improving teacher recruitment and supply, reforming initial teacher education and professional development, restructuring teachers' work and careers, and strengthening leadership in schools. In addition to questions about the changing roles of teachers and the attractiveness of teaching overall, there are also important issues concerned with diversification of teachers' roles, more flexible pathways into teaching, incentive structures rewarding the skills and performance that most closely relate to student learning, as well as teacher development and accountability. ■

Are there reasons for concern?

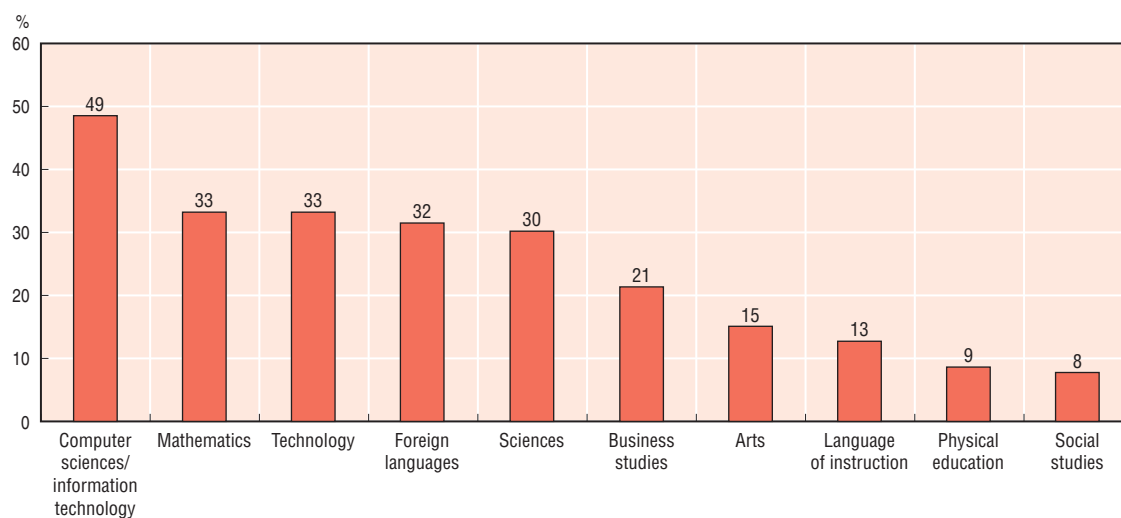
There are serious concerns in many OECD countries about how to maintain an adequate supply of good quality teachers, and further develop the skills of those already in the profession. Survey data from the recent OECD International Survey of Upper Secondary Schools indicate that principals are reporting major difficulties in recruiting teachers in computer sciences, mathematics, technology, foreign languages and sciences (see Figure 1). The 2000 Programme for International Student Assessment (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. Other data reveal that in some countries a significant proportion of teachers do not hold a full teaching qualification, the proportion teaching in areas in which they are not fully qualified is strikingly high in some key subjects, and attrition and turnover rates have increased in recent years.

In most countries teaching is an ageing profession, which suggests that large numbers of retirements will occur in the next 5-10 years (see Figure 2). In addition, the attractiveness of teaching as a profession – as indicated by relative salaries and social status – has declined substantially in some countries in recent years. In 14 of the 19 countries with relevant data, the salary of a teacher with 15 years experience grew more slowly than GDP per capita between 1994 and 2001 (see Figure 3).

Teacher quantity and quality are closely linked. When school systems face quantitative shortages they typically either: *i*) lower the qualification requirements – e.g. appoint a less qualified applicant or a teacher with qualifications in another area; or *ii*) raise teaching loads – e.g. increase class size or the number of classes assigned to teachers. These strategies generally ensure that all classes are staffed with teachers, yet they raise concerns about the quality of teaching and learning.

Figure 1. **There are major difficulties hiring qualified teachers in key subjects**

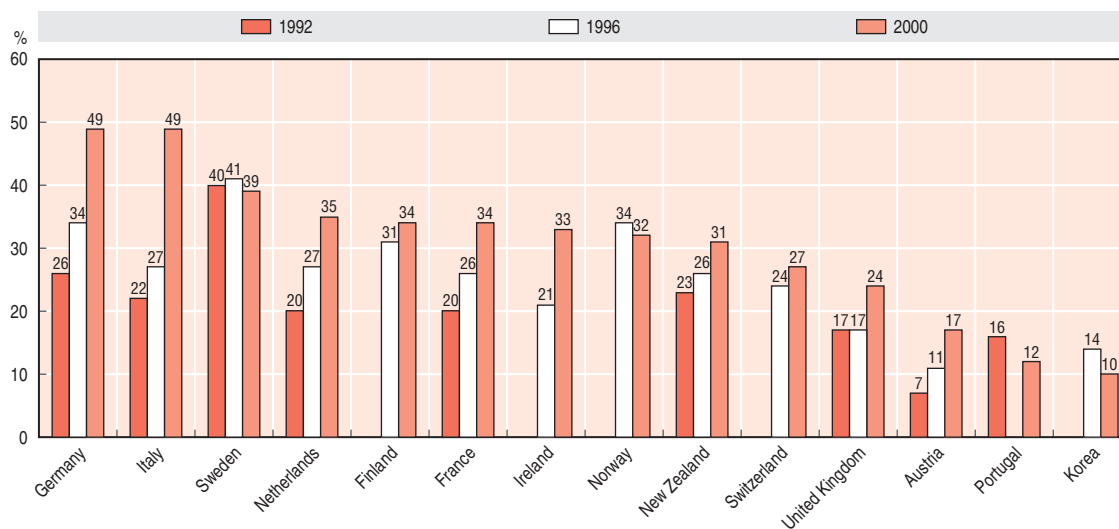
Cross-country mean percentage of upper secondary students attending schools where the principal reported that hiring fully qualified teachers is difficult, 2001



Note: Subjects are ranked in descending order of the cross-country mean percentage of upper secondary students attending schools where the principal reported that hiring fully qualified teachers is difficult. Proportions by study area are calculated for cross-country means. The countries who participated in the ISUSS survey were: Belgium (Fl.), Denmark, Finland, France, Hungary, Ireland, Italy, Korea, Mexico, Norway, Portugal, Spain, Sweden and Switzerland.

Source: OECD International Survey of Upper Secondary Schools (ISUSS) database, 2003. Published in *Education at a Glance 2003*.

Figure 2. The teaching workforce is ageing
Percentage of teachers aged 50 years and over, lower secondary education, 1992-2000



Note: Countries are ranked in descending order of percentage of teachers aged 50 years and over in 2000, lower secondary education. While data for 2000 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 2000 data for Ireland and the Netherlands include the upper secondary sector. Data for 1992 for Germany refer to the former Federal Republic of Germany and include government-dependent private institutions. 2000 data for Switzerland include only public institutions and 2000 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 2000 figures for Austria and Switzerland refer to 1999.

Source: OECD Education Database. Published in *Education Policy Analysis 2002*.

Another fundamental concern is ensuring that all students have high-quality teachers. For countries more severely affected by shortages, there is evidence that students in disadvantaged areas find themselves in classes with the least experienced and least qualified teachers. Moreover, some countries lament the lack of teachers from ethnic minorities and immigrant groups at a time when the numbers of these students are increasing. Also, many countries are concerned that the proportion of males in teaching is declining, especially in light of research indicating the importance of men as role models for male children and adolescents.

Across the OECD as a whole, however, a considerable number of countries still benefit from a plentiful pool of individuals wishing to become teachers (e.g. Austria, Korea and Portugal). But this is no guarantee that such countries do not face significant challenges. All countries report concerns about ensuring that the existing teacher workforce has the

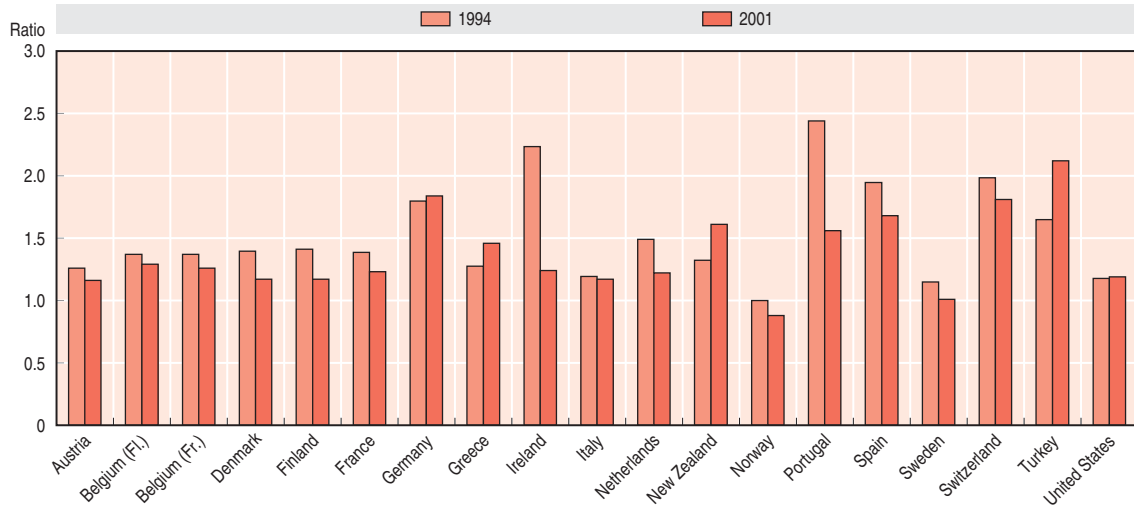
skills and knowledge needed to meet the demands of modern schooling and more diverse student populations. It is also important to ensure that able young people and established professionals from other careers can find teaching positions in schools and are not lost to the profession. This is not easy to achieve in a situation of teacher over-supply, but it is vital to ensure an inflow of fresh ideas and enthusiasm and to recruit the next generation of education leaders. ■

Which incentives attract individuals into the teaching profession?

Salaries and alternative employment opportunities are prominent in determining the attractiveness of teaching. The empirical evidence suggests that relative pay can influence: *i) the decision to become a teacher*: graduates' choices are associated with relative earnings in teaching and non-teaching

Figure 3. **Teachers' relative salaries are declining in most countries**

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 Education at a Glance 2001 and 2003.

occupations, and their likely growth over time; *ii) the decision to remain in teaching*: teachers who are better paid generally stay in teaching longer while those who are likely to be able to get higher-paid jobs outside teaching have on average shorter teaching careers; and *iii) the decision to return to teaching after a career interruption*: returning rates are higher among those teaching subjects that provide the fewest opportunities for employment elsewhere. Relative earnings seem to be less relevant when the decision is *whether to enrol in initial teacher training* and *whether to switch teaching locations*.

Despite the undoubted importance of relative salaries and the formal career structure, they form just part of the range of factors that shape the attractiveness of teaching. Research indicates that other key aspects are:

- working conditions (e.g. class size, teaching load, school leadership, availability of support staff, quality of facilities and instructional materials, safety);

- professionalism of teaching (e.g. certification standards, professional autonomy, opportunities for collaboration and participation in decision-making, opportunities for professional development);
- flexibility of the job (e.g. leave benefits, part-time options, flexibility of schedule);
- job security;
- the structure of initial teacher education and the requirements to obtain a teaching qualification;
- job satisfaction from working with students and seeing them develop.

Another important aspect for policy-making is that responsiveness to incentives depends on the characteristics of individuals (e.g. work experience, gender, academic ability, subject area). This suggests that it is difficult to develop policies that can be applied across-the-board with equally effective results. The evidence presented on how shortages vary by subject

area, level of schooling and regional location suggests that it may be more productive for policy to focus on the factors that may attract particular types of people into teaching, and teachers to particular schools, rather than on teacher supply in more generic terms. Also, it seems that experiences in the early years help determine whether a teacher will have a long career, suggesting that policies countering teacher attrition should focus on relatively recent entrants. Attrition is also greater in certain academic disciplines, such as science, and for teachers with higher academic credentials. Women are more likely to leave teaching for family reasons; men for alternative careers. It would thus be pertinent to increase the attractiveness of teaching to women with disrupted careers and to provide more supportive services such as childcare. Such findings support the case for targeted policies, and yet there are often pressures for “one size fits all” responses. ■

How does the school system determine teacher needs?

The demand for teachers depends on a limited number of factors, only some of which are open to direct policy influence. A prominent one is the aggregate student population determined by the age-structure of the school-age population, enrolment and in-grade retention rates, and starting and ending age of compulsory education. The size of the school-age population is largely outside the control of the government. Nevertheless, the demographic outlook in most OECD countries is relatively favourable in terms of the number of students in schools – student numbers are projected to decline by 2010, especially in primary education, which indicates some easing of teacher recruitment problems.

Other major determinants of the demand for teachers are the average class size, the average teaching load, and the average number of required learning hours for students. Typically, adjustments are made to these factors to smooth the effects of rapid enrolment changes, to accommodate established staffing patterns and budgets and, in the case of enrolment declines, to take into account existing contractual agreements with teachers. Policies pertaining to the curriculum are the dominant influence in defining the skills of teachers needed and influence the demand for teachers in specific subject fields.

The room for manoeuvre is subject to financial and industrial considerations. For example, the overall budget planned for teacher salaries together with existing salary scales limits the number of teachers who can be hired. Some difficult trade-offs need to be made between the average size of classes and the average salary of teachers. On the one hand, reduced class sizes potentially improve learning conditions for students and working conditions for teachers, but require more teachers to be employed, other factors being equal. On the other hand, larger class sizes provide scope for raising teachers’ salaries and thereby potentially attracting more qualified people to the profession. The literature identifies several cases in which the expansion of the teaching force required to staff the policy of smaller classes appears to have led to deterioration in average teacher quality in schools – and thereby put at risk the hoped-for benefits of smaller classes. ■

What labour market features affect teacher recruitment?

Distinctive features of the teacher labour market shape the way that it works and how teachers are matched to schools. First, in most countries teacher employment is part of the public sector, and is strongly influenced by the size of public spending on schools and the general conditions governing public sector work. Government often has a key influence on the supply of teacher education programmes and the requirements to certify teachers. Moreover, the government also often regulates the functioning of the teacher labour market by establishing bargaining laws, reward mechanisms, or recruitment and selection processes.

Second, the highly segmented nature of the teacher labour market reduces the scope for a flexible and open market. In most countries entry to teaching requires certain pre-determined qualifications, teachers at different levels of schooling and in different subject areas often require specialist qualifications, and internal mobility is very limited.

Third, teacher labour market institutions also play an important role. The level of centralisation of bargaining is among the most influential. Salaries and/or levels of employment are typically determined through a process of collective bargaining involving various levels of government and teacher unions, which reduces the flexibility of the teacher labour market.

In general, the characteristics and performance of individual teachers are not reflected in negotiated compensation packages, and entry from outside the profession is restricted. Also, to a large extent, reward mechanisms ignore the stratified nature of the market – e.g. it is often difficult to pay more to attract teachers in short supply. Contractual arrangements such as the type of appointment (e.g. fixed-term versus permanent), the institution of a probationary period, or the existence of mechanisms for dismissal have a large influence over the rate at which the teacher labour market is able to adjust to mismatches between demand and supply. For instance, the risks associated with making a selection error are reduced if a probationary period allows identification of those who are not suited to the profession.

Fourth, another powerful influence on the efficiency of the teacher labour market is the organisation of the recruitment and selection of teachers. The process leading to the hiring of skilled teachers is complex and relatively expensive. Employers and employees are faced with substantial costs associated with the acquisition of information influencing decisions. This often leads employers to use more easily measured qualification criteria (e.g. certification status, years of experience, university attended) as opposed to a broader assessment of candidates (e.g. interviews, specific work assignments, class teaching performance and peer reviews) that may give a better guide to teaching quality. In addition, the often limited participation of schools in the selection of their teachers considerably reduces the extent to which teachers meet school needs. ■

What role does the preparation and development of teachers play?

The distribution of skills of the teaching workforce depends to a large extent on initial and in-service teacher education and certification policies and programmes. As may be expected, research shows that good teachers need a sound conceptual and practical understanding of the subjects they are teaching (reading, mathematics, history and so on) as well as the pedagogical knowledge and skills to present material in a well-structured way, motivate students, assess student progress, and continually adjust their teaching to individual student needs. Having said this though, it is not at all clear which forms of teacher education are most effective over the longer term.

Certification status is a measure of teacher qualifications that combines aspects of knowledge about subject matter and about teaching and learning. A standard certificate generally means that a teacher has been prepared in an accredited teacher education programme and/or has completed course work in the field to be taught with a minimum of education credits. In addition, obtaining a licence might also depend on passing a national teacher examination and/or having a short teaching experience. The research available suggests that, generally, certification status is associated with higher teacher effectiveness.

There is general recognition that a high quality of initial teacher education is necessary, but not sufficient, for ongoing teacher effectiveness. The demands on schools are changing so quickly, and advances in knowledge are developing so fast, that ongoing professional development is essential for all teachers. In the past, educational policy has tended to emphasise initial teacher education rather than in-service education and training, but now the balance is shifting. The teaching career is being increasingly seen in “lifelong learning” terms. The impression is that professional development is very diverse and the outcomes are very dependent on the particular circumstances in which it is undertaken. But it seems clear that some forms of on-the-job training, especially when they are linked to school development plans and undertaken collegially, can be very effective. In this way, policy-makers are appropriately moving from the question “should we support in-service professional development?” to the question “what kinds of in-service training should be supported?”, and how can all teachers – and not just the most motivated – be encouraged to continue to develop?

Teacher education and certification frameworks are under challenge as a result of the change of the role of the teacher. The range of tasks teachers are seen as responsible for has widened significantly. As a consequence, many countries now see a need for revising teacher education programmes accordingly. In some countries, educational authorities and teacher organisations have developed job profiles and definitions of core responsibilities that reflect the new “enriched” but also more demanding profession of teaching. Some examples of new areas of teacher responsibility are:

- assessing and counseling individual learners;
- teaching in multi-cultural classrooms;

- developing civic and social skills;
- integrating students with special needs;
- providing professional advice to parents;
- working and planning in teams;
- being part of a learning community (within the school and/or in a network of teachers);
- evaluation and systematic improvement planning;
- and management and shared leadership. ■

How can the effectiveness of teachers be improved?

Able teachers are not necessarily going to reach their full potential in settings that do not provide appropriate support or sufficient challenge and reward. First, the work environment needs to be stimulating, collegial and effectively led. School management and leadership are of critical importance in valuing and supporting teachers; and thereby retaining the most effective people in the profession. Also, the demands for teachers to take on a range of new functions raise questions about whether their specialist expertise should become more focused on meeting student needs, and some of their current administrative and non-teaching tasks should be reallocated to other professionals or support staff. Moreover, teachers often do not have good facilities at school for preparation, planning and consultation.

Second, teachers need tools to effectively adapt to school realities and teaching repertoires to make the best out of students' learning experiences. For instance, teachers are expected to foster social cohesion and integration by means of adequate classroom management techniques for disabled children and cultural knowledge about the different ethnicities. They also need to inform and to consult parents on processes of learning and education. Teaching repertoires need also to be sensitive to the individual needs of students. Through ongoing classroom assessment (formative assessment), teachers can gauge student progress and understanding, and adjust teaching methods appropriately.

Third, teachers need opportunities to develop their skills and to take on new roles. Substantial professional development is needed to ensure that schools

and teachers meet emerging new needs, and that quality standards continue to improve. Similarly, a structured and systematic induction process is central to support and retain beginning teachers. Very often the problems of teacher supply relate less to the recruitment of new graduates and more to the high turnover of new teachers. The teaching profession could also benefit from further differentiation not only to respond to the new needs of schools but also to provide a greater variety of opportunities for contributing to school development and promotion. The creation of roles such as mentor/coach of beginning teachers, co-ordinator of professional development activities, subject co-ordinator and student counsellor, would help meet pressing school needs.

Fourth, teachers need to have their work recognised and rewarded as a result of an assessment process. The latter should comprise a reflection by the individual being assessed (self-evaluation) and an external evaluation leading to a developmental plan for professional improvement, and be undertaken in a broader context of school evaluation and planning. A useful complement to be encouraged is peer evaluation, an informal and low cost feedback strategy. ■

For further information

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INES Statistics and Indicators on teachers and teaching:

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For further reading

- **Education Policy Analysis**, 2002, Chapter 3, The Teaching Workforce: Concerns and Policy Challenges. ISBN 92-64-19930-6, € 20, 136 p.
- **Teacher Education and the Teaching Career in an Era of Lifelong Learning**, OECD Education Working Paper No. 2 (Coolahan, J., 2002).
- **What Schools for the Future?**, 2001. ISBN 92-64-19526-2, € 30, 252 p.
- **Education at a Glance: OECD Indicators**, 2003. ISBN 92-64-10233-7, € 49, 456 p.
- **Completing the foundation for lifelong learning: An OECD survey of upper secondary schools**, 2004. ISBN 92-64-10372-4, € 28, 172 p.

Related Internet sites

- *Attracting, Developing and Retaining Effective Teachers*, www.oecd.org/edu/teacherpolicy.
- *Schooling for Tomorrow*, www.oecd.org/edu/future.

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