

Chapter 4

DEVELOPING TEACHERS' KNOWLEDGE AND SKILLS

Summary

The pace of social change and the heightened expectations of schools have broadened and deepened teachers' roles. This chapter discusses the different approaches that countries are taking to develop teachers' knowledge and skills, and reviews promising initiatives in initial teacher education, induction, and professional development.

Countries benefit from clear and concise statements or profiles of what teachers are expected to know and be able to do. Such profiles are necessary to provide the framework to guide initial teacher education, teacher certification, teachers' on-going professional development and career advancement, and to assess the extent to which these different elements are being effective. The teacher profiles need to reflect the student learning objectives that schools are trying to achieve, and profession-wide understanding of what counts as accomplished teaching.

More flexible structures of initial teacher education are proving effective in opening up new routes into the teaching career. The stages of initial teacher education, induction and professional development need to be much better interconnected to create a lifelong learning framework for teachers. Initial teacher education must not only provide sound basic training in subject-matter knowledge, pedagogy related to subjects, and general pedagogical knowledge; it also needs to develop the skills for reflective practice and research on-the-job.

Countries are rethinking the role of field experiences in schools. These now tend to happen earlier in teacher education, and are framed to provide a broad experience of what it means to be a professional teacher. Well-structured and resourced induction programmes for new teachers are vitally important in ensuring a good start to the career.

Effective professional development is on-going, includes training, practice and feedback, and provides adequate time and follow-up support. Successful programmes involve teachers in learning activities that are similar to ones they will use with their students, and encourage the development of teachers' learning communities. There is growing interest in developing schools as learning organisations, and in ways for teachers to share their expertise and experience more systematically.

Teacher education is high on the policy agenda in many countries. Countries are seeking to ensure that teacher education is attractive to high-quality entrants, and that it adequately prepares teachers for the demands of modern schooling.

The ageing of the teacher workforce has sharpened such concerns. The need to recruit and prepare large numbers of new teachers to replace those who will retire in the next 5 to 10 years has placed initial teacher education under considerable pressure. Reforms underway in a range of countries include providing more flexible pathways into teacher education, strengthening its research and knowledge base, lifting the status of teaching qualifications and giving trainee teachers closer contact with schools. However, while improving initial teacher education is important, it is insufficient on its own.

The teaching career is increasingly seen in lifelong learning terms, with initial teacher education providing the foundations. Therefore, countries are also seeking ways to provide better support for beginning teachers, and opportunities and incentives for ongoing professional development throughout the career. As noted in the German background report: “it is a particular feature of the work of teachers that the full development of professional competency, the necessary specialisation, the continuing expansion of knowledge, the necessary gain in experience and assurance ... and having to deal with frequently and variously changing problem areas ... can only occur in the job itself”.

Most professions emphasise the need for pre-service education to provide a solid platform for ongoing learning and career development. Although this view has been present to some extent in teacher education, it has not often been made explicit through structures and programmes. As the Country Background Reports generally acknowledge, the stages of initial teacher education, induction and professional development need to be much better interconnected in order to create a more coherent learning and development experience for teachers.¹ In broad policy terms, this means that not only does the quality of initial teacher education need to be enhanced, but that induction and professional development need to be strengthened and their overall weighting in teacher development increased.

There is also increasing recognition of the need to encourage more informal ways of learning by teachers through more systematic reflection, innovation, joint problem-solving, networking and sharing of expertise and experience. Such ideas, which are sometimes brought together through concepts such as “knowledge management” or “schools as learning organisations”, are starting to be developed in a number of countries. For schools to become learning organisations requires that teachers have the skills and motivation to be active in creating professional knowledge, in sharing it with their colleagues, and in integrating research and development into their work.

This chapter discusses the different approaches that countries are taking to develop teachers’ knowledge and skills, and reviews policy issues and promising initiatives in initial teacher education, induction, and professional development in different forms. It commences by outlining trends and developments that are causing a rethink of existing approaches.

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.

4.1. Teachers' Roles are Changing

The demands on schools and teachers are becoming more complex. Society now expects schools to deal effectively with different languages and student backgrounds, to be sensitive to culture and gender issues, to promote tolerance and social cohesion, to respond effectively to disadvantaged students and students with learning or behavioural problems, to use new technologies, and to keep pace with rapidly developing fields of knowledge and approaches to student assessment. Teachers need to be capable of preparing students for a society and an economy in which they will be expected to be self-directed learners, able and motivated to keep learning over a lifetime: “in their preparation, their professional development and their working lives, today’s teachers must get a grasp of and a grip on the knowledge society in which their pupils live and will work” (Hargreaves, 2003, p. xvii).

An analysis of recent policy reforms in OECD countries (OECD, 2003) indicates the scope of the changes underway in schools and their implications for teachers. First, almost all countries have initiated policies to lift the quality of student learning. This emphasis has included more clearly specifying the key skills and knowledge that students need to achieve (*e.g.* Germany and Japan), introducing external evaluations of student learning and school performance (*e.g.* the Netherlands and Norway), and strengthening teacher expertise (*e.g.* in teaching reading in the United States). Second, the adoption of frameworks that specify learning objectives and accountability requirements have generally been part of a broader reform package that also provides schools with more operational autonomy (*e.g.* in Finland and Italy). Third, issues of social disadvantage and student alienation continue to be major concerns, with countries implementing programmes aimed at reducing the number of young people without qualifications (*e.g.* France), improving student motivation (*e.g.* the United Kingdom), or reducing differences in education opportunities across regions (*e.g.* Korea).

In reflection of this school reform agenda, most of the Country Background Reports indicate that teachers are now expected to have much broader roles, taking into account the individual development of children and young people, the management of learning processes in the classroom, the development of the entire school as a “learning community” and connections with the local community and the wider world.

Some examples of areas of broadened teacher responsibility mentioned in Country Background Reports are as follows.

At the individual student level

Initiating and managing learning processes. There is a lot of debate over how teachers should impart the curriculum. As well as providing instruction, teachers are increasingly expected to encourage students to take a more active role in their own learning. In a number of countries providing stimulating settings of learning and helping students to develop problem-solving skills and to monitor and direct their own learning are seen to have become core responsibilities of teachers.

Responding effectively to the learning needs of individual learners. Teachers are expected to observe and diagnose learning strengths and weaknesses and to provide guidance to individual learners and their parents.

Integrating formative and summative assessment. Teachers need to be “assessment literate” with regard to both summative and formative methods. They need to be familiar with standardised assessment tests, to be able to use test results in a diagnostic manner, and to adapt curricula and teaching in response to student achievement.

At the classroom level

Teaching in multicultural classrooms. Classrooms are becoming increasingly diverse with students of different cultural and religious backgrounds. Teachers are expected to work for social cohesion and integration by using appropriate classroom management techniques and applying cultural knowledge about different groups of students.

New cross-curricular emphases. Some school systems, such as the United Kingdom, have introduced areas such as citizenship education, covering community involvement, social and moral responsibility, and political learning, which can be taught separately, or integrated across the whole school curriculum.

Integrating students with special needs. School systems are increasingly offering integrated education for students with disabilities and learning difficulties, and teachers are expected to develop knowledge on special education, on appropriate teaching and management processes, and in working with support personnel.

At the school level

Working and planning in teams. Teachers are now expected to collaborate and to work in teams with other teachers as well as other types of staff. They need social and management skills to co-operate, to set common goals and to plan and monitor the attainment of goals set collaboratively.

Evaluation and systematic improvement planning. In many systems, schools are now required to use data gathered from self-evaluation or through testing and external evaluation to inform school development processes. This calls for new skills in data gathering and analysis, and in communicating the results to parents. In addition, school development requires project management and monitoring skills.

ICT use in teaching and administration. Teachers are now expected to integrate the use of ICT into their professional practice and to keep up to date with ICT developments and applications.

Projects between schools, and international co-operation. It is becoming more common for schools to collaborate on joint projects, and for schools to develop links with schools in other countries. Such programmes require teachers with leadership and organisational skills, and the capacity to work and communicate effectively in a range of different settings.

Management and shared leadership. In most countries decision-making on schooling has become more decentralised in recent years, especially in regard to the organisation of instruction. An increase in the number and range of decisions taken at school level has led to new managerial tasks in schools, and teachers in some countries are expected to participate in and contribute to school leadership.

At the level of parents and the wider community

Providing professional advice to parents. School systems increasingly emphasise the crucial importance of close co-operation between schools and parents. Consequently, teachers need to be trained to inform and to consult with parents.

Building community partnerships for learning. To gain additional support and to provide for broader learning experiences, schools in some countries are expected to build partnerships with agencies in the community, such as libraries, museums, and

employers. Teachers need to have the skills to make those connections and to sustain them over time.

Although teaching in many countries has long involved most of the tasks outlined above, the pace of social change and the heightened expectations of schools, have broadened and deepened teachers' roles. As Coolahan (2002) has argued, the fact that since the mid-1990s many countries have adopted a lifelong learning perspective in education policy “adds a fresh impetus to many progressive trends which have been affecting the career of teaching” (p.14). Teaching is increasingly seen as a professional activity requiring a careful analysis of each situation, choice of objectives, development and monitoring of suitable learning opportunities, evaluation of their impact on students' achievement, responsiveness to students' learning needs and a personal or collective reflection on the whole process. As professionals, teachers are expected to act as researchers and problem-solvers, reflecting on their own practice and assuming greater responsibility for their own professional development.

The concern expressed by a range of Country Background Reports is that existing approaches to developing teachers' knowledge and skills do not adequately reflect the tasks that teachers are now expected to fulfil. As is discussed below, in some countries government entities and teacher organisations have responded by developing professional standards and definitions of core responsibilities reflecting the new “enriched” but also more demanding profession of teaching. These new profiles and standards of teaching are being used to shape initial teacher education and professional development. Such profiles can also contribute to improve public understanding of what modern teaching actually involves.

4.2. Implications of Research on Effective Teachers

The importance of teacher quality for student achievement was summarised in Chapter 2. This section discusses in more detail the attributes of effective teachers that teacher education and professional development need to be oriented towards.

Teaching is a complex task that involves interactions with a great variety of learners in a wide range of different circumstances. It is clear there is not a single set of teacher attributes and behaviours that is universally effective for all types of students and learning environments, especially when schooling varies in many important regards across different countries. Effective teachers are people who are competent across a range of domains.

A consistent finding is that effective teachers are intellectually capable people who are articulate and knowledgeable, and able to think, communicate and plan systematically. Students achieve more with teachers who perform well on tests of literacy and verbal ability (Gustafsson, 2003; Rice, 2003).

Positive relationships have also been found between teachers' academic qualifications and student achievement. Using data from the Third International Mathematics and Science Study on 13-year-olds' achievement in 39 countries, Wößmann (2003) found that teachers' level of education is positively related to student performance, with the effects stronger in science than in mathematics. On the other hand, a United States study by Goldhaber and Brewer (2000) found a positive relationship between teachers' degrees in mathematics and student achievement, but not in science.

The review by Wilson *et al.* (2001) found a positive connection between teachers' preparation in their subject matter and student performance, but also noted that more subject matter study is not always better. They concluded that there is a threshold level of

subject matter knowledge necessary for effective teaching, but beyond that point higher levels of subject matter knowledge – at least as measured by academic qualifications – are not necessarily associated with student gains. This conclusion supports that of Monk (1994) who found that teachers' content preparation, as measured by coursework in the subject field, is positively related to student achievement in science, but that the relationship is curvilinear, with diminishing returns to student achievement of teachers' subject matter courses above a threshold level. A review prepared for the Education Commission of the States concluded that research provides moderate support for the importance of solid subject matter knowledge but that it is generally “not fine-grained enough, however, to make it clear how much subject-matter knowledge is important for teaching specific courses and grade levels” (Education Commission of the States, 2003).

Studies looking at both subject matter expertise and teaching methodology have shown that knowing how to teach also has positive effects on student achievement (Wenglinsky, 2000, 2002; Gustafsson, 2003; Wayne and Youngs, 2003). However, evaluating the impact of pedagogical preparation is made difficult by the fact that there is such a potentially wide range of different courses under this label, including courses in subject-specific teaching, and more generic courses in learning theory, educational psychology, sociology, assessment, measurement and testing, classroom management and so on. These courses are offered in different sequences and with differing content and intensity. Rice (2003) concludes that pedagogical coursework contributes to teacher effectiveness when combined with content knowledge. The United States research has been characterised as providing some support for the conclusion that pedagogical preparation contributes to effective teaching, especially subject-specific courses and those designed to develop core skills such as classroom management, student assessment and curriculum development (Education Commission of the States, 2003).

The evidence, though, is less clear about the benefits of advanced qualifications in education. In the United States, for example, several States require that teachers earn a Master's degree within a specific period of time after initial hiring. Most such degrees are in education rather than in subject-matter content, and Rivkin *et al.* (2001) find no evidence that having a Master's degree improves teacher skills. An additional consequence of such a policy is the fact that it raises the cost of choosing teaching as a career and may dissuade potentially effective teachers from entering the profession (Murnane, 1996). However, as a counter-example, all general education teachers in Finland are required to complete a five to six -year course (a Master's degree) before starting in the job, and this is seen as contributing to the profession's relatively high social status and attracting competent people to become teachers.

As was noted in Chapter 2, there is broad agreement that many important aspects of teacher quality are not captured by indicators such as qualifications, experience and tests of academic ability. The most readily measured attributes of teachers account for only a small part of why some teachers seem to be more effective than others (Goldhaber *et al.*, 1999).

In an influential study, Shulman (1992) identified five broad areas for the development of professional knowledge and expertise in teaching:

- Behaviour – effectiveness is evidenced by teacher behaviour and student learning outcomes.
- Cognition – teachers as intelligent, thoughtful, sentient beings, characterised by intentions, strategies, decisions and reflections.

- Content – the nature and adequacy of teacher knowledge of the substance of the curriculum being taught.
- Character – the teachers serve as moral agents, deploying a moral-pedagogical craft.
- Teacher knowledge of, and sensitivity to, cultural, social and political contexts and the environments of their students.

Studies by Lingard *et al.* (2002) and Ayres *et al.* (2000) identified a range of personal competencies that make a difference to the quality and effectiveness of teaching: sound subject knowledge; communication skills; ability to relate to individual students; self-management skills; organisational skills; classroom management skills; problem-solving skills; a repertoire of teaching methods; teamwork skills; and research skills.

Hattie (2003) drew on an extensive review of research to identify five major dimensions that distinguish highly competent teachers. Expert teachers are those who can: identify essential representations of their subject, based on how they organise and use their content knowledge; guide learning through classroom interactions by creating optimal classroom environments; monitor student learning and provide feedback; promote effective outcomes through the manner in which they treat students, and their passion for teaching and learning; and influence student outcomes by engaging students, providing challenging tasks and goals, and enhancing “deep” learning or understanding. Hattie argues that the attributes of expert teachers should be viewed as forming a profile, rather than a checklist: “There is no one necessary facet, nor the equal presence of all, but the overlapping of many facets into the whole” (p. 10).

Given that there is a range of attributes that contribute to teacher effectiveness, and a variety of ways in which they can be developed, it is important to continually monitor and evaluate the effects of teacher preparation and development to ensure that their emphases are not too narrowly based and that potentially important aspects of teaching are not being neglected. The criteria that teacher employers use to select and promote teachers have a critical role to play in this regard. Although there are a lot of uncertainties and contradictions in the research on teacher effectiveness, it does at least raise doubts about relying on a limited range of academic qualifications in determining who is likely to be a competent teacher, and who should advance once in the job.

Many, if not most, of the key attributes of successful teachers will only become evident once they are in the job. Many skills will be best developed once people are working as teachers rather than through pre-service education. Formal, measurable attributes of teachers are necessary but not sufficient; they must be complemented by processes that enable important but less tangible qualities of teachers to be identified. Such processes are necessary when determining who enters teacher education, the criteria for qualification as a teacher, and the basis on which teachers are selected for employment and career advancement.

As a result of the emerging research on teacher effectiveness, an increasing number of countries are developing common teaching profiles and standards against which teacher education and development, and conditions in schools, may be assessed (see Section 4.4 below). Although the concept of standards in teacher effectiveness is multi-dimensional and not easy to grasp, the insights from research and the approaches being tried within countries show promising steps forward.

4.3. Initial Teacher Education

4.3.1. *Entrance into teacher education*

Most countries have multiple entry points into the field of teaching. In some countries, the large majority of teacher trainees enrol directly from secondary school, while other countries attract a greater percentage of individuals who have already completed a tertiary qualification or who come into teaching from other professional backgrounds. Entry varies by type of preparing institution and by the school level which candidates plan to teach. Teachers are prepared at widely varying institutions: teacher colleges and universities, public state-run and private institutions. In some countries (*e.g.* the United States, which has examples of both, and Canada) the students contribute to the costs of teacher education in the form of tuition payments. In other countries (*e.g.* France and Germany), there is no tuition fee for teacher education.

In many European countries entry to teacher education is largely open to all those who have completed secondary education, while in others more restrictive forms of entry apply. In general terms, entry to concurrent teacher education courses is based mainly on final secondary school results, while entry to consecutive courses (which are more common for secondary teachers) depends to a larger extent on performance in university studies. In countries where teaching has high social status – such as Finland, Ireland and Korea – there is strong competition for entry into teacher education. For example, in Finland, in primary education where there are many more applicants than available places in teacher education, selection involves two phases. The first phase is nationwide and is based on final secondary school results, previous study record and relevant work experience. The second phase is university-specific and may include essays, individual and group interviews, and observed teaching and other group situations.

Some of the Country Background Reports express a concern that enrolment in initial teacher education programmes is often a fall-back option in case the graduate labour market deteriorates. For example in Belgium (Flemish Community) in 2000/01, more than half of the first-year students enrolled in upper secondary teacher education courses indicated that it was their second or third choice. In Hungary, about 20% of all full-time higher education students are enrolled in teacher education courses, and only a minority of these are ever likely to work as teachers.

Setting tighter entrance criteria for teacher education is difficult in countries with a tradition of largely unrestricted entrance to higher education. As well, the numbers who want to enter teacher education cannot be considered in isolation from the availability of other higher education courses: in the case of Hungary teacher education enrolments are high, despite government funding ceilings, partly because there is a lack of accredited degree programmes in other fields. The issue of entrance criteria must be addressed, though, because of the risk that with largely unrestricted entry the system of teacher education is stretched too thin. If teacher education programmes in such countries admitted fewer students, and if those admitted were more suited for teaching and more interested in a teaching career, the available resources could be used more effectively.

Entrance criteria are perhaps even more important for countries seeking to expand teacher education to help address teacher shortages. For example, as part of its teacher education reforms, the canton of Zürich in Switzerland has opened the universities of applied sciences in education to people with professional work experience but without the final secondary school (*Matura*) certificate. In order to evaluate and validate the competencies of these candidates, an assessment was developed to evaluate their skills in

communication, co-operation, knowledge transfer and self-management. As another example, Box 4.1 outlines an Israeli approach to lifting the quality of entrants by linking changes to entry requirements to course length and structure.

Box 4.1. Attracting high quality students into teacher education in Israel

In addition to increasing the quality of applicants by upgrading entrance requirements, a new initiative on behalf of the Israeli Ministry of Education began in 1999 aims to attract excellent students with exceptionally high entrance scores to teachers colleges by offering them an individually tailored and challenging programme. The goal is to reach about 5% of the total number of student teachers, with the intention that these individuals will eventually become educational leaders.

The programme itself is a three-year programme (instead of a four-year programme but with the same amount of hours), which is tailored to each student. It includes regular courses as well as individual programmes, self-study and tutorials. The fourth year is an induction year that is spent mostly in schools. The selected students are provided with full scholarships and priority in job appointments. At present, the programme is being run in 19 colleges with 800 students (it commenced with four colleges and 70 students). Full evaluation results are not yet available, but initial results show high satisfaction among the participants and extensive integration into the teaching profession.

Source: Libman et al. (2002).

4.3.2. The structure of initial teacher education

The structure of initial teacher education differs markedly across countries. Table 4.1 summarises some key features.

Concurrent versus consecutive models

Broadly speaking, Table 4.1 shows that there are two different models of teacher education.² A concurrent model is a programme in which academic subjects are studied alongside educational and professional studies throughout the duration of the course. In some instances, study in the academic and professional subjects may be awarded separate qualifications, but in most cases a single qualification, such as Bachelor of Education, is applied. Concurrent models are common in preparing primary teachers. As Table 4.1 shows, in all countries except France and Germany primary teacher education is structured along concurrent lines (with some countries offering both concurrent and consecutive models at this level). The large majority of countries also provide concurrent teacher education programmes for lower and upper secondary education teachers. Indeed, in 10 countries upper secondary general teacher education is provided mainly through the concurrent model: Belgium (Flemish Community); Canada (Quebec); Greece; Hungary; Ireland; Italy; Japan; Korea; Turkey and the United States.

Concurrent models offer the potential benefits of allowing for a more integrated learning experience as pedagogical training and subject-matter training are taking place simultaneously. Concurrent models are, however, in some ways less flexible than consecutive models because students are required to decide about their entry into teacher education very early in their university studies. Concurrent models can also make it potentially difficult and costly to enter teacher education after having completed a degree in

² The data in Table 4.1 refer to 2001 and in some countries teacher education structures have changed since that time.

a discipline other than education, although a number of countries do provide some credit recognition for studies in other fields. The concurrent approach may also be less appealing where the job prospects of teachers are uncertain: having a qualification tagged as “education” or “teaching” could be less attractive to other potential employers even though in other respects the content may be equivalent to other degrees.

A consecutive model means a programme of professional training in pedagogy and teaching that is taken after having completed a first degree in a discipline related to the subjects taught in schools. As Table 4.1 shows, consecutive models tend to be more common in preparing secondary teachers than primary teachers. This type of programme characterises Denmark, France, Norway and Spain, for example. A number of other countries – Austria, Australia, the Czech Republic, England, Finland, Ireland, Israel, the Netherlands, Northern Ireland, Scotland, the Slovak Republic, Sweden and Wales -- offer both consecutive and concurrent models in secondary teacher education.

Consecutive programmes allow for flexible entry into teacher education. Graduates can still enter teacher education after having completed a first degree in another discipline and, by deferring the decision point, consecutive programmes more readily accommodate changes in students’ interests and in labour market conditions. There is also an argument that consecutive models offer potentially stronger subject matter education since mathematics, history and so on are more likely to be taught by specialists in those fields, and the potential teachers are mixing with a wider group of students. On the other hand, consecutive models may provide for a less integrated learning experience for prospective teachers since there will normally be fewer opportunities to link subject matter knowledge and its pedagogy.

Some teacher education programmes are spread throughout a large institution (such as a university), and trainee teachers are expected to take courses both in subject-related faculties and faculties of education; other programmes are concentrated in one faculty of teacher education. Again, there are advantages and disadvantages to both approaches. Whereas taking courses in subject-specific faculties might ensure high-level subject training based on the latest research results, having to study in two different faculties might lead to a fragmented rather than an integrated learning experience. It may also make it harder for student teachers to develop a professional identity as a teacher (Calander, 2003 raises this concern about Swedish teacher education).

Concurrent and consecutive models of teacher education are likely to be more or less appealing to different types of potential teachers, and to have different influences on teachers’ preparation for the profession. Views on the relative merits of the two main models have varied over the years, but the broad consensus now seems to be that both models offer distinctive benefits and that countries gain by offering both, rather than relying on a single model of teacher education. Concurrent systems are attractive to students who are strongly committed to their career choice as a teacher. Consecutive models enable people to delay a decision about entering teacher education until they are in an immediate position to benefit from it and have had more opportunity to make an informed decision about whether teaching is the right career choice. Both models should be options within a flexible teacher education system.

Structural issues in teacher education currently have a particular urgency in European countries. The 1999 agreement to make higher education qualifications across European countries more comparable (the “Bologna process”) has triggered a process of restructuring higher education degree structures. Teacher education is particularly affected as the structure, length and location (university or non-university) of teacher qualifications vary so

much within Europe. The broad implications are that all teacher education will eventually be provided in university-level institutions (*e.g.* in Austria the teacher training colleges are being replaced by new pedagogical universities), and that more countries will introduce consecutive models of teacher education (with a Bachelor's and Master's degree structure). The large-scale structural changes now underway in Europe, if properly monitored and evaluated, will provide an unprecedented opportunity to assess how the structure of teacher education affects the entrants and what they learn.

Short versus long programmes of teacher education

The length of initial teacher education programmes varies substantially among countries (Table 4.1 and Figure 4.1). On average, primary teacher education programmes are 3.9 years in length, lower secondary education 4.4 years, and upper secondary 4.9 years. The overall range is from three years (*e.g.* for some primary teachers in Ireland and Spain) up to 6.5 years for some secondary teachers in Germany, seven years in some programmes in the Slovak Republic, and eight years for some secondary teachers in Italy. There are also some quite large differences in duration within a single country, with courses for some upper secondary teachers lasting about twice as long as courses for primary teachers in Italy and Spain. On the other hand, teacher education courses for all levels of schooling are uniformly four years in length in countries such as Australia, Canada (Quebec), England, Korea and the United States.

The differences in course duration mean that the age at which people typically commence a teaching career can vary from the early twenties (for example in the English-speaking countries) to the late twenties or early thirties (*e.g.* in Germany or Italy). There can also be substantial variations in the typical starting age within countries, with primary teachers often starting their career at a younger age than secondary teachers. The picture is made somewhat more complex by the growing phenomenon in some countries of mature-age entrants becoming teachers after other careers (see Section 4.3.4 below). It is likely that relatively short courses of teacher education facilitate entry into teaching by people from other careers since they involve lower costs, especially in terms of income forgone.

The length of courses is also relevant to the extent of teacher mobility within countries. Where courses for different types of teachers vary substantially in length (*e.g.* four years for primary teachers in Italy and seven years for some upper secondary teachers) it is highly likely that these lead to markedly different salary and career structures, and limit the scope for teacher mobility among different types of schools and responsibilities.

The general trend has been for the length of initial teacher education to increase. In many countries primary teacher education has been increased to four years as it has become a university-level programme, and secondary teacher preparation has increased by a year or so as it has become a post-graduate qualification. The broadened responsibilities of teachers that were outlined earlier may lead to pressure to increase the length of initial teacher education even further. Pressure may also come from the view that teaching qualifications must have a similar status to those from other professions, and that increases in the length of other courses should be matched by longer pre-service education for teachers. Although both these arguments have merit, they need to be set against the fact that longer courses lead to increased costs, which may diminish the prospective supply of teachers, and the research cited in Section 4.2 that raises questions about the effectiveness of some aspects of teacher education programmes. Given these considerations, there could be better value from providing more resources to improve teacher development throughout the careers rather than increasing the length of pre-service education.

Table 4.1. Pre-service teacher education requirements, 2001

	Duration of initial teacher education programme in years			Consecutive programme (–) or Concurrent programme ()			Mandatory teaching experience as licensing requirement in years			Post-degree examination for teacher employment		
	Primary education	Lower sec. education	Upper sec. education	Primary education	Lower sec. education	Upper sec. education	Primary education	Lower sec. education	Upper sec. education	Primary education	Lower sec. education	Upper sec. education
Australia	4 4	4 4	4 4	 --	 --	 --	a a	a a	a a	No No	No No	No No
Austria	3	3 5.5	5.5			--	a	a a	a	No	No No	No
Belgium (Fl.)	3	3 2-4	4.6-5.8 2.4				a	a a	a	No	No No	No
Belgium (Fr.)	3	3	4.24 5.24			-- or -- or	a	a	a a	No	No	No No
Canada (Quebec)	4	4	4				a	a	a	No	No	No
Chile	m	m	m	m	m	m	a	a	a	No	No	No
Czech Republic	4	5 7	5 7				a	a a	a a	No	No No	No
Denmark	4	4	4			--	a	a	a	No	No	No
Finland	5	5 6	5 6				a	a a	a a	No	No No	No
France	5	5 6	5 6	--	--	--	a	a a	a	Yes	Yes Yes	Yes
Germany	5.5 5.5-6.5	5.5 - 6.5	6.5	--	--	--	a a	a	a	Yes Yes	Yes	Yes
Greece	4	4 5	4 5				a	a a	a a	Yes	Yes Yes	Yes
Hungary	4	4	5				a	a	a	No	No	No
Iceland	3	3	4			--	m	m	m	No	No	No
Ireland	3 4.5	4	4				1 a	1	1	No No	No	No
Israel	4	4 4-5	4-5			--	1	1 a	a	No	No No	No
Italy	4	6-8	6-8				1	1	1	Yes	Yes	Yes
Japan	2 4 6	2 4 6	4 6				a a a	a a a	a a a	Yes Yes Yes	Yes Yes Yes	Yes
Korea	4	4 2-2.5	4 2-2.5				a	a a	a a	Yes	Yes Yes	Yes
Mexico	4	4 6	m			m	a	a a	m	Yes/No	Yes/No Yes/No	m
Netherlands	4	4	5.5 5			--	a	a	a a	No	No	No No
New Zealand	3 4	4 5 4	4 5 4		--	--	2	2 2	2 2	No	No No	No
Norway	4	4 4	4 6			--	a	a a	a a	No	No No	No
Portugal	3 4 6	5 6	5 6			--	a 1 1	a a a	a a a	No No No	No No No	No
Slovak Republic	4 7	5 7	5 7				a a	a a	a a	No No	No No	No
Spain	3	6 4	6		--	--	1	1 1	1	Yes	Yes Yes	Yes
Sweden	3.5	4.5 4.5	4.5 4.5			--	a	a a	a a	No	No No	No
Switzerland	3-4	4-5	6			--	a	a	a	No	No	No
Turkey	4	4	4 5 5.5				1	1	1 1 1	No	No	No No No
United Kingdom (Eng.)	3-4 4	3-4 4	3-4 4				1 1	1 1	1 1	No No	No No	No
United Kingdom (N.Irl.)	4 4	4 4	4 4				1 1	1 1	1 1	No No	No No	No
United Kingdom (Scot.)	3.75-4.75 4	3.75-4.75 4 3.5-4.5	3.75-4.75 4 3.5-4.5	--	--	--	≥ 1 ≥ 1	≥ 1 ≥ 1	≥ 1 ≥ 1	No	No	No No
United Kingdom (Wal.)	3-4 4	3-4 4	3-4 4				1 1	1 1	1 1	No No	No No	No
United States	4	4	4				≤ 3	≤ 3	≤ 3	No	No	No

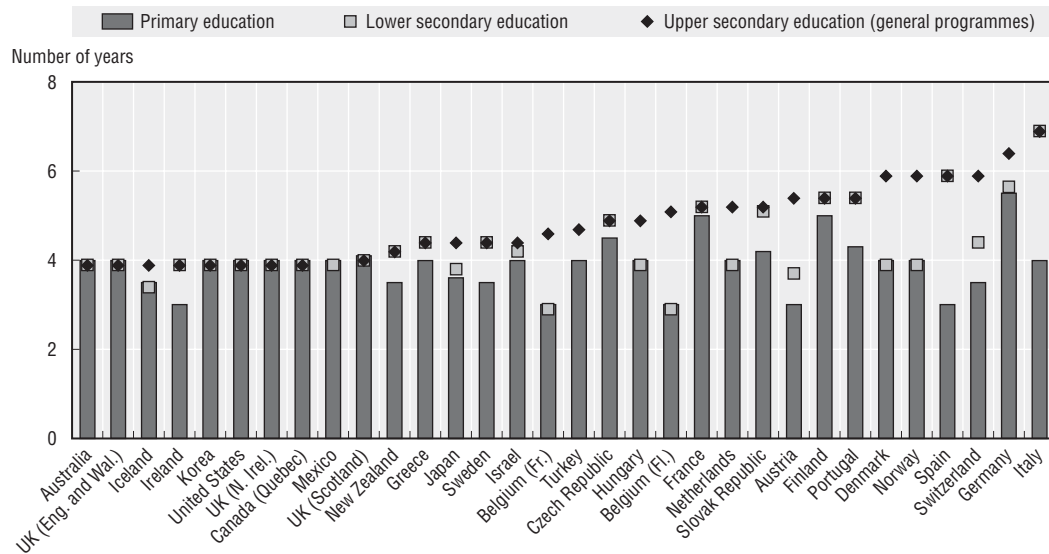
Notes: Information on upper secondary education is for general programmes only. Information for Canada (Quebec), Chile, Israel, United Kingdom (N.Irl.) and United Kingdom (Wal.) refers to 2002 while information for Switzerland refers to 2003. A concurrent programme combines general education in one or more subjects with theoretical and practical teacher training while a consecutive model provides most of the latter training only after a general education is acquired.

Symbols for missing data

a: Data not applicable because the category does not apply; m: Data not available.

Source: Based on Tables D4.1b, D4.1.c and D4.1.d published in OECD (2003b) except for Canada (Quebec), Chile, Israel, Switzerland, United Kingdom (N.Irl.) and United Kingdom (Wal.). The information for the latter countries is based on the Background Reports prepared by countries participating in the project.

Figure 4.1. Number of years of post-secondary education required to become a teacher, 2001



Note: Countries are ranked in ascending order of the number of years of post-secondary education required to become a teacher in upper secondary education. Information for Canada (Quebec), Israel, United Kingdom (N.Irl.) and United Kingdom (Wal.) refers to 2002 while information for Switzerland refers to 2003.

Source: OECD (2003b) except for Canada (Quebec), Israel, Switzerland, United Kingdom (N.Irl.) and United Kingdom (Wal.). The information for the latter countries is based on the Background Reports prepared by countries participating in the project.

4.3.3. Content and emphasis in teacher education

Teacher education systems also vary with regard to their specificity. In some countries, initial teacher education takes a fairly general form and allows teachers to move across different levels of education, different subjects or different types of schools. For example, under the reforms introduced in Sweden in 2001 there are now substantial common elements for all teachers from pre-school to upper secondary school. Systems that offer more specialised teacher education pathways qualify teacher trainees for particular types of schools. In some countries, such as Germany, quite different teacher education programmes exist for primary education, for academic upper secondary education, for vocational education and for teaching students with special needs. The French Community of Belgium offers an interesting hybrid model in primary and lower secondary teacher education: although there are different routes into teaching in different types of schools, they share a common framework through a curriculum organised around a teacher profile with 13 broad competencies common to all courses.

Though there exist some variations in the curriculum, most teacher education programmes offer some combination of coursework in subject matter, teaching methods and materials, child/adolescent development and other education courses such as psychology, history and philosophy of education, along with practice teaching. Variations can also be found with regard to the emphasis teacher education programmes place on different aspects, such as subject-matter knowledge, pedagogic knowledge, educational sciences, educational psychology and practical school experience. In order to enable teachers to use research to improve their professional practice, some countries have made a special effort to build teachers' research skills during their pre-service education (e.g. Australia, Denmark, Finland, Ireland, Israel, Norway and Sweden).

A number of Country Background Reports expressed concerns about the approaches used in teacher education programmes. For example, the Norwegian report stated that “teacher educators have difficulty in giving their teaching a practical focus and relating pedagogical competence to the individual subject. Subject teachers say that students often do not understand that they are receiving instruction in didactics, while students have difficulty in seeing how what they learn in different subjects is linked to what they need to know in a practical, teaching situation.” Norwegian teachers express similar concerns; research indicates that initial teacher education is not highly valued and that teachers commonly perceive a gap between theory and practice in teacher education (Klette, 2002).

Practical field experiences during initial teacher education

Most systems of initial teacher education contain practical modules or internships to familiarise teacher trainees with schools and classrooms. In all countries taking part in the project, there seems to be a tendency to increase opportunities for actual classroom experiences during initial teacher education and to provide such opportunities from the beginning of the course. A significant practice component is now seen as an essential element to teacher preparation in order to help future teachers understand the dynamics of classroom teaching and the principles underlying it, helping to spare beginning teachers a “reality shock”.

Several research studies confirm that beginning as well as more experienced teachers (in retrospect) perceive practical experiences in schools during their initial teacher education as a powerful component of their professional education (Wilson *et al.*, 2001). There is also evidence that student teachers who receive increased amounts of field experience remain in the profession at significantly higher rates than those prepared through largely campus-based programmes (Fleener, 1998).

The duration of the field experience varies widely. Some programmes provide for brief periods of classroom experience, others are year-long internships with regular teaching obligations. Most often, practice teaching occurs following coursework near the end of the teacher education programme. However, this training is increasingly being incorporated throughout the entire teacher education programme, especially in concurrent programmes, and its scope is being broadened. Teacher trainees are asked to participate in school activities, observe classrooms, tutor young people and serve as teacher aides prior to actual practice teaching. The trend towards establishing specific school and college or university partnerships that create linkages between teacher education coursework and school practice is gaining ground (McIntyre *et al.*, 1996).

Actual school and classroom experience has the potential to provide teacher trainees with insight into the complex dynamics of schools and teaching, and opportunities to learn about effective strategies and their capacities for implementing them. Coursework, on the other hand, provides them with more theoretical and empirical foundations. Most teacher trainees perceive both parts to be important but, given the lack of coherence and alignment between the two experiences, sometimes fail to make connections. Research confirms that much of the potential value of practical experiences in schools is not realised because of limited co-ordination with the university-based components of teacher education, and problems in resourcing and follow-through (Wilson *et al.*, 2001).

Across the Country Background Reports there is considerable agreement on the potential problems and pitfalls of providing effective practical field experiences for trainee teachers during their initial education:

- Practical experience is often short and disconnected from coursework in teacher education. As a consequence, teacher trainees often find it difficult to apply in the classroom what they have learned in a higher education setting.
- Student teachers' time spent in the school is still often limited to a rather narrow classroom experience rather than one encompassing the full range of a teacher's professional tasks.
- Frequently, schools have too few resources to support extended periods of field experience or to cope with large numbers of trainees; in particular, there is often little training provided to mentor teachers or time provided for them to work closely with student teachers.
- Differences in background and orientation mean that teacher educators at universities and practising teachers in schools often do not effectively communicate about their respective expectations of the goals of field experience, or indeed teacher education more generally, and the instructional approaches which student teachers should adopt. As a result, co-operating teachers and university supervisors often misunderstand each other and fail to work together effectively to assist the student teacher.
- Trainee teachers may be given practice teaching assignments that have little relevance to their future responsibilities, which diminishes the value of the experience.

In response to such concerns some countries are redesigning field experience to give a broader experience of teaching and working in schools, and a closer connection between teacher education institutions and schools (see Box 4.2).

The contribution of field experiences to teacher preparation is enhanced when they are well prepared and based on a close co-operation between the teacher education institution and the schools; when student teachers are well prepared in subject matter and pedagogy before practice teaching; when teacher trainees are given opportunities to conduct research in the classroom, and to integrate the course-based and fieldwork components; and when both teacher educators and supervising teachers receive appropriate and often shared training.

4.3.4. Alternative programmes for attracting new groups into teaching

As a response to teacher shortages, and the need to introduce new skills into schools, countries are facilitating entry into teaching for individuals with professional experience gained outside education. This has led to the development of new schemes allowing individuals to pursue teacher education courses while working in other professions.

As Table 3.4 showed, about two-thirds of the participating countries offer alternative teacher education programmes for “side entrants”. Most of these programmes are provided in “traditional” teacher education institutions, although often with a considerable change in approach. For example, in the University of Applied Sciences in Education in the canton of Zürich, which offers teacher education for primary and lower secondary levels to those who have worked outside education, admission depends on a broadly-based assessment of academic background, relevant work experience and personal competencies. (As noted in Section 4.3.1, these entrance criteria are now being used for all teacher education candidates.) There is a reduced study programme for such students and the possibility of a paid part-time teaching post.

Box 4.2. Field experience in initial teacher education in Ireland, Israel, Mexico, the Netherlands and Sweden

Ireland

All Irish teacher education programmes now place increased importance on the school as a site for helping students understand the dynamics of classroom teaching and the principles underlying it. This school-based experience takes the form of continuous participation for days of block placements throughout the school year. Trainees are located in schools on a full-time basis. At secondary level, in particular, there is also a move away from just focusing on teaching practice towards broader features of school experience, including planning, supervision and extra-curricular activities.

Israel

Practical field experiences are a dominant element in the programmes that teacher colleges offer in Israel. They comprise 15% of the total programme time. Also in the fourth year, the induction period is mainly devoted to work in school as regular teachers, combined with reflection on this experience with the mentor teacher at the school and the tutor in the college.

Mexico

School-based experience for students in Mexico consists of a placement in a school as part of the final year of training, and includes the provision of financial support. Student teachers are guided by a group of teachers at the host school and followed by a tutor at the teacher education institution. The experience has three main features. It is: (i) systematic, following a distinct plan agreed by the host teachers and the teacher education institution; (ii) reflexive, as student teachers are expected to reflect on and adapt their practice to the situations faced in the host school; and (iii) analytical, as the student teachers and mentor teachers analyse and report on the difficulties and achievements of the field experience.

The Netherlands

Students in the final year of their training are employed by schools on a part-time basis and on a training and employment contract for a limited period not exceeding one school year. By relating these experiences back to the teacher training institutes, the trainees help institutes follow current developments in schools more closely. In return, the school benefits because the workload of regular staff can be reduced and new ideas on teaching methods can be introduced smoothly.

Sweden

Teacher education in Sweden now includes education on the job to provide teacher trainees with opportunities to develop their professional skills. They work with a teacher team to familiarise themselves with the various roles of teachers as individuals and as team members. They also take part in educational activities such as planning, teaching and evaluation and have opportunities to attend seminars, projects and presentations organised for them at the partner school. The programme, conducted in close co-operation between the school and the university or college, lasts for 20 to 30 weeks, and includes a research-based component linked to participants' academic studies. The student teachers keep in touch with "their" school throughout their teacher education.

Other countries provide quite different sorts of institutional arrangements for side entrants. For example, in both the Flemish and French Communities in Belgium it is possible to train as a teacher in adult education institutions that offer very flexible forms of enrolment and a wide geographical coverage. There are no fixed entry qualifications to these courses and many of those taking such routes are mature-age students, often in the process of changing careers, who fit the training around other jobs or around employment as an unqualified teacher. In other innovations, distance learning techniques are used to facilitate access to teacher education for those for whom full-time, on-campus study is not feasible (*e.g.* in Chile, Denmark, the Netherlands and Sweden), and the Netherlands,

England and Wales make use of school-based programmes that enable side entrants to start earning an income while studying. England has initiated a particular programme, the Higher Level Teaching Assistant, for support staff working in schools, with one aim being to provide smoother progression for those who wish to become fully qualified teachers.

The creation of more flexible education pathways into teaching is paralleled by similar reforms in nursing, an occupation that is also facing shortages in many countries. A number of countries, including Australia, Belgium, Germany, Ireland, the Netherlands, Norway, Switzerland and the United Kingdom, have reviewed or reformed the education paths into nursing to improve the attractiveness of entry into the profession (Simoens and Hurst, 2004). Ireland has introduced a sponsorship scheme for experienced health care assistants wishing to train as nurses. Successful candidates are allowed to retain their salary during the four years of the degree programme, in return for a commitment to work as nurses for their public health service employer following graduation. The United Kingdom now enables trainee nurses to spread their education over more than three years, by incorporating take-a-break periods. In addition, new pathways into nursing via credits for national vocational qualifications have been introduced.

Although there are only limited long-term data on side entrants to teaching, the impression is that their numbers are growing. In the United States “alternative certification” programmes allow academically well-qualified individuals to start working in schools and to reduce the coursework requirements of both formal teacher preparation programme and state licensure (see Box 4.3). The average age of new teachers has increased, which suggests that people are pursuing other careers before they enter teaching: in 1993/94, 65% of newly hired United States teachers were over the age of 25, compared with 52% in 1987/88. In the Netherlands, about 3 000 of the currently employed teachers started their career as “second career teachers” or “side entrants”. In almost all the countries for which the information is available it is possible to start working as a teacher before completing the preparation in pedagogy (see Table 3.4).

The relative performance of teachers who enter the profession through alternative routes has been most extensively debated and researched in the United States. Such programmes offer great flexibility in attracting new sorts of recruits to teaching, including potentially very able people who otherwise may not enter teaching, and generally entail lower costs. However, critics argue that such programmes risk providing the schools with inadequately prepared teachers (*e.g.* Darling-Hammond, 1999). A broad conclusion from the research on alternatively certified teachers is that they generally perform as well as those prepared through traditional teacher education programmes (see Box 4.3). However, generalisations are difficult in this area because of the great diversity of different kinds of backgrounds and forms of preparation for those classified as alternatively certified (great diversity is also evident among those prepared through traditional teacher education programmes).

A major United States review suggested that a number of features are important to successful alternative route programmes: strong partnership between the preparation programme and school districts; good participant screening and selection; strong supervision and mentoring for participants during their teaching; a solid curriculum including courses in classroom basics and teaching methods; and as much training as possible before starting full-time teaching (Education Commission of the States, 2003). Similar features are also likely to be very important in traditional teacher education programmes.

Box 4.3. Teacher education for mid-career changers in the United States

In the United States, the past decade has seen a large increase in the number of programmes designed to attract established professionals from other fields, as well as recent university graduates who did not take the courses necessary for certification while an undergraduate, to teaching. In the past five years, alternative routes have produced about 25 000 new teachers each year (Feistritz and Chester, 2003). Almost all states now have some type of alternative route to certification, but states vary greatly in the size and scope of their programmes. The three largest by far are established in California, New Jersey and Texas. Alternatively certified teachers accounted for between 18% and 24% of newly hired teachers in these three states (Feistritz and Chester, 2003).

Depending on the state, alternative certification programmes are run by the state itself, local school districts, teacher education institutions in partnership with school districts, or private organisations contracted to a school district. Such programmes tend to provide several weeks of pre-service training during the summer before candidates enter the classroom full time. While working as full-time classroom teachers, candidates must take coursework leading to full certification at night and on weekends. In order to address a perceived unevenness in the quality of alternative certification programmes, the U.S. Department of Education requires that these programmes offer sustained, intensive mentoring and professional development to new alternate-route teachers.

Research has shown that alternatively certified teachers perform as well as teachers who were licensed through traditional routes, as measured by the performance of their students (Ballou and Podgursky, 1999; Raymond *et al.*, 2001). However, alternatively certified teachers may face more difficulties at the start of their careers because of their more limited preparation (Education Commission of the States, 2003). They are more likely to come from cultural minorities. For instance, 48% of the California teachers in alternative routes were members of cultural groups that are under-represented in the state's teaching workforce. Alternatively certified teachers are also more likely to hold bachelor's degrees in shortage areas such as mathematics and science (Shen, 1997). On the other hand, there is research that suggests that alternative routes have a mixed record in attracting talented candidates (Feistritz and Chester, 2000).

The National Center for Education Information, a private, non-government group, reports that alternatively certified teachers show higher retention rates in the profession than their traditionally certified peers. This may be because alternatively certified teachers tend to be older and come from other careers, and therefore the decision to teach requires a larger investment and thus a more carefully considered choice. However, the Education Commission of the States (2003) cautions that there is a lack of data on long-term retention because most alternative programmes are relatively recent.

4.3.5. Accrediting teacher education programmes

Policy makers can encourage the improvement of teacher education by raising accreditation requirements for teacher education programmes. This is a major issue in highly decentralised countries where there are very large numbers of different teacher education providers. Accreditation is a means to ensure that diverse teacher education programmes meet the standards set by the teaching field at large and include the preparation for key skills such as classroom management, teaching methodologies, summative and formative assessment, evaluation and teacher-conducted research.

Accreditation criteria should focus more on the outcomes of teacher education programmes than on inputs, curriculum and processes. A focus on the latter elements runs the risk of consolidating conventional wisdom about how best to prepare teachers, thereby leading to greater uniformity of programmes and reducing the scope for innovation. In any

event, it is what trainee teachers learn and can do that should be the policy focus. How they get to that point is better left to the teacher education institutions and other programmes for teacher preparation. Box 4.4 illustrates the use of this approach in the recent reforms to teacher education in Switzerland.

Box 4.4. Reforms to teacher education in Switzerland

Switzerland has moved to reform and to better align its system of teacher education through a process in which “the objectives are standardised, but the means to reach them (study programmes, teaching methods, traditions of pedagogy and didactics) can differ” (EDK/CDIP, 2002). All initial teacher education has been upgraded to university level and is provided through both newly created Universities of Applied Sciences in Education (Pädagogische Hochschule /Haute Ecole Pédagogique) as well as established multi-faculty universities. Agreements on standards for teacher education graduates and the recognition of qualifications throughout the country have increased graduates’ choice of jobs and facilitated mobility.

The 15 new Universities of Applied Sciences in Education in Switzerland provide initial teacher education, research and development for schools, and continuous professional development for teachers and schools. Research is practice-oriented and student teachers conduct research projects linked to their professional interests and development.

The reforms have established consensus on key principles, including better integration of discipline-based studies and pedagogical training, common competencies for teachers at all levels, formalised partnerships with schools and better alignment with school standards and the professional profile of teachers. The new institutions have implemented *modularisation* of studies to increase flexibility and to make courses available to a wide range of students, including those seeking to upgrade their qualifications and “side entrants” from other careers who wish to become teachers.

A number of countries are finding that teacher profiles are very useful mechanisms for clarifying expectations of what systems of teacher education and professional development should aim to achieve. As was noted in Section 4.1, teachers’ roles are broadening in response to social and economic change, and higher expectations of schools. A clear and succinct statement of what teachers are expected to be able to do at key stages of their career can both reflect the new “enriched” profession of teaching and communicate the roles and responsibilities of the different players involved in preparing and supporting teachers. The role of teacher profiles is discussed in Section 4.4 below.

Fundamental to the preparation of a teacher profile is a clear statement of objectives for student learning in the school system involved. Teachers’ work and the knowledge and skills that they need to be effective must be based on what the schools are aiming to achieve. Broad consultation with, and involvement by, the teaching profession and teacher educators in developing statements of student learning objectives and consequent teacher profiles are vital in ensuring successful implementation. Standard-setting must be seen as an iterative, and not top-down, process if it is to usefully inform the development of teacher policy. New approaches to educating, developing and rewarding effective teachers will be weakened in the absence of profession-wide standards and a shared understanding of what counts as accomplished teaching. Ingvarson (2002) provides a framework for identifying the areas on which teachers’ professional standards should focus, the processes by which standards can be developed and the uses of a standards framework, including accreditation of teacher education programmes.

Accreditation is part of a wider issue concerned with ensuring that teacher education institutions are evaluated on an ongoing basis, and that the teacher education sector as a whole is subject to periodic review and debate. For example, in the last few years there

have been major external reviews of teacher education in Australia, Belgium (Flemish and French Communities) and Sweden that have led to major changes in structures and programme emphases. While such periodic, high-profile reviews are important, they need to be complemented by ongoing feedback and evaluations by teacher education institutions, students, schools and funding agencies of the effectiveness of teacher education programmes.

4.4. Certification of New Teachers

Systems differ according to the entity responsible for the certification of new teachers. These entities can be institutions of higher education such as teacher colleges or universities, professional bodies such as teacher associations, teacher unions or state authorities. Similarly, the specific requirements to obtain a teaching certificate or licence vary between different systems.

In about half of the countries, the completion of pre-service teacher education is not sufficient to gain a licence to teach (Table 4.1). In those countries prospective teachers are also required to pass a competitive examination and/or successfully complete a period of mandatory teaching experience (especially before obtaining a tenured position). Competitive examinations are used in France, Germany, Greece, Italy, Japan, Korea, Mexico (in some states) and Spain. In some cases the examinations are used to obtain a teaching licence, and in others to determine the successful candidates for positions in public schools. Examinations may include tests of subject matter knowledge, observation of the candidate's teaching, in-depth interviews or consideration of portfolios with records of achievement and work experience. Both Italy and Spain also require mandatory teaching work experience of one year. Mandatory work experience is also a requirement in England, Ireland, Israel (for primary and lower secondary education), New Zealand, Northern Ireland, Scotland, Turkey, the United States and Wales, and can last between one and three years.

In England all prospective teachers must pass skills tests in numeracy, literacy and ICT before receiving full certification (see Box 4.5 for more details). In the United States federal legislation under the 2001 *No Child Left Behind Act* requires that by 2006 all teachers be "highly qualified," which includes demonstrating mastery of the academic content in the areas in which they teach.

Certification requirements provide a policy lever for setting entrance criteria for the teaching profession. Teacher certification allows for the establishment of professional standards independent of teachers' training institutions. This in turn is a way to influence teacher education programmes and align them more closely to the needs of schools. However, teacher certification might deter certain suitable candidates from entering teaching, as it provides an additional hurdle that must be crossed. As was noted in Section 4.3.4 alternative forms of certification are being used in some countries to enable those who are otherwise well qualified to commence teaching but who have not completed a full programme of teacher education.

Not all countries use a system of certification of new teachers. In general, certification requirements are more likely to exist where the provision of teacher education is diverse and perceived to be of variable quality. In Finland, for example, where there is high demand for teacher education opportunities and close connections between training institutions and the wider education profession, there are no additional certification qualification requirements for teachers after they graduate.

Even where there are reasonably high levels of confidence in the quality of initial teacher education, the nature of teaching means that many otherwise well-qualified candidates may struggle to adjust to the demands of the job. There are likely to be considerable benefits from a probationary period before full certification or permanency is awarded, especially where this is conceived as a key stage on the teaching career ladder. At the present time, only one in three countries requires mandatory teaching experience before obtaining a teaching licence (Table 4.1). In a number of other countries, though, a period of probation is needed before obtaining a permanent teaching post in the public school system.

As noted earlier, some countries have developed professional teaching standards to provide a vision of good teaching and to serve as a tool to guide and assess teacher education and professional development. To illustrate this, Box 4.5 outlines the teacher profiles and performance standards developed in England, Quebec (Canada) and Victoria (Australia). Although the country statements differ in matters of detail, they share a similarly broad conception of teachers' roles and a focus on what teachers know and do. The general trend, illustrated by these three examples, is towards changing requirements for teacher certification from input measures (such as a number of courses taken or credit points) to output criteria, namely knowledge, skills and competencies measured in multiple ways, including portfolios.

There is a related set of issues for the recertification of experienced teachers. Teacher recertification describes a process by which teachers who are already working in the school system renew their teaching licences at regular intervals. Recertification of teachers is a comparatively rare practice among the countries taking part in the project, although it is starting to receive more attention. Chapter 6 discusses recertification in the context of country approaches to teacher evaluation and career development.

Box 4.5. Performance standards for teachers in England, Quebec (Canada) and Victoria (Australia)

England

The outcome standards set out what a person must know, understand and be able to do in order to be awarded Qualified Teacher Status (QTS). They are organised in three interrelated sections:

- Professional values and practice (outlining the attitudes and commitment to be expected of anyone qualifying to be a teacher; these are derived from the Professional Code of the General Teaching Council).
- Knowledge and understanding (standards that require newly qualified teachers to be confident and authoritative in the subjects they teach and to have a clear understanding of how all pupils should progress and what teachers should expect them to achieve).
- Teaching (standards relating to skills of planning, monitoring and assessment, and teaching and classroom management).

These standards apply to all teachers, whatever training route they take, and set out the minimum requirements. All prospective teachers must also pass skills tests in numeracy, literacy and ICT. The tests are computerised. Trainees have unlimited opportunities to pass the tests before being awarded QTS. Those who have successfully completed teacher education but have not passed the skills tests may be employed as unqualified teachers for up to five years.

Quebec (Canada)

In the early 1990s a major reform made teacher professionalisation the focus of teacher education. The duration of training was increased from three to four years, and required students to complete a minimum of 700 hours practicum. In light of changes in schools' and teachers' work, teacher education was reorganised around 12 professional competencies that are grouped into four categories, as outlined below. The reforms also encompassed the regulation of teachers' licences to teach.

Foundations

1. To act as a professional inheritor, critic and interpreter of knowledge or culture when teaching students
2. To communicate clearly in the language of instruction

Teaching act

3. To develop teaching/learning situations
4. To guide teaching/learning situations
5. To evaluate teaching/learning situations
6. To properly manage classes

Social and educational context

7. To adapt teaching techniques to specific student needs
8. To integrate information and communications technologies into teaching/learning activities
9. To co-operate with partners
10. To work as a teaching team

Professional identity

11. To engage in professional development
12. To demonstrate ethical behaviour

Victoria (Australia)

The new Victorian Institute of Teaching (VIT) represents more than 75 000 teachers and principals in the State of Victoria. The Institute, an independent statutory body, provides teachers with a level of professional autonomy and self-regulation and the right to have a say in the further development of their profession. The VIT has developed professional standards for teachers based on research and an extensive consultation process across the state. The standards apply to eight areas grouped into three categories:

Professional knowledge

1. Teachers know how students learn and how to teach them effectively
2. Teachers know the content they teach
3. Teachers know their students

Professional practice

4. Teachers plan and assess for effective learning
5. Teachers create and maintain safe and challenging learning environments
6. Teachers use a range of teaching practices and resources to engage students in effective learning

Professional engagement

7. Teachers reflect on, evaluate and improve their professional knowledge and practice
8. Teachers are active members of their profession.

New teachers are required to provide evidence of their performance in each area to receive full registration. The standards are also being used for the accreditation of teacher education programmes and the development of induction and professional development schemes. It is intended that they will also be used as the basis for promotion decisions and in identifying ineffective teachers. The Institute is largely funded by an annual registration fee paid by teachers, which helps provide it with operational independence.

4.5. Induction Programmes for New Teachers

In some countries large numbers of beginning teachers leave the profession within the first few years (see Chapter 6 for details). Attrition and turnover rates are often particularly high in schools serving disadvantaged communities. High teacher attrition has costs for both the individuals and school systems involved. Given the current teacher shortage in some systems, and concerns about retaining valuable skills in schools, reducing teacher attrition has become an important policy issue. Even where beginning teachers do not leave the profession, a difficult start to their career may so reduce new teachers' confidence that their long-term effectiveness suffers, and students and schools do not benefit from the new ideas and enthusiasm they could bring.

Even in countries that do not face recruitment problems, a lack of attention to supporting new teachers has long-term costs. For example, as is noted in the Country Background Report for Ireland: "Only a small percentage of post-primary teacher graduates find permanent employment on graduation. It is commonly the case that they will spend their early years of teaching in a series of temporary positions, in a variety of schools ... They do not have the benefit of a time period to establish themselves in a stable school context, to get to know the school climate and dynamics, and to establish supportive professional relationships with fellow staff members. To apprehensions and difficulties of finding one's 'professional feet' is added the insecurity of employment patterns and the lack of continuity of professional context."

The research literature consistently documents the extent to which new teachers struggle in the early years in the profession. Veenman's international review (1984) found that the main challenges perceived by beginning teachers were remarkably similar across different education systems: motivating students to learn, classroom management, dealing with individual differences between students, assessing student work and handling communication with parents were seen as challenging by almost all of the beginning teachers surveyed in the study. In a more recent international study, Britton *et al.* (1999) confirmed that the same problems are still viewed as the most challenging difficulties, often overwhelming individuals new to the profession.

The quality of the professional experience in the early years of teaching is now seen as a crucial influence on the likelihood of leaving the teaching profession. Induction and support programmes for beginning teachers can improve teacher retention rates by enhancing the effectiveness and job satisfaction of new teachers. The United States school districts of Cincinnati, Toledo and Rochester, for example, managed to reduce beginning teacher attrition by more than two-thirds by having expert mentors with release time coach beginning teachers in their first year (National Commission on Teaching and America's Future, 1996). In addition, well-designed programmes help new teachers apply the more theoretical knowledge acquired in their teacher preparation programmes to the complexity of teaching in the classroom. Well-developed induction programmes can provide school systems with an important competitive edge in hiring new teachers.

Country approaches to induction

Currently, school systems have very different provisions for the transfer from initial teacher education into teaching as a full profession, and the quality and content of induction programmes vary widely. Table 4.2 summarises some features of teacher induction schemes in the countries participating in this project.

Table 4.2. Formal induction programmes for beginning teachers, public schools, 2004

	Is formal induction mandatory, at the discretion of individual schools or not offered?	What is the typical length of induction programmes?	Do beginning teachers have a reduced teaching load? (relative teaching load in parentheses)	Who are the main persons responsible for supporting beginning teachers during induction programmes?	Is formal training required for the persons providing support?	Do persons providing support receive a salary allowance or other compensation?	Is induction organised in collaboration between the school and the teacher education institution?	Is completion of induction programme required for full teacher certification?
Australia	Varies, often mandatory and sometimes at the discretion of the school	Varies considerably from a few days to one year	Sometimes (varies, in one instance 95%, in another jurisdiction 90%)	Mentor and school management generally, sometimes online help and district office staff involved	Generally no, but in one jurisdiction training is required for mentors	No	No	No
Austria	Not offered	<i>a</i>	No	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
Belgium (Fl.)	Not offered	<i>a</i>	No	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
Belgium (Fr.)	Not offered	<i>a</i>	No	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
Canada (Qb.)	At the discretion of individual schools	Minimum of 1 year Maximum of 2 years	No	Mentor teachers; School management	No	Time allowance	Sometimes	No
Chile	Not offered	<i>a</i>	No	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
Denmark	At the discretion of individual schools	1 year	No, except as part of some induction programmes	Mentor teachers	No	Time allowance	No	No
Finland	Not offered	<i>a</i>	No	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
France	Mandatory	1 year as part of final year of initial teacher education	Yes (about 30%)	Mentor teachers; Staff from teacher education institution	Primary level: Yes Sec. level: No	Primary level: Salary and time allowance; Sec. level: Salary allowance.	Yes	Yes
Germany ³	Not offered	<i>a</i>	No	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
Greece	Mandatory	8 months	No	Mentor teachers; School management; Staff from teacher education institution	No	Salary allowance	No	Yes
Hungary	Not offered	<i>a</i>	No	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
Ireland ¹	Not offered	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
Israel ²	Mandatory	1 year	Yes (at least 30 to 50% is recommended)	Mentor teachers; School management; Staff from teacher education institution	Yes	Salary allowance	Yes	Yes
Italy	Mandatory for permanent teachers	1 year	No	Mentor teachers	No	No	No	Yes
Japan	Mandatory	1 year	No	Mentor teachers; School management; Local education authority	No	Time allowance (for mentor teachers only)	Yes	No, but it is a requirement for a permanent post
Korea	Mandatory	7 months	No	School management; Local education authority	No	No	Sometimes	No
Netherlands	At the discretion of individual schools	<i>m</i>	No	<i>m</i>	<i>m</i>	<i>m</i>	<i>m</i>	<i>m</i>
Sweden	At the discretion of individual schools	1 year	No	Mentor teachers; School management	No	Salary and/or time allowance, dependent on individual schools	No	No
Switzerland	Mandatory	3 to 4 weeks over a period of 2 years	No	Mentor teachers; School management; Staff from teacher education institution	Yes	Salary allowance	Yes	Varies by canton
United Kingdom (Eng. and Wal.)	Mandatory	1 year	Yes (90%)	Mentor teachers; School management; Local education authority	No	Dependent on individual schools	No	Yes
United Kingdom (N.Ir.)	Mandatory	1 year	Yes	School management; Local education authority	Not formally, but it is expected	No	Yes	Yes
United Kingdom (Scot.)	At the discretion of individual teachers, but in practice most enter formal induction	1 year	Yes (70%)	Mentor teachers; School management	No	Time allowance	No	No
United States ⁴	Varies by school district (most districts offer at least a mentor)	1 to 2 years	No	Mentor teachers	Sometimes (varies by district)	Salary allowance (this may not be universally applied)	No ⁵	Often

Definitions: *Induction programmes* refer to organised arrangements for supporting and monitoring teachers at the start of their careers. They typically include support specially devised to provide guidance, assistance and advice to new teachers and may also include compulsory training which could serve to confirm their appointment. Only formal programmes are considered in this table. *Time allowance* refers to time freed up from other duties (e.g. teaching duties) to engage in the mentoring of beginning teachers.

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

1. A National Pilot Project for teacher induction is in operation.

2. The induction programme is part of the final year of initial teacher education.

3. The second phase of initial teacher education (preparatory phase), which typically lasts 18 months and is undertaken after the initial academic preparation of students, is considered to achieve the objectives of induction programmes. However, some Länder have recently introduced pilot induction programmes.

4. 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.

5. There is a growing trend in introducing such collaboration but it is still not generally common practice.

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.

Mandatory induction programmes are not yet standard across the school systems involved in the study. Ten countries have mandatory induction programmes for beginning teachers: Australia (some States); England and Wales; France; Greece; Israel; Italy; Japan; Korea; Switzerland; and Northern Ireland. In Scotland, participation in induction programmes is at the discretion of individual teachers, most of whom choose to do so. In six other countries induction is offered at the discretion of the school, whereas in eight others (one-third of the total) formal programmes are not offered at all.

In most of the countries where induction is mandatory, the successful completion of an induction programme is a prerequisite for full certification as a teacher. Only Australia (in some States), Japan and Korea have made induction mandatory without linking it to teacher certification.

In most countries, the school of the new teacher is in charge of providing teacher induction. Only in Israel, Japan, Switzerland and Northern Ireland is teacher induction organised in collaboration between teacher education institutions and schools. Some programmes are organised in partnership with teacher associations. Box 4.6 describes recent initiatives of different types in Greece, Korea and Norway. These initiatives are often complemented with instruments to provide guidance and information to new entrants such as the *Young Teachers' Handbook* prepared by educational authorities in the French Community of Belgium (see Box 4.7).

Box 4.6. Teacher induction in Greece, Korea and Norway

Greece

Since 1999 teachers appointed to their first post in the public sector have to go through a series of theoretical and practical training sessions. The induction is managed by the Regional In-Service Training Centres (PEK). It consists of three stages lasting a total of 100 hours, comprising didactical methodologies, educational administration and organisation, teaching practices, evaluation methods (60 hours), practical teaching (30 hours), and evaluation and planning (10 hours).

Korea

Korea has developed a tripartite structure for teacher induction. It consists of a two-week period of pre-employment training focusing on field-related cases and practical tasks. The main emphases at this stage are: student guidance, classroom management skills and developing basic teacher capacities. Training takes place in the metropolitan and provincial institutes of educational training. After recruitment, new teachers take part in a six-month-long field training led by the principal, vice principal and advisory teachers in the school. The training encompasses instructional guidance and evaluation, classroom supervision, student assessment, and assistance with administrative tasks. A third phase involves reflection and discussion, including with other beginning teachers and teacher educators.

Norway

The Ministry of Education provides resources to different projects mandated to test different methods of mentoring and guidance of new teachers. School principals are asked to assign an experienced staff member who is well fit to guide new teachers. The teacher education institution then provides these mentor teachers with training in how to guide new teachers and also takes part in in-school guidance. The new teachers take part in local support sessions and in gatherings with new teachers from the other schools involved in the programme. The out-of-school programme and gatherings are seen as useful in dealing with potentially difficult issues for new teachers, such as student behaviour and collegial relations.

The duration of induction programmes ranges from seven months (Korea) to up to two years in Quebec, Switzerland and parts of the United States. In most countries beginning teachers do not receive a reduced teaching load. The exceptions are in some Australian states (90-95% of a regular teaching load), England and Wales (90%), France (30%), Israel (up to 50%, as part of the final year of teacher education), Northern Ireland, and Scotland (70%).

In most countries mentor teachers, often in co-operation with the school principal and other senior teachers, are in charge of providing teacher induction. Only a few countries require formal training for the mentor teacher: Australia (in one state); France (in primary education), Israel; Switzerland; and some school districts in the United States. Schools offering induction programmes in countries where induction programmes are at the discretion of individual schools typically provide some sort of compensation for those teachers providing mentoring and induction. This is usually a time allowance (Quebec, Denmark, Scotland). In Sweden mentor teachers can be offered a choice between a time allowance and a salary allowance, but mentor role can also be recognised in the yearly individual salary review rather than through immediate compensation. In several countries where induction programmes are mandatory, mentor teachers receive a salary allowance (Greece, Israel, Switzerland).

Box 4.7. A Young Teachers' Handbook in the French Community of Belgium

Le petit guide du jeune enseignant is a 60-page handbook published by the Ministry of the French Community of Belgium, as one of a series of measures to support newly qualified teachers. There are three parts. Part 1 answers two questions: Where, when and how can I apply for a teaching post in a school? and When can I obtain a permanent appointment? Part 2 addresses interviews with principals, contact with colleagues and workload management inside and outside the classroom. The interview with the school principal is intended to provide a young teacher with useful information on the broad educational setting, study programmes and subjects, activities inside and outside the classroom, and administrative procedures. The section on contact with colleagues encourages young teachers to assume their role in the school, in the education team and in the profession as a whole. There is also guidance on how to manage the workload inside and outside the classroom, with advice on: managing student groups, managing learning and managing relations. Part 3, entitled "Broadening your horizons", is on in-service education and European exchanges. The handbook also contains practical information, including a glossary of common educational terms and some addresses of professional associations and other resources for young teachers.

Designing and implementing induction

Stansbury and Zimmerman (2000) distinguish between low- and high-intensity support programmes for beginning teachers. Low-intensity programmes provide a formal orientation in one-shot or low-frequency events. Although such programmes cost less, they have much poorer results than high-intensity support programmes involving mentoring over an extended period, combined with training and release time for both the mentors and beginning teachers.

The role of an appropriate mentor teacher is generally considered crucial in effective induction schemes. In some of the more formal schemes, incentives exist to encourage the most committed and qualified senior teachers to become mentors and coaches for beginning teachers. These mentors provide on-the-job support, and diagnose deficits in subject matter knowledge, classroom management strategies and other pedagogical processes. Familiar with available professional development structures, they can also direct beginning teachers

to suitable training activities. Mentors must have a level of professional expertise that goes beyond being a source of emotional support and practical information. They should be able to provide not only a good role model, but also offer the help necessary to establish the beginners as competent professionals. They must have expertise both in teaching young students and in teaching adults.

The research literature describes the benefits novice teachers gain from mentoring (*e.g.* Odell and Huling, 2000). There is now sufficient evidence showing that mentors also derive substantial benefits from the mentoring experience (Resta *et al.* 1997; David, 2000; Holloway, 2001). The quality of teaching by mentors generally improves (Yosha, 1991). Mentors benefit by applying cognitive coaching skills with their students such as listening, asking questions, providing non-judgmental feedback, and by reassessing their classroom management (Clinard and Ariav, 1998). Mentor teachers frequently characterise working closely with beginning teachers as a source of new ideas about curriculum and teaching, motivating them to reflect upon their experiences and beliefs with regard to teaching and learning (Ganser, 1997).

Mentoring can thus serve as a means to engage, challenge and retain effective teachers. As practicing teachers, mentors appreciate and value the opportunities to interact, share their expertise and develop as they support new teachers (Tillman, 2000). Creating a structure that allows experienced teachers to work with novice teachers and that acknowledges their expertise will ultimately strengthen the overall organisation, including retaining good practitioners in the classroom.

A key challenge is ensuring that teacher education institutions have an ongoing involvement in the early stages of a teacher's career. A mechanism used successfully in England, Scotland and Wales is a *Career Entry Profile* which is provided for each newly qualified teacher by their initial training institution. This personal profile, which is developed jointly by the institution and the graduating teacher, identifies their strengths and developmental needs, and sets targets and goals, both to encourage beginning teachers to develop a reflective attitude to their own professional development and to act as a vehicle of communication from the initial stage to induction and to the early professional development stage.

Most induction programmes are geared towards teachers who have just completed a teacher education programme or who have been teaching for less than two years. Some sort of induction and guidance, however, might also provide support for teachers who are returning to the profession after a leave of absence or teachers who are new to a particular school or school district, especially if the teacher is faced with a different community and school environment than the one he or she is used to. For example, in the Netherlands it has been found that while many beginning teachers leave the profession soon after starting work, their departure is not always permanent. A lot of former teachers return to teaching, often after having a family. The Dutch data indicate that most of the graduates who started working as teachers immediately after obtaining their qualifications were still working as a teacher many years later, although often with significant breaks in between. Given this phenomenon, different forms of induction programmes could be of considerable assistance to returning teachers, and not just to beginning teachers.

4.6. Professional Development

Professional development activities seek to update, develop and broaden the knowledge teachers acquired during initial teacher education and/or provide them with new skills and

professional understanding. Professional development may also accompany the implementation of educational reforms.

There are strong demands for teachers to continuously update their knowledge and skills due to the introduction of new curricula, changes in the characteristics and learning needs of students, new research on teaching and learning, and increased pressure for accountability of teacher and school performance. Professional development provides a means for improving the quality of teachers and for retaining them in teaching. However, the Country Background Reports reveal that professional development is often fragmented, unrelated to teaching practice, and lacking in intensity and follow-up. For instance, the Korean Country Background Report notes that “there is no compatibility between the preliminary education and in-service education both in theory and practice.” The Background Report prepared for Greece expressed concerns about “the quality and co-ordination of teacher induction programmes and in-service education. In particular, it is felt that the great number of different in-service education programmes ... have not been satisfactorily co-ordinated.”

4.6.1. Types and providers of professional development

The discussion of professional development often lacks clarity because a potentially large number of quite different activities are grouped together. For example, professional development can serve several different purposes:

- Activities intended to facilitate the implementation of policy or educational reforms, which are often taken by large groups of teachers together, *e.g.* through conferences designed to provide new information.
- Task-oriented professional development aimed towards preparation of staff for new functions, which are often taken by individual or small groups of teachers, and which may include courses, self-study and so on.
- School-based professional development aimed at responding to school needs and serving the aim of school development, and which often involve groups of teachers from the same school working jointly on a problem or developing a programme.
- Personal professional development chosen by the individual participant for professional enrichment and further education. Such activities are often taken outside the teacher’s school, either on an individual basis or with teachers from other schools. In some countries, personal professional development activities are closely linked to the outcomes of teacher evaluation.

These four types of professional development activities exist simultaneously but their relative weight has changed over the years. The Country Background Reports note that school-based professional development activities involving the entire staff or significant groups of teachers are becoming more common, and teacher-initiated personal development probably less so, at least in terms of programmes supported through public funds.

Professional development is provided in different institutional settings. Often, universities and teacher training institutes offer professional development courses or modules for practising teachers in both subject-matter content and pedagogical skills. In some systems, professional development is largely provided by state agencies (*e.g.* France, Germany, Korea, and Spain). Other systems (*e.g.* the Flemish Community in Belgium, Denmark, Finland, Hungary, Italy, the Netherlands, Norway, Sweden and Switzerland) are

moving from a supply-oriented model of in-service training to one based on demand and have deregulated the market for professional development accordingly. Schools are allocated funds to organise in-service training responding to their specific needs and can pay for trainers, researchers or advisers. In such countries, universities and other teacher education providers sometimes compete with non-government agencies, private consultants and training firms offering professional development activities for teachers.

4.6.2. Country approaches to professional development

Table 4.3 summarises some key organisational features of professional development in the participating countries. In over half of the countries there is no minimum requirement for teachers to engage in professional development. In those countries that have set a minimum requirement (some states in Australia, Austria, the French Community of Belgium, Finland, Hungary, the Netherlands, Scotland, Sweden, Switzerland and some school districts in the United States) the requirement is most commonly five days per year, with a range from 15 hours per year (Austria) up to 104 hours in Sweden and 169 hours (10% of the total teacher workload) in the Netherlands. In Hungary it is mandatory for teachers to have a minimum of 120 hours of professional development over a seven-year period.

Teachers in most countries make some sort of financial contribution to the costs of transport, course fees or course materials in recognised professional development programmes. The major exceptions are Chile, Sweden and Northern Ireland where teachers generally do not contribute to such costs.

In about one-quarter of the countries completion of professional development activities is required for teacher promotion or recertification: for promotion in England and Wales (to principal), Korea, Northern Ireland, Switzerland and the United States, and for recertification in Israel and the United States. Most countries note, however, that participation in professional development is generally considered beneficial in career progression.

Most countries now link professional development to the developmental priorities of the school and co-ordinate in-service education in the school accordingly. In three-quarters of the countries professional development activities are planned in the context of school development, although not exclusively so. School management, and in some cases local school authorities, play an important role in planning professional development activities.

Figure 4.2 shows markedly different positions among countries in regard to the financing of professional development at the upper secondary level. In Belgium (Flemish Community), Denmark and Sweden, over 95% of upper secondary students are enrolled in schools that have a separate budget for professional development. By contrast, the corresponding proportion was less than 20% in France, Portugal and Spain. In the latter countries professional development is generally organised and funded by education authorities rather than schools. In almost all countries, though, substantial numbers of schools organise staff development activities, whether or not they have a specific budget for that purpose (Figure 4.2).

There is, however, not a single country that offers in-school training aligned with school development aims exclusively (Table 4.3). In almost all countries the individual teacher decides which professional development activities she or he wants to pursue. Most countries offer teachers a range of different professional development activities inside and outside the school. In many countries teachers can get a leave of absence, a sabbatical or a research grant to pursue study and research activities.

Table 4.3. Professional development for teachers, public schools, 2004

	What is the minimum professional development requirement for teachers in a school year?	Who decides the professional development activities an individual teacher undertakes?	Are professional development activities planned in a context of individual school development priorities?	Are schools allocated a budget to determine their involvement in professional development?	Is the completion of professional development activities required for the promotion or recertification of teachers?	Can teachers get a leave of absence and/or a research grant to undertake study/research activities?	Do teachers generally make a financial contribution to cover the costs of professional development activities (e.g. transport, course fees, course materials)?
Australia	Generally none, 5 days in two states, 37.5 hours per year in another state	Generally teacher and school management, often in line with system priorities	Yes, but not exclusively	Generally yes	It varies e.g. in one jurisdiction teachers must undertake professional development for promotion to Senior Teacher classification	It varies but usually a leave of absence, sometimes research grants or scholarships are available	It varies, if training is personally initiated the teacher will pay (e.g. a national or international conference)
Austria	15 hours	Primarily teacher; School management and inspectorate if performance is poor	Yes, but not exclusively	Yes	No	Leave of absence	Sometimes
Belgium (Fl.)	None	Teacher; School management	Yes, but not exclusively	Yes	No	None	Often
Belgium (Fr.)	6 half-days	Teacher	Yes, but not exclusively	No	No	None	Sometimes
Canada (Qb.)	None	Teacher; School management	Yes, but not exclusively	Yes	No	Leave of absence	Sometimes
Chile	None	Local educational authority	No	No	No	Both leave of absence and research grant	Never
Denmark	None	Teacher; School management; Local educational authority	Yes, but not exclusively	Yes	No	Both leave of absence and research grant	Sometimes
Finland	Between 1 and 5 days, depending on type of programme	Teacher; School management; Local educational authority	Yes, but not exclusively	No	No	Leave of absence	Sometimes
France	None	Teacher; Inspectorate	No	No	No	Leave of absence	Generally no, except if training is personally initiated
Germany	None	Teacher; Local educational authority	Yes, but not exclusively	Sometimes	No	Leave of absence	Sometimes
Greece	None	Teacher; Central/regional/local educational authority	No	No	No, but used as a selection criterion to become principal or school advisor	Both leave of absence and research grant	Sometimes
Hungary	120 hours over a period of 7 years	School management taking teachers' preferences into consideration; Teachers alone if activity is not funded by school	Yes, but not exclusively	Yes	No, but can result in exceptional career advancement	Both leave of absence and research grant if the board of teachers in school agrees and funding is found in school. Possible also if school authorises it as a professional development mandatory activity	Often, if the teacher undertakes programmes other than the ones <i>officially</i> provided; For programmes <i>officially</i> provided, teachers cover about 20% of the costs
Ireland	None ¹	Teacher, except for activities organised to implement reforms	Yes, but not exclusively	No ²	No	Leave of absence with pay is available for certain relevant courses	Sometimes, if teacher personally initiates a programme
Israel	None	Teacher; School management	Yes, but not exclusively	Only for schools under self-management	Yes, for recertification; Yes, unofficially for promotion	None, but teacher can get a sabbatical year	Often, when not undertaken during sabbatical year
Italy	None	Teacher	Yes, but not exclusively	Yes	No	Leave of absence	Often
Japan	None	Local educational authority	No	No	No	Both leave of absence and research grant	Always
Korea	None	Teacher	No	Yes	Yes, for promotion	Both leave of absence and research grant	Often
Netherlands	169 hours (10% of total workload)	Teacher; School management	Yes, but not exclusively	Yes	No	None, but teacher can get a sabbatical year	Sometimes
Sweden	104 hours	Teacher; School management	Yes, but not exclusively	Yes	No	Both leave of absence and research grant	Never
Switzerland	Generally 5 to 10 days ³	Primarily teachers; Regional education authority for activities related to implementation of reforms	Yes, but not exclusively	Yes	Yes, non-fulfillment of professional development requirement might imply promotion deferral	None (generally)	Often
United Kingdom (Eng.)	None	Teacher; School management	Yes, but not exclusively	Yes, but it is not earmarked	Yes, for promotion to principal	Yes, but at the discretion of the school	Sometimes
United Kingdom (N.Irl.)	None	Teacher; School management; Local educational authority	Yes, but not exclusively	Yes	Yes, for promotion	Yes, but at the discretion of the employer	Never
United Kingdom (Scot.)	1 week	Teacher; School management	Yes, but not exclusively	Yes	No	None	Varies according nature of training
United Kingdom (Wal.)	None	Teacher; School management	Yes, but not exclusively	Funding available from within the school's overall budget and through optional additional funding	Yes, for promotion to principal	Yes, but at the discretion of the school	Sometimes
United States ⁴	Varies by school district, often about 30 credit hours in first two to five years of teaching	Teacher; School management; Local educational authority	Yes	No, with few exceptions ⁵	Yes	Yes, but infrequently	No, except for university courses

Definition: Professional development refers to in-service training which seeks to update, develop and broaden the knowledge teachers acquired during initial education and/or provide them with new skills and professional understanding. Professional development may also be provided to accompany the implementation of educational reforms. It is distinct from further "qualifying training" which normally enables teachers to teach another subject or at another educational level (additional qualifications).

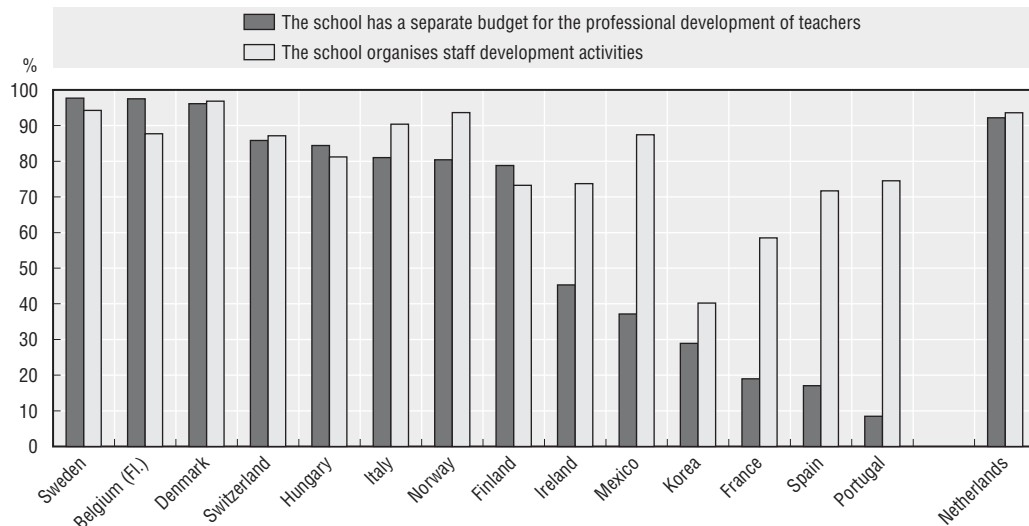
Notes:

1. Except for primary school teachers to attend a professional development programme designed to support the implementation of *The Primary School Curriculum* (1999), currently averaging 6 days per annum.
2. An exception for primary and lower secondary education is the *School Development Planning Initiative*, which allocates a small budget to schools.
3. Regulated in some cantons but not in others. No national regulation exists.
4. 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.
5. Local educational authorities are typically allocated a budget for professional development activities.

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.

Figure 4.2. **School supporting professional development activities, 2001**

Percentage of upper secondary students whose school principal reported that the school supports professional development of teachers in the following way:



Note: Countries are ranked in descending order of the percentage of upper secondary students attending schools where the principal reported that the school had a separate budget for the professional development of teachers. Every school in Belgium (Fl.) receives a budget for the professional development of teachers from the Education Department. The Netherlands did not meet international sampling requirements. See OECD (2004) for notes on methodology.

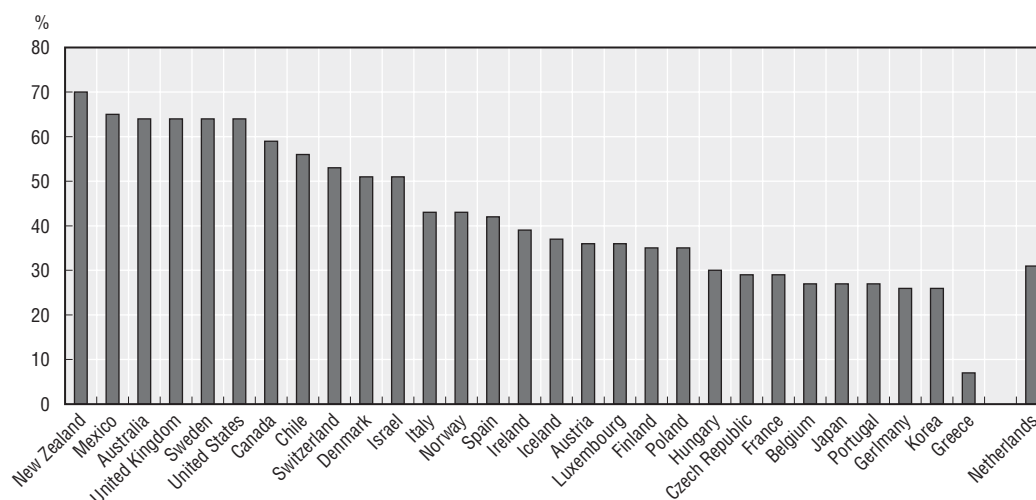
Source: OECD International Survey of Upper Secondary Schools (ISUSS) database, 2003.

4.6.3. *Teacher participation in professional development*

Teachers' participation in professional development varies widely across countries as well as within countries. The 2000 PISA survey indicated that an average of about 40% of teachers had attended a programme of professional development in the previous three months (Figure 4.3). However, the range of participation across countries ranged very widely, from less than 10% of teachers of 15-year-olds in Greece to 70% in New Zealand.

More detailed information on teachers' participation in professional development is available from the OECD survey of upper secondary schools in 15 countries (OECD, 2004). As reported by principals, about one-third of upper secondary teachers participated in ICT-related professional development activities in 2000/01, and about one half participated in professional development related to other topics (Figure 4.4). The reported participation rates were highest in Sweden, Finland, Denmark, Norway and Switzerland (with at least 50% of teachers involved in ICT-related professional development), and lowest in Italy, Korea, France and Hungary. However, these rates may underestimate the extent of teacher participation since teachers may engage in professional development without necessarily informing the principal. In France and Spain, for example, professional development activities are generally organised by education authorities in direct contact with teachers. Overall, however, Figures 4.3 and 4.4 suggest that there is more extensive teacher participation in professional development than the minimum requirements would imply.

Figure 4.3. **Percentage of teachers who attended a professional development programme in the previous three months according to principals of PISA schools, 2000**



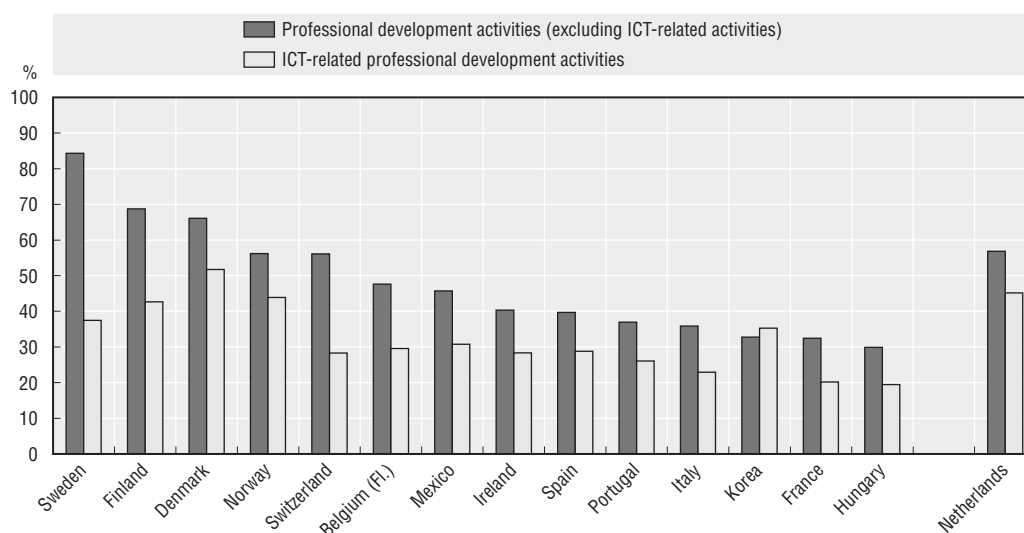
Definition: Principals were asked what percentage of teachers in their school have attended a programme of professional development in the last three months. The average country figure is computed weighting each school figure by the number of students enrolled in that school. Professional development is defined as follows: “Professional development is a formal programme designed to enhance teaching skills or pedagogical practices. It may or may not lead to a recognised qualification. The total length of the programme must last for at least one day and have a focus on teaching and education.”

Note: For the Netherlands, the response rate is too low to ensure comparability.

Source: OECD PISA Database, 2001.

Figure 4.4. **Teacher participation in professional development activities in upper secondary education, 2001**

Percentage of teachers who, according to school principals' reports, participated in:



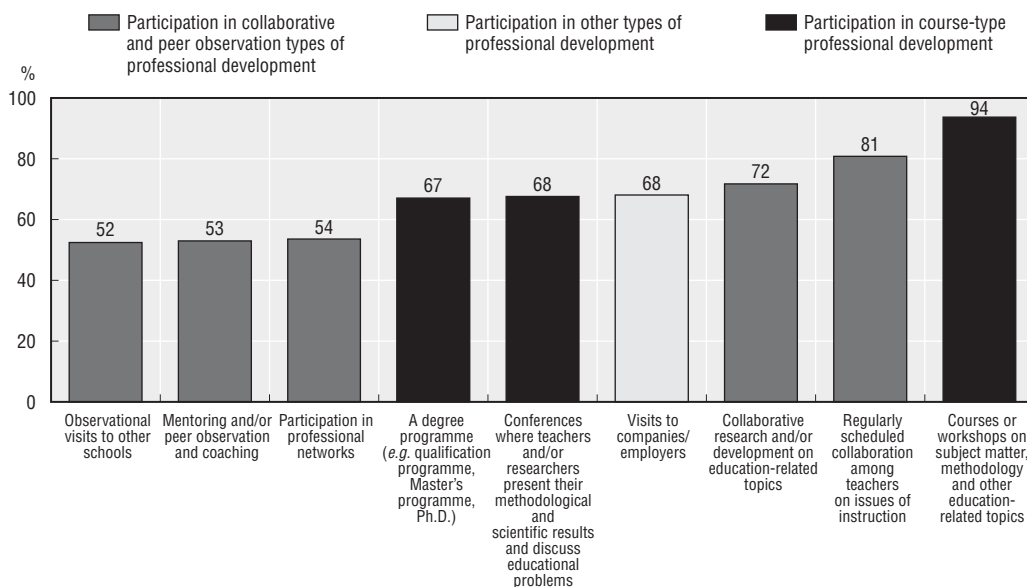
Note: Countries are ranked in descending order of the percentage of teachers who, according to school principals' reports, participated in professional development activities (excluding ICT-related activities). The Netherlands did not meet international sampling requirements. See OECD (2004) for notes on methodology.

Source: OECD International Survey of Upper Secondary Schools (ISUSS) database, 2003.

One of the difficulties in analysing professional development is the potentially large variety of activities that it encompasses. Figure 4.5 analyses participation by upper secondary teachers in nine common types of professional development. The most common form was in-service courses or workshops: 94% of upper secondary students were enrolled in schools where the principal reported that at least one teacher had this form of participation. Less formal types of professional development were also commonly reported: regularly scheduled collaboration among teachers on instruction (81%), and collaborative research and/or development (72%). The least commonly reported forms were observational visits to other schools (52%), mentoring and/or peer observation and coaching (53%), and participation in professional networks (54%). Since these indicators are based on whether at least one teacher in the school participated, they probably overstate the extent to which all teachers were involved.

Figure 4.5. Average frequency of various types of professional development activities across countries, 2001

Cross-country mean percentage of upper secondary students attending schools where the principal reported that at least one teacher had participated in professional development activities during the school year 2000/01



Note: Proportions by type of professional development activities 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. See OECD (2004) for notes on methodology.

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

4.6.4. Research on the effects of professional development

Presently, there is little evidence about the effects of teachers' professional development on student outcomes. In general, there is still very little knowledge about the nature and extent of professional development as an activity. Activities labelled as "professional development" are very diverse and the outcomes are highly dependent on the particular circumstances in which those activities are undertaken. For an international review of recent literature about teacher professional development see Villegas-Reimers (2003).

Some studies have found that higher levels of student achievement are associated with mathematics teachers' opportunities to participate in sustained professional development focused on content-specific pedagogy linked to the new curriculum they are learning to teach (e.g. Cohen and Hill, 1997). They report that when California teachers had extensive opportunities to learn in what they called "student curriculum workshops" in elementary mathematics, their practices more closely resembled those envisioned by the new curriculum framework, and their students' achievement on mathematics assessments was significantly higher. Similar results were found by Wiley and Yoon (1995) and Brown *et al.* (1995).

More recently, Wenglinsky (2000) linked student results from the 1996 eight-grade National Assessment of Educational Progress tests in the United States to teacher education levels, years of experience, classroom practices and professional development. This study finds that some kinds of professional development for teachers made a big difference indeed. In mathematics, students whose teachers received professional development in working with special populations (such as culturally diverse students, those with a limited proficiency in English and students with special needs) outperformed their peers, as did students whose teachers received in-service education in higher-order thinking skills. In science, students whose teachers received on-the-job education in laboratory skills also outperformed their peers.

Obviously, the correlation between student achievement and professional development does not necessarily point to a causal link, especially if the professional development activity in question was voluntary. Motivated teachers are more likely to seek out professional development activities than their less motivated peers, and motivated teachers also tend to have better student outcomes.

Perhaps the most detailed and methodologically sophisticated study on the effects of a specific professional development programme is by Angrist and Lavy (2001). This programme was used in Jerusalem primary schools to improve the teaching of language skills and mathematics. The results suggest that the training received by teachers in non-religious schools led to an improvement in their pupils' test scores. The estimates for religious schools are not clear cut but, according to the authors, this may be because the training programme in religious schools started later and was implemented on a smaller scale. In an attempt to assess the value of the training programme, the authors compared its effects and costs with research on other strategies involving reductions in class size and lengthening the school day. Their analysis suggests that focused teacher development provides a more cost-effective strategy for increasing student performance than reducing class size or increasing school hours.

Although reliable data are not available, there are indications that the resources allocated to professional development amount to only a very small proportion of total expenditure on schools. For example, as is discussed in Section 4.6.2 above, five days is the common requirement among those countries that specify a minimum amount of teacher participation in professional development activities per year. This would be roughly equivalent to less than 2% of total expenditure on schools.

Jacob and Lefgren (2002) found that a Chicago programme which focused on the lowest-performing 20% of primary schools, and which involved moderate increases in in-service training on teaching in mathematics and reading, had no effect on student achievement. This led them to conclude that modest investments in staff development may not be sufficient in such schools especially where, as seems to have been the case, the training was relatively unstructured and not closely aligned with the school curriculum.

They suggest that even if more substantial resources had been invested in the teacher development programme, unsatisfactory results would have resulted. The benefits of professional development depend not only on the resources involved, but also on the quality and context of the programme.

The most effective forms of professional development seem to be those that focus on clearly articulated priorities, provide ongoing school-based support to classroom teachers, deal with subject matter content as well as suitable instructional strategies and classroom management techniques, and create opportunities for teachers to observe, experience and try new teaching methods.

The importance of professional development organised around groups of teachers is supported by the research of Desimone *et al.* (2002). They drew on longitudinal data from a sample of 200 mathematics and science teachers to conclude that professional development is more effective in changing teachers' practice when it is organised around the collective participation of teachers (from the same school, department or grade levels), focused on active learning activities (teachers apply what they are learning), and aligned with teachers' professional knowledge as well as external standards and assessments.

Decentralisation of schools and site-based management have created new demands and opportunities for the professional growth of teachers (see Box 4.8 for the cases of Baden-Württemberg in Germany, and Sweden). In order for teachers to “own” and to lead school improvement efforts, they need to be offered expanded and enriched professional development experiences.

Box 4.8. Professional development and school improvement in Baden-Württemberg (Germany) and Sweden

School-centred in-service training in Baden-Württemberg (Germany)

One of the priorities of the Ministry of Education of Baden-Württemberg is to promote in-service training addressed to schools or regional teams in order to encourage co-operation between teachers and the development of whole schools. The Ministry supports the organisation of about 100 “whole school” seminars every year by its State Academies for In-service Teacher Training. The Academy of Esslingen, for instance, organises tailor-made two-day seminars for the whole staff of schools (generally on weekends). The content of these seminars is determined co-operatively by the school and the academy. It is focused on staff and organisational development and usually contains elements such as organising active learning, developing self-regulated learning competencies, stress and conflict management and helping students to work in teams. The courses conclude with an action plan for school development. In order to assure sustainability, a steering team, consisting of teachers from the school, is established with a responsibility to implement the action plan.

Time provision for professional development in Sweden

In Sweden, under a 2000 agreement, 104 hours of professional development per year (as an indicative value) per teacher are set aside for skills development. As the total statutory working time is 1 800 hours, this is about 15 days per year or about 6% of a full-time load, a relatively high level compared to most countries. How this time is divided up and used is determined on the basis of the school's and the individual teacher's needs. Principals have a major responsibility to ensure the 104 hours are used well, as part of their overall responsibility for ensuring quality and developing their schools, but local education authorities play a major role in determining which professional development programmes receive financial support. It can include time out of normal school hours, *e.g.* evening seminars.

4.6.5. Schools as learning organisations

Studies of high-performance organisations indicate that most learning occurs informally (e.g. Education Development Center, 1998). High-performance organisations value informal learning and the contribution that it makes to achieving organisational goals. Such organisations seek to maximise opportunities for staff to interact and learn from one another, as well as with external sources of research and information, and try to develop ways for learning to be cumulative and more readily accessible to all members of the organisation. The term “knowledge management” is sometimes used to describe this strategy.

There are some examples of how professional development activities are being used to encourage ongoing informal learning in schools. A key strategy is to encourage teachers to become more inquiring, reflective practitioners, and to do so in collaboration with colleagues. As defined by Schon (1996), reflective practice involves thoughtfully considering one’s own experiences in applying knowledge to practice while being coached by professionals in the discipline. Reflective practice encourages teachers to use personal histories, dialogue journals and small- and large-group discussions to reflect upon and improve their practice. The use of peer reflective groups and coaching (Guiney, 2001) encourages teachers to challenge existing theories and their own preconceived views of teaching while encouraging a collaborative style of professional development. Licklider (1997) found that self-learning from experience in natural settings is an effective component of adult learning. The research underlines a growing tendency to provide for activities such as study teams and peer coaching in which teachers continuously examine their assumptions and practices.

Some countries have used a broader conception of professional development to create opportunities for teachers to engage in school-focused research and development (e.g. England, Hungary and Ontario in Canada). Such programmes support teachers in studying and evaluating their own teaching strategies and school programmes, and in sharing their findings with their colleagues, and through conferences and publications.

Some countries are creating more coherent frameworks to document and certify effective professional development activities. Teacher portfolios, for example, allow teachers to keep track of professional development activities in a systematic manner, and to share the results with others. Portfolios also allow for the documentation of developmental projects and research conducted by teachers. By documenting an individual teacher’s professional development in a more comprehensive manner, teachers become more aware of their personal strengths and developmental needs. Portfolios also enable potential employers to gain a much more precise understanding of a teacher’s individual experience, interests, motivation, knowledge and skills.

For professional development activities to work in these ways it is important that they forge a close connection between teachers’ own development, their teaching responsibilities and school goals. A frequent critique of many professional development programmes is that they treat teachers’ professional development as an activity distinct from teachers’ daily work, which both limits its effectiveness and reduces the chances for schools to benefit from informal learning (Education Commission of the States, 2004).

To encourage schools to become learning organisations requires ensuring among teachers: the *motivation* to create new professional knowledge; the *opportunity* to engage actively in innovation; the *skills* of testing the validity of innovations; and the *mechanisms* for transferring the validated innovations rapidly within their school and into other schools (D. Hargreaves, 2003). Targeted professional development activities can be an important

source of ideas and techniques for building these features in schools. Perhaps even more important are skilled school leaders who are able to build a climate of collegiality and quality improvement within schools, and systems of teacher evaluation and career development that recognise and reward teachers who innovate, share their learning, and help achieve school goals. These latter aspects are taken up in Chapter 6.

The concept of schools as learning organisations also requires that schools become more skilled at looking outwards, at building stronger linkages with the research and development communities, and at becoming integrated into networks of teachers and schools. System-wide improvement requires individual schools to become better at sharing their successes and failures with other schools, and to learn from the experiences of others facing similar challenges. The OECD's Centre for Educational Research and Innovation case studies on the ways that various countries are building teachers' competencies in student formative assessment underline the value of collaborative networks of teachers and schools, but also draw attention to the time and other resources needed for networking to be effective (OECD, 2005).

4.7. Priorities for Future Policy Development

This chapter has reviewed the approaches that countries are taking to developing teachers' knowledge and skills, and identified a range of promising initiatives in initial teacher education, certification of new teachers, induction into the teaching career, and ongoing professional development. Most Country Background Reports have identified these as key areas for improvement.

Teaching is becoming a more challenging task, and the responsibilities of teachers have broadened in response to societal changes and higher expectations of schooling. At the same time, research is increasingly emphasising the critical role of quality teaching in student learning, as well as improving understanding of the factors that contribute to teacher effectiveness. Research is also challenging the value of some traditional approaches to developing teachers' knowledge and skills.

The policy suggestions that follow are drawn from the experiences reported in the Country Background Reports, the analyses of external review teams, and the wider research literature. Not all of the policy implications apply equally to all 25 participating countries. In a number of cases many or most of the policy suggestions are already in place, while for other countries they may have less relevance because of different social, economic and educational structures and traditions. The implications also need to be treated cautiously because in some instances there is not a strong enough research base across a sufficient number of countries to be confident about successful implementation. Rather, the discussion attempts to distil potentially useful ideas and lessons from the experiences of countries that have been searching for better ways to develop teachers' knowledge and skills.

Developing teacher profiles to align teacher development, performance standards and school needs

The overarching priority is for countries to have in place a clear and concise statement or profile of what teachers are expected to know and be able to do. This is necessary to provide the framework to guide initial teacher education, teacher certification, teachers' ongoing professional development and career advancement, and to assess the extent to which these different elements are being effective.

A fundamental precondition for the preparation of a profile of teacher competencies is a clear statement of objectives for student learning. Teachers' work and the knowledge and skills that they need to be effective must reflect the student learning objectives that schools are aiming to achieve. There needs to be profession-wide standards and a shared understanding of what counts as accomplished teaching. The profile should be evidence-based and built on active involvement by the teaching profession in identifying teacher competencies and standards of performance. A clear, well-structured and widely supported teacher profile can be a powerful mechanism for aligning the various elements involved in developing teachers' knowledge and skills.

The teacher profile must reflect the broad range of competencies that teachers require to be effective practitioners in modern schools. It should encompass strong subject matter knowledge, pedagogical skills, the capacity to work effectively with a wide range of students and colleagues, contribution to the school and the wider profession, and the teacher's capacity to continue developing. The profile could express different levels of performance appropriate to beginning teachers, experienced teachers, and those with higher responsibilities. The profile would emphasise demonstrated attainment of key knowledge, skills and competencies for effective professional practice.

Viewing teacher development as a continuum

Much of the focus of teacher development has been on initial teacher education, the knowledge and skills that teachers acquire before starting work as a teacher. Most of the resources for teacher development have been allocated to pre-service education, and this is the phase that is most intensely debated within countries. In a number of countries, the initial qualification that teachers gain is a key determinant of their career path. However, given the rapid changes in schools, the potentially long careers that many teachers have, and the need for updating and professional development, teachers' development must be viewed in lifelong learning terms, with initial teacher education conceived as providing the foundations for ongoing learning, rather than producing ready-made professionals.

Although high-quality initial teacher education is necessary and important, it is not sufficient on its own to meet teacher and school needs. The stages of initial teacher education, induction and professional development need to be much better interconnected to create a more coherent learning and development system for teachers. As noted above, a statement of teacher competencies and performance standards at different stages of their career will provide a framework for the teacher development continuum. A clear set of expectations about teachers' own responsibilities for their ongoing development, and a structure of support to facilitate their growth must be part of this framework.

A lifelong learning perspective for teachers implies that in most countries much more attention will need to be focused on supporting teachers in the early stage of their career, and in providing the incentives and resources for ongoing professional development. Pre-service teacher education will continue to be important, but viewed as providing the foundations for teacher development rather than being responsible for most of the structure. In general, there could be better value from using additional resources to improve induction and teacher development throughout their career rather than increase the length of pre-service education.

Making initial teacher education more flexible and responsive

Teacher education has an important role to play in ensuring that a teaching career is open to a wide range of well-qualified people, and that emerging needs in the school system

are responded to effectively. Key features of a flexible and responsive teacher education system include:

- Opportunities to train as a teacher after having completed studies in another field. This involves providing consecutive or post-graduate programmes of teacher education in addition to concurrent programmes for those who decide relatively early that they wish to be teachers.
- Modular curriculum structures that enable people to enrol part-time or via distance education, and to combine teacher education with work or family responsibilities.
- An increase in the common components of teacher preparation for different types of school and levels of education so as to increase opportunities for working in different schools as teacher demand and career interests change.
- Alternative routes into teaching for mid-career changers that combine formal study and on-the-job support with reduced teaching loads.
- Study credits for qualifications and experience gained outside education, so as to reduce course length and costs.
- Retraining and upgrading programmes that enable existing teachers to gain new qualifications to teach in other types of schools or to take on high-demand subject areas.
- Close relationships with schools, teacher employers and the teaching profession.
- Research and development activities focused on the issues facing schools and teachers.
- Feedback and evaluation mechanisms that enable the outcomes of teacher education to be monitored and quality improved.

Improving selection into teacher education

A number of countries have largely unrestricted entry to initial teacher education for students who have completed secondary education. Although this can be difficult to change in light of policies towards admission to higher education as a whole, the result can be very large enrolments with many students not focused on a teaching career, and teacher education resources being spread too thin. Potentially useful responses include: providing more information and counselling to prospective teacher trainees so that better informed enrolment decisions are made; procedures that try to assess whether the individuals wanting to become teachers have the necessary motivation, skills, knowledge and personal qualities; incentive schemes to recruit candidates with high-level competencies; and flexible programme structures that provide students with school experience early in the course, and opportunities to move into other courses if their motivation towards teaching changes.

Selection is particularly critical for countries facing teacher shortages, as the pressing needs to staff the schools may risk a lowering of entrance standards. People who are not well equipped to be teachers or who lack motivation will not perform well in schools and are likely to leave the job, thereby doing little to solve the shortage problem. A more appropriate policy response is to improve teaching's attraction as a career choice for

competent and motivated people, and to use selection criteria that ensure the best possible candidates enter teacher education.

Changing the emphases in initial teacher education

Initial teacher education must not only provide sound basic training in subject-matter knowledge, pedagogy related to subjects, and general pedagogical knowledge; it also needs to develop the skills for reflective practice and research on the job. Teaching is a complex task, and there is not a single set of teacher attributes and behaviours that is universally effective for all types of students and learning environments. Effective teachers are people who are competent across a range of domains. A consistent finding is that effective teachers are intellectually capable people who are articulate and knowledgeable, and able to think, communicate and plan systematically. They need strong content knowledge combined with the skills to organise and use that knowledge to stimulate, guide and evaluate learning in diverse and dynamic environments. Effective teachers also need the personal qualities to inspire trust and confidence among students, parents and their colleagues.

It is unrealistic to expect that any initial teacher education programme, no matter how high quality, will be able to fully develop student teachers in all of these regards. As noted above, rather than being the main or indeed the only qualification for teachers, initial teacher education is now starting to be viewed as the entry point for the profession and the platform for teachers' ongoing development. Nevertheless, initial teacher education has the responsibility to ensure that new teachers are well equipped for the job they need to do.

The general impression from the participating countries is that, despite the reforms in teacher education in recent years, there is still some way to go. While some countries express broad satisfaction with the subject knowledge preparation and research skills of secondary teachers, they also express concern about new teachers' pedagogical skills and their capacity to work in socially diverse schools. At the primary school level, while the pedagogical preparation of new teachers is generally well regarded, there are concerns about many teachers' limited grounding in subject matter content, and their skills for ongoing development. Surveys of teachers themselves reveal concerns about a gap between theory and practice in teacher education.

Part of the difficulty seems to have been a lack of clarity about the competencies that beginning teachers need to start in their careers. Having in place a clear and widely supported profile of teacher competencies and performance standards will help considerably in this regard. Another source of difficulty lies in the limited contact in some countries between teacher education institutions and their main clients – teacher employers, the schools, and teachers.

Many of the participating countries express concern about the limited co-operation between teacher education institutions and schools. Teacher trainees are faced with different, sometimes incompatible demands in their teacher education and school experiences, and there is too little sharing of expertise between teacher educators and practising teachers. There is a need for more overt and deliberate forms of partnerships between schools and teacher education institutions, in order to provide trainee teachers with a more integrated experience.

Improving practical field experiences

Countries are rethinking the role of field experiences in schools. These now tend to happen earlier in teacher education, and are framed to provide a broad experience of what it means to be a professional teacher, including actual class teaching, counselling and

guidance, curriculum and school development planning, research and evaluation and collaboration with parents and external partners. The more effective programmes ensure that the students' field experiences and academic studies reinforce and complement each other, for example through students doing research on issues identified within the schools. Effective programmes also ensure that mentor teachers receive appropriate training and support, including time allowances.

Accrediting teacher education programmes

Accreditation by an independent, authoritative agency is a means to assure quality in teacher education, and to help ensure that funds are well used and graduate teachers are well prepared. In order to encourage innovation and a diversity of approaches in teacher education, accreditation criteria should focus on the outcomes of programmes rather than on their inputs, curriculum and processes. Teacher education institutions should be free to determine the best way to reach agreed ends. Programme accreditation must be one part of an ongoing process of feedback and evaluation of the effectiveness of teacher education.

Certifying new teachers

Teacher certification allows for the establishment of professional standards independent of prospective teachers' educational backgrounds. It can also provide a means for individuals from a variety of backgrounds to become teachers. Since a range of different dimensions are important for effective teaching, certification must entail a variety of different criteria – subject matter knowledge, pedagogical skills, communication skills, experience, personal qualities and so on.

However, the nature of teaching means that even the best qualified applicants may still struggle to cope with the realities of the job. For this reason the satisfactory completion of a probationary period of one to two years teaching should be considered mandatory before full teaching certification is awarded or a permanent teaching post is awarded. To be fair, prospective teachers should be given every opportunity to work in a stable and well-supported school environment in this initial period, and the decision about certification should be taken by a panel of internal and external personnel who are well trained and resourced for the task. The successful completion of the probation period should be publicly acknowledged and lead to a substantial rise in status and salary.

Strengthening induction programmes

The crucial importance of induction programmes for new teachers in the early years of their teaching careers is now widely acknowledged. In successful programmes, mentor teachers in schools provide guidance and supervision to beginning teachers in close collaboration with the initial teacher education institution. Under this approach the early years of the teaching career are seen as an extension of the training period, or a form of internship, and would require continuing close interaction with the teacher education institution and well-trained and resourced mentor teachers in schools. These mentors provide on-the-job support, diagnose deficits in subject matter knowledge, classroom management strategies and other pedagogical processes. Central to the success of induction and mentoring programmes are the resources dedicated to the programmes and the quality of mentor training. Often schools that would need to provide the most support to beginning teachers are the least capable of delivering high-quality induction programmes. Effective partnerships between teacher education institutions and schools are particularly important in this respect.

Integrating professional development throughout the career

There are substantial challenges in ensuring that all teachers – and not only the most motivated ones – are lifelong learners, and in linking individual teacher development to school needs.

Three broad strategies are evident among participating countries. The first is entitlement-based, and generally results from collective bargaining agreements that stipulate that teachers are entitled to certain amounts of released time and/or financial support to undertake recognised professional development activities. The second is more incentive-based, linking professional development to needs identified through a teacher appraisal process, and/or recognising participation in professional development as a requirement for salary increases or taking on new roles. The third broad strategy is more school-based, and links individual teacher development with school improvement needs. The three strategies are not necessarily mutually exclusive, although the starting points of the entitlement and incentive-based approaches tend to be the individual teacher rather than the whole school.

A comprehensive approach to professional development would encompass all three strategies. Providing teachers with agreed levels of time release or financial support for professional development is an explicit recognition of its importance in teachers' work, and a means of enabling participation. However, it is also important for teachers to see the value of taking part in professional development, to understand that it is an important part of their professional role, and to see the "entitlement" provision as the minimum extent of their participation rather than the maximum. This is most likely to occur when teachers can see a clear link between professional development activities, improvements in their own practice, student progress, and overall school improvement.

Although professional development is now receiving more policy attention, it often seems to be fragmented and limited in scope. The three broad strategies just described attempt to stimulate the demand for professional development activities, but they are not always matched by reforms on the supply side. In a number of countries the use of public funding for professional development activities is restricted to programmes provided by a few organisations (teacher education institutions or agencies specialising in professional development). Especially in those countries where participation in professional development is mandated, this can reduce the incentives for innovation and quality improvement. It is important to encourage a range of professional development providers, ensure that quality standards are being met, and disseminate good practice.

Professional development can also appear fragmented from the individual teacher's perspective. The development of clear teacher profiles and standards of performance at different stages of the teaching career will help to provide a purpose and a framework for professional development, as well as criteria for assessing the results. Teacher portfolios can also allow teachers to keep track of professional development activities in a more systematic manner.

Effective professional development is ongoing, includes training, practice and feedback, and provides adequate time and follow-up support. Successful programmes involve teachers in learning activities that are similar to ones they will use with their students, and encourage the development of teachers' learning communities. A key strategy involves finding ways for teachers to share their expertise and experience more systematically. There is growing interest in ways to build cumulative knowledge across the profession, for example by strengthening connections between research and practice and encouraging schools to develop as learning organisations.

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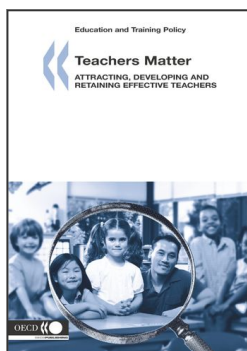
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