Chapter 3

HOW WELL DO SCHOOLS CONTRIBUTE TO LIFELONG LEARNING?

SUMMARY

Lifelong learning means not just prolonging learning throughout life, but also ensuring that schooling prepares young people well for a life of learning. While most are now receiving the solid foundation of an upper secondary education, many have not acquired sufficient competences when they leave school. Education systems need to pay greater attention to improving broad cognitive and motivational outcomes of schooling. In doing so, schools will have to transform, ensuring that their staff are themselves lifelong learners, and that they become innovative as organisations to create more effective learning cultures centred around the perspective of the student. At the same time, education systems need to start asking themselves whether constant expansion focusing on the prolongation of initial education is the best route to lifelong learning, or whether it is making learning too "front-loaded" over the life course.

1. INTRODUCTION: SCHOOLING, THE NEGLECTED LINK IN THE LIFELONG LEARNING AGENDA

The ideal of lifelong learning originated as a strategy for continuing to educate people beyond their school years (OECD, 1973). More recently it has been promoted as a cradle-to-grave concept (OECD, 1996; OECD, 2001a) of which schooling is an early phase. This implies that school systems should have different objectives and characteristics than if education were considered to have been completed when a student leaves for adult and working life. Yet in practice, with a few exceptions (for example, Bryce *et al.*, 2000), there remains a tendency for school education to be assessed in terms of the achievements and targets that systems have set themselves, rather than their broader success in laying the foundation for lifelong learning. This chapter suggests a framework for making this broader assessment. It then applies this framework and uses OECD sources to provide an initial review of the extent to which schools are presently preparing students for lifelong learning.

Lifelong learning can mean different things to different people beyond its obvious reference to individuals of all ages continuing to learn. Some see this ambiguity as appropriate. Others see it as unhelpfully vague. While views differ about whether the concept of lifelong learning should be more precisely specified to give it greater value, its prominence has helped to shift basic assumptions about the nature of education in knowledge-intensive societies. It encapsulates a key idea: learning that is of significance to individuals and to communities must extend well beyond that which is organised through formal education systems; and it should certainly extend well beyond what takes place during childhood and youth. So strong has been the focus on continuing learning, however, that it is less clear that the full consequences of the cradle-to-grave perspective have been grasped; school policies still tend to be divorced from broader strategies aimed at promoting lifelong learning (for a fuller discussion see Istance, 2003).

2. A FRAMEWORK FOR PURSUING LIFELONG LEARNING IN SCHOOL SYSTEMS

In 2001, the OECD proposed four fundamental features of lifelong learning in general for consideration by Ministers of Education, which have implications for schooling in particular (OECD, 2001a, p. 11):

- Organised learning should be *systemic and inter-connected*. This implies that schooling should be an integral part of an overall education system, related coherently to other levels and types of learning. This systemic focus also raises the question of how education and training resources are distributed across the life cycle of each citizen.
- The learner should be *central to the learning process*. Educational policy discussions increasingly refer to this principle, using terms such as "the personalisation of learning". However, in practice putting the individual at centre-stage is a particularly challenging task in compulsory education compared with learning settings that more obviously incorporate personal choice.
- There should be an emphasis on *the motivation to learn*. This is critical, given the importance of maintaining inclusion for the least successful and of self-paced and individual regulation of learning that needs to continue throughout life.
- Recognition should be given to the *multiple objectives of education*. This argues for a need for balance, and it can be contrasted with a criticism that OECD formulations of lifelong learning give excessive weight to the economic rationale for learning and its instrumental ends.

Applying these features, a framework for assessing how well schooling promotes lifelong learning can be constructed at three levels: at the level of individual learners; at the level of schools, their organisation and their teaching practices; and at the level of school and education systems.

- *Students as learners*. Two main questions arise for a framework at this level: How widely does each school system develop the *competences* that support continued active learning throughout life, including "learning to learn"? How well does the experience of schooling *motivate* young people to continue learning? How well students are prepared for continued learning can thus be assessed in terms of the cognitive and non-cognitive qualities developed in young people, while recognising that schools are not uniquely responsible for developing them. To address these questions the chapter draws on results from PISA.
- *Schools, their organisation, and their teaching practices*. At this level, the key questions are: How far have schools adopted models that permit students to become flexible learners and that offer them an appropriately diverse curriculum and diverse assessment methods? And are teachers equipped to move towards these models? To address such questions about the development of learning the chapter draws upon results from several OECD studies of how teaching, knowledge and assessment are organised.
- *School and education systems*. Explicit attention needs to be given to how education in childhood and adolescence contributes to, and is balanced with, the whole range of learning opportunities over the life cycle. To address this, the chapter draws on various international indicators on the transition from school to working life.

The following sections provide a first assessment of how well school systems are performing on each of these three elements of the framework. This assessment is necessarily broad-brush, and cannot reflect the successes of, and challenges facing, specific systems.

3. STUDENTS AS LEARNERS – ESTABLISHING CAPACITIES FOR LIFETIMES OF LEARNING

How widely does each school system develop the competences that support continued active learning? The OECD's Programme for International Student Assessment (PISA) provides a rich source of data to help answer this question: it measures the degree to which 15-year-old students have mastered processes, understood concepts, and become capable of functioning in various situations (including learning situations) by applying reading, mathematical and scientific competences. "PISA focuses on things that 15-year-olds will need in their future lives and seeks to assess what they can do with what they have learned." (OECD, 2001b, p. 14). Scores reflect the aggregate effect of all influences in each country, not just school systems, and take a snapshot of student attributes at a single age; indeed, their precise predictive power of participation in education over the life cycle will only be known over the long haul using longitudinal studies. Nevertheless, it is clear that given the way that the PISA competences have been formulated, the results are highly pertinent to the question of how well young people coming to the end of their schooling are equipped for lifetimes of continued, often self-directed learning.

The domain covered in greatest detail in the PISA 2000 survey[1] was reading literacy. Students were assessed on their ability to retrieve information, to interpret texts, and to reflect on and evaluate texts. Student proficiency is measured for each of these individual aspects and for reading literacy overall. The results are assigned to one of six levels, from Level 5 (the highest) to below Level 1 (the lowest, indicating that students have failed to reach the first threshold of the skills that PISA seeks to measure). Level 3 can be taken as one benchmark of the reading competences required for meeting the demands of lifelong learning in rapidly-changing knowledge-intensive societies because those 15-year-olds who reach it are capable of reading tasks of moderate complexity, such

1. This was the first three-yearly PISA assessment. The results of the second assessment, in 2003, in which the focus was on mathematics, were published at the end of 2004.

as locating multiple pieces of information, making links between different parts of a text, and relating it to familiar everyday knowledge. Those who just fail to get to this level, but are proficient only at Level 2, are capable of basic reading tasks, such as locating straightforward information, making low-level inferences of various types, working out what a well-defined part of a text means, and using some outside knowledge to understand it (Box 3.1 provides definitions of all levels). This is not to define a sharp threshold between being prepared or not for lifelong learning but it is being proposed as a useful benchmark given the importance of making sense of unfamiliar information and using it in more complex ways.

Box 3.1 Definition of levels on the PISA combined reading literacy scale

Level 5	Students are capable of completing sophisticated reading tasks, such as managing information that is difficult to find in unfamiliar texts, showing detailed understanding of such texts and inferring which information in the text is relevant to the task; and being able to evaluate critically and build hypotheses, draw on specialised knowledge and accommodate concepts that may be contrary to expectations.
Level 4	Students are capable of difficult reading tasks, such as locating embedded information, construing meaning from nuances of language and critically evaluating a text.
Level 3	Students are capable of reading tasks of moderate complexity, such as locating multiple pieces of information, making links between different parts of a text, and relating it to familiar everyday knowledge.
Level 2	Students are capable of basic reading tasks, such as locating straightforward information, making low-level inferences of various types, working out what a well-defined part of a text means, and using some outside knowledge to understand it.
Level 1	Students are capable of completing only the least complex reading tasks developed for PISA, such as locating a single piece of information, identifying the main theme of a text or making a simple connection with everyday knowledge.
Below Level 1	Students are not capable of the most basic type of reading that PISA seeks to measure.

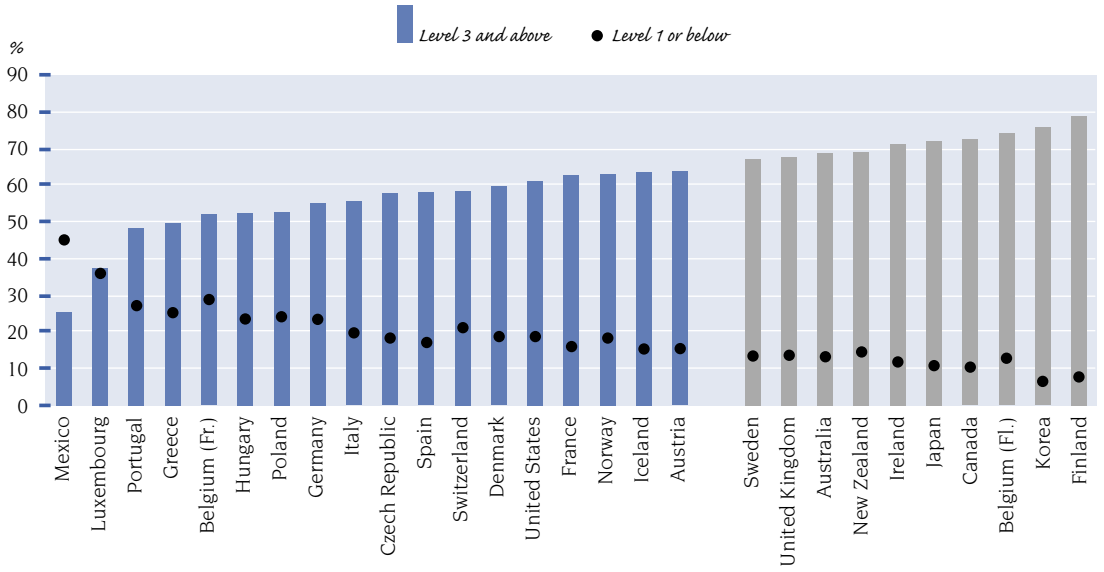
Source: OECD (2001b).

The results from the PISA assessments show wide differences across countries. Perhaps the most notable finding, for the purposes of this chapter, is the very large numbers in many countries who do not attain the Level 3 benchmark. In only ten of the OECD national educational systems surveyed in PISA 2000 do two-thirds of 15-year-olds reach the high minimum Level 3: Australia, Belgium (Flemish Community), Canada, Finland, Ireland, Japan, Korea, New Zealand, Sweden and the United Kingdom. In a further six OECD national educational systems, at least six in ten students reach this threshold. However in Belgium (French Community), the Czech Republic, Germany, Greece, Hungary, Italy, Luxembourg, Mexico, Poland, Portugal, Spain and Switzerland, fewer than 60% do so.

That fewer than six in ten teenagers approaching school-leaving age meet this high minimum of proficiency in so many OECD countries surveyed certainly raises the issue of how well schools

are equipping most young people for lifetimes of learning. Clear variation also occurs between countries in the numbers with the very lowest proficiency. Fifteen per cent or more of students scored at best at Level 1 in as many as 18 of the 28 OECD national educational systems surveyed. In four of them, a quarter or more of all students fell into this group. Such students can at most complete the most basic of reading tasks in familiar settings. Skills at this level are unlikely to serve them adequately in life, or to help much with further study. Thus in the countries with significant numbers at these low levels, there are clear problems of young people leaving school seriously ill-equipped with the knowledge and skills to be lifelong learners.

Figure 3.1 15-year-olds reaching specified thresholds on PISA combined reading literacy scale, 2000 (%)



Notes: Countries are arranged in ascending order of the percentages of 15-year-olds scoring at Level 3 or above on the combined reading literacy scale.

Countries in which two thirds or more of 15-year-olds scored at Level 3 or higher and less than 15% scored at Level 1 or below are grouped separately on the right of the figure.

Turkey and the Slovak Republic did not participate in PISA 2000, and the Netherlands was excluded from certain comparisons because of a low response rate.

Source: OECD (2001b, Table 2.1a).

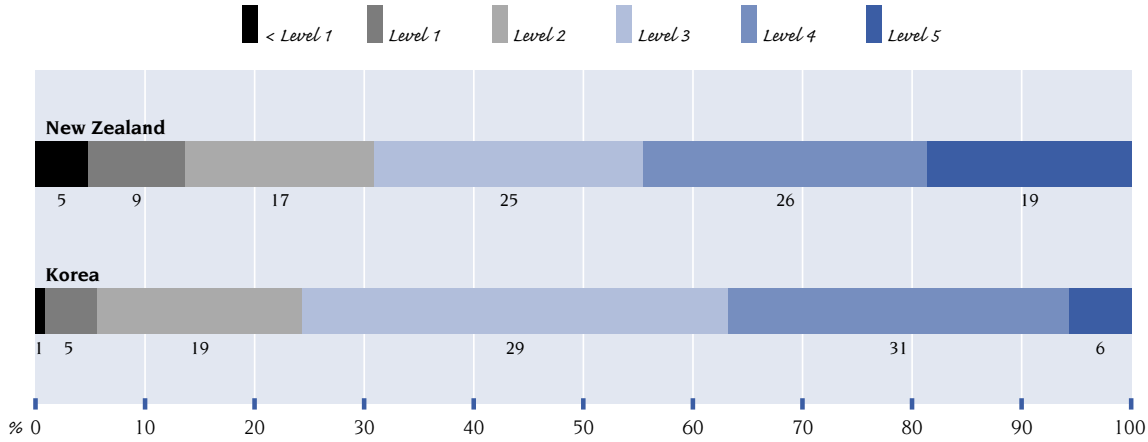
Data for Figure 3.1, p. 96.

Thus one measure of student capacity for lifelong learning can combine two indicators. The first of these, which should be maximised, is the proportion reaching or exceeding a high minimum benchmark on reading literacy: such as PISA Level 3. At this level students are capable of some of the complex and unfamiliar tasks that they will need in order to sustain learning beyond the structured environment of school. The second, which should be minimised, is the proportion which at best achieves the low minimum reading literacy benchmark of PISA Level 1 or below. Figure 3.1 illustrates how a few countries manage to get the great majority of their students above the high minimum, and at the same time to have only a small number who are at or below the low minimum. These countries are Australia, Belgium (Flemish Community), Canada, Finland, Ireland, Japan, Korea, New Zealand, Sweden and the United Kingdom.

As well as looking at how many students reach such thresholds, it is relevant to look at the distribution of students across the different levels of proficiency. Countries with high average

performance on PISA can exhibit quite contrasting patterns of student proficiency and hence of preparedness for lifelong learning. Korea and New Zealand, for instance, both scored well overall compared with the OECD average of 500 points, with Korea at 525 and New Zealand at 529. Figure 3.2 shows that extremely few Korean students have very low proficiency, a smaller proportion than in any other country. Yet a relatively small proportion also performs at the highest Level 5, which is lower than in 18 of the other 28 OECD national educational systems covered. In New Zealand, more than three times as many students as in Korea are at Level 5 (19% compared to 6%) and this proportion is more than in any other country in the 2000 study. On the other hand, New Zealand also has over twice as many students with very low proficiency as Korea (14% compared to 6% at Level 1 or below). It is worth considering the different issues and challenges of such patterns of proficiency in laying the foundation for lifelong learning.

Figure 3.2 Students at each level of proficiency on the PISA combined reading literacy scale, 2000 (%)



Source: OECD (2001b, Table 2.1a).

Another measurable aspect of students' cognitive capacities is the strategies that they use for learning. (This is closely linked to their motivational characteristics, which are discussed below.) Analysis of students' learning strategies, as reported on the PISA questionnaire, shows that those who say that they adopt certain learning strategies have higher than average reading performance for that country. In particular, students who control their own learning, for example by checking that they have reached their learning goals, are likely to perform well. This is also a key requirement for becoming an autonomous learner throughout life. The survey also found that learning strategies differ somewhat for boys and for girls, with girls more likely to work out what they need to know, while boys are relatively strong in elaboration strategies and information processing (Artelt *et al.*, 2003).

Unfortunately, differences in the way that students in different cultures interpret questions make it possible to compare only a few such approaches to learning across countries. One type of learning strategy in PISA 2000 that is comparable across countries is the use of memorisation strategies. There seems no consistent pattern between these strategies and overall performance: in some countries with high scores (Australia, Ireland, New Zealand and Sweden, for instance) students use memorisation more than average while in others (for example Korea and Finland) they rely on it less. One hypothesis could be that, in a rapidly changing world, personal knowledge management

strategies become increasingly important compared with abilities of recall. Another comparable feature of students' approaches to learning measured in PISA that is relevant to lifelong learning is how much they enjoy and engage in co-operative learning involving a team approach. In most countries the attitude of 15-year-olds is positive towards co-operation in learning, especially so in the United States, Denmark and Portugal. Students in Hungary and Korea, however, are "markedly negative" in their attitudes to co-operative learning and Hungarian students also rely more on memorisation than in other countries (Artelt *et al.*, 2003, p. 43). The different relationships involved would need much firmer evidence, however, before clear conclusions could be drawn about preparedness for lifelong learning.

4. STUDENTS AS LEARNERS – MOTIVATION AND ENGAGEMENT

One of the four fundamental features of lifelong learning identified in the framework of Section 2 is the emphasis on the motivation to learn. Learners will often need dogged determination to continue in the face of obstacles and the ability to identify opportunities when signposts are unclear, all of which calls for motivation. Schools are likely to influence whether students continue learning as much by fostering motivation as by generating knowledge and skills. The common story repeatedly told by older adults with the least interest in learning is of the negative experience of school days that has put them off education for life (see for example OECD, 1999; OECD, 2003e, Chapter 5). Fostering motivation and cognitive competence are not to be seen in opposition; ideally, the one should reinforce the other.

PISA results show that motivation plays a part in students' reports about their approaches to learning. Although aspects of motivation cannot readily be compared across countries, some findings about students' motivation, self-confidence and use of effective learning strategies are significant. One such finding is that only a few schools stand out in each country as fostering strong attitudes to learning across their full student body (Artelt *et al.*, 2003, p. 49): even where academic performance is strong, a school cannot take it for granted that all of its students are being well prepared to learn for life.

PISA has also generated important findings on students' more general motivation and their engagement at school (OECD, 2001b; OECD, 2002). The findings are in general positive. Contrary to the common image of teenagers as generally disengaged from their schools as alien or irrelevant environments, approximately three quarters of 15-year-olds across OECD countries as a whole reported in 2000 that they agree or strongly agree with the statement "I feel like I belong" at school. The proportion rises to 85% or more in certain countries such as Australia, Austria, Finland, Hungary, Iceland and Mexico. Asked whether they feel "awkward and out of place", only around one in seven students in most OECD countries agreed, and fewer than one in ten in the Czech Republic, Hungary, Ireland, Italy, Sweden and the United Kingdom. Even lower proportions state that they agree or strongly agree that "I feel like an outsider (or left out of things)". Fewer than one in ten described themselves in this bleak situation on average in OECD countries, and only between 5 and 6% did so in Denmark, Finland, Germany, Japan, the Netherlands, Norway, Spain and Sweden.

While positive attitudes reflect the role that schools play as centres of friendship and peer group contact, as well as their role as welcoming or stimulating learning environments, such evidence sheds a positive light on schooling in its relationship to lifelong learning. It would be hard for schools to lay a firm motivational basis for later learning if a high proportion of students felt they did not belong there. All is not positive, however. Even a relatively small minority of teenagers reporting negative attitudes is of concern, representing hundreds of thousands of students who do not connect with school. Moreover, in some countries, the proportion is not so small. Around one student in five reports feeling out of place in Austria, Belgium, Japan, Luxembourg and Portugal.

The OECD's analysis has developed an overall index of students' sense of belonging at school. This index combines the answers to six different questions about belonging at school (see Box 3.2). Figure 3.3 shows how many students in each country have relatively low scores on this index. A striking result is that in two of the three countries where a sense of belonging is lowest (Japan and Korea) students have some of the highest performance in reading, mathematical and scientific literacy. They also have some of the lowest rates of school absenteeism, as measured in PISA. So students in these countries appear to attend school, and perform well there, even though they feel least attuned to it as an environment. It is also hard to explain why in Sweden, where adults have high levels of measured competence and participation in learning[2] and where students in PISA expressed a high sense of belonging at school, they also reported a high level of absenteeism. Thus it appears that attitudes towards one's school environment do not translate directly into performance or attendance, since various cultural and socio-economic factors intervene to mediate these relationships. The lack of consistent patterns reinforces the need to use a broad range of outcomes to assess the enduring impact of education.

Box 3.2 Students' overall "sense of belonging"

Students were asked whether they strongly agreed, agreed, disagreed or strongly disagreed, in each case that: school is a place where:

a) I feel like an outsider (or left out of things).

b) I make friends easily.

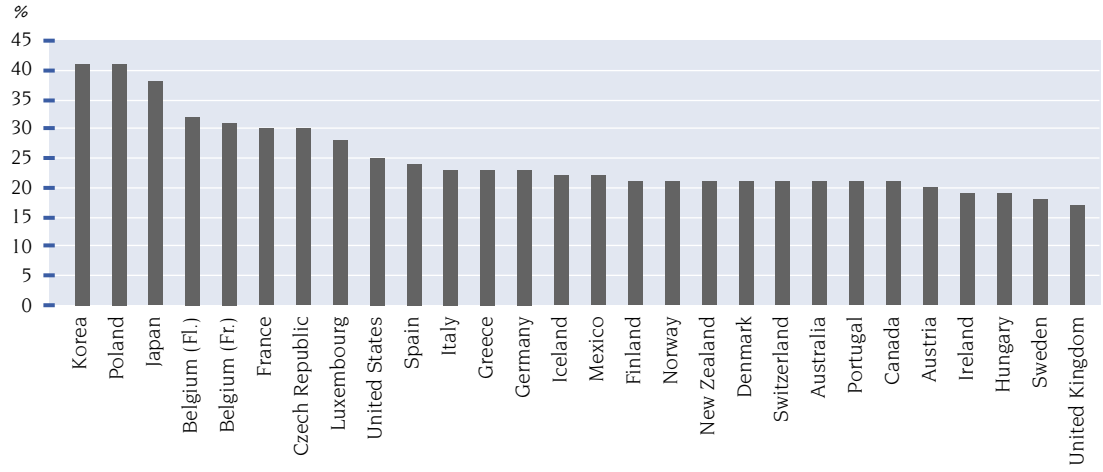
c) I feel like I belong.

d) I feel awkward and out of place.

e) Other students seem to like me.

f) I feel lonely.

Figure 3.3 Students with a low sense of belonging at school, 2000 (%)



Note: Students classified as having a low sense of belonging at school are those who responded in the negative to at least one item in the six-item scale.

Source: OECD (2003d).

Data for Figure 3.3, p. 96.

2 . As measured on the International Adult Literacy Survey (OECD, 2000d).

One aspect of lifelong learning as a guiding concept mentioned at the outset is its openness – for some, vagueness – about the content of learning which relates to both the cognitive and non-cognitive. Implementation demands that attention be paid to content in ways that are not defined by any particular school curriculum. A useful point of departure for considering how the curriculum should support lifelong learning is the key competences developed through OECD's DeSeCo (Definition and Selection of Competences) project.[3] These competences are not just concerned with what goes on in school, but they do offer a way to assess the curriculum and the outcomes of education against broader objectives informed by lifelong learning objectives (Rychen and Salganik, 2003).

The fundamental competences identified by DeSeCo fall in three areas. The first is the ability to act autonomously. In turn, this incorporates two central ideas: the development of personal identity; and the exercise of autonomy in decision-making and choice. The abilities involved enable and empower a sense of self, the exercise of rights, and the assumption of responsibilities in different spheres of life. They require people to have an orientation toward the future and an awareness and understanding of their environment. Further details are listed in Box 3.3.

Box 3.3 Key competences for acting autonomously

- *The ability to defend and assert one's rights, interests, limits and needs*: this empowers people to put themselves forward and make choices as citizens, family members, workers, and consumers.
- *The ability to form and conduct life plans and personal projects*: this enables people to set goals that make sense in their lives and that are consistent with their values, and to achieve these goals.
- *The ability to act within the larger context*: this calls for people to understand the functioning of their larger context, their position in it, and for their behaviour to be informed by the possible consequences of their actions.

Source: Rychen and Salganik (2003).

Using tools interactively is the second area of key competences identified by DeSeCo. The notion of a tool is defined broadly, and includes all of the instruments that help people to meet the demands of modern society. These include language, information and knowledge, as well as physical objects such as computers and machines. To use a tool effectively assumes that we understand how it changes the way that we interact with the world around us. The third core competence area identified by DeSeCo is functioning in socially heterogeneous groups. Being dependent on and having ties to others, people need to be able to interact with those with different personalities and backgrounds. The specific DeSeCo formulations in this case concern the ability to relate to others, to co-operate, and to manage and resolve conflict.

3. DeSeCo was established at the end of 1997 as an international programme under OECD to meet the need for an explicit overarching conceptual framework to guide diverse work on competence and its measurement. DeSeCo's focus is on competences that matter both at the individual and societal level and in working life as well as life outside of work. The analysis and reflection in DeSeCo have not been restricted to what can be learned and taught in schools nor to what is readily measurable in large-scale assessments.

Such competence areas are not proposed as programmes or school curricula, and many will be acquired through a diffuse process combining formal and non-formal learning. The formulation of such competences does serve as a set of guidelines in this context to stimulate the question: "How well are these key competences promoted, directly or indirectly, through our schools?". Together with the measures developed through the PISA programme, they provide a valuable battery of reference points on progress towards lifelong learning.

5. SCHOOL ORGANISATION AND KNOWLEDGE MANAGEMENT

As an integral part of the overall range of learning opportunities, schools need to share the fundamental features of lifelong learning that were outlined at the beginning of this chapter: in particular they must become learner-centred. Many studies have argued for more flexible, open forms of learning and of school organisation but while it is not difficult to identify numerous promising examples, more sustained and widespread change is far less common. A variety of the factors inhibiting fundamental change to traditional practices has been analysed in OECD's Centre for Educational Research and Innovation (CERI) work on knowledge management (OECD, 2000b; OECD, 2003b; OECD, 2004a). In general, schools have weak networking and knowledge-sharing among teachers. Spending on educational research and development is very low and its application is quite limited. Most of the professional knowledge that teachers use in their daily work is tacit: it is rarely made explicit or shared with colleagues. Schools and classrooms are normally isolated one from another rather than interlinked. In short, schools still tend to have only rudimentary knowledge management practices, despite knowledge being education's explicit business.

The OECD's latest analysis of knowledge management in education (OECD, 2004a) identifies four key "pumps of innovation" which reveal shortcomings in realising innovative potential in the education sector:

- The first pump is *science-based innovation*. Education has not traditionally made much direct use of research knowledge, and the analysis suggests that there may be cultural resistance to doing so.
- The second pump is *collaboration between users and doers – horizontally organised innovation*. Here, there are obvious benefits in terms of teachers pooling their knowledge through networks, but incentives to do so remain underdeveloped.
- The third pump is *modular structures, with freedom to innovate yet joined together as a whole system*. Here, there are tensions between central and devolved control over the content and methods of education. A key problem occurs when the curriculum is presented as a static set of guidelines rather than a dynamic and evolving technique.
- The fourth pump is *information and communication technologies*. There is a powerful potential for ICT to transform education, but its use in schools remains underdeveloped, partly because the main *modus operandi* of school administration and instruction are highly resistant to change.

Despite such problems, there are signs of change. For example in relation to the first of the above innovation pumps, there is a growing attention to educational research and development (OECD, 2003b; OECD, 2004a). There is also a growing and related focus on decision-making that is informed by a robust evidence base. Furthermore networking is an emerging form of practice, of professional development and of governance (OECD, 2003a). Modularity is a familiar feature of educational organisation but what is really critical is what takes place at the interfaces – how connections are made and innovation generalised within systems – as much as within discrete units. School systems will innovate at the interfaces the more that they overcome the forms of bureaucracy that stifle innovation. In so doing, however, those responsible for making connections and generalising innovation become increasingly diffuse, and indeed the very notion of a "system" itself diffuses. So while the need for

a systemic approach appears to be fundamental to lifelong learning, this begs the question of who initiates reform and co-ordinates it when responsibilities are widely diffused.

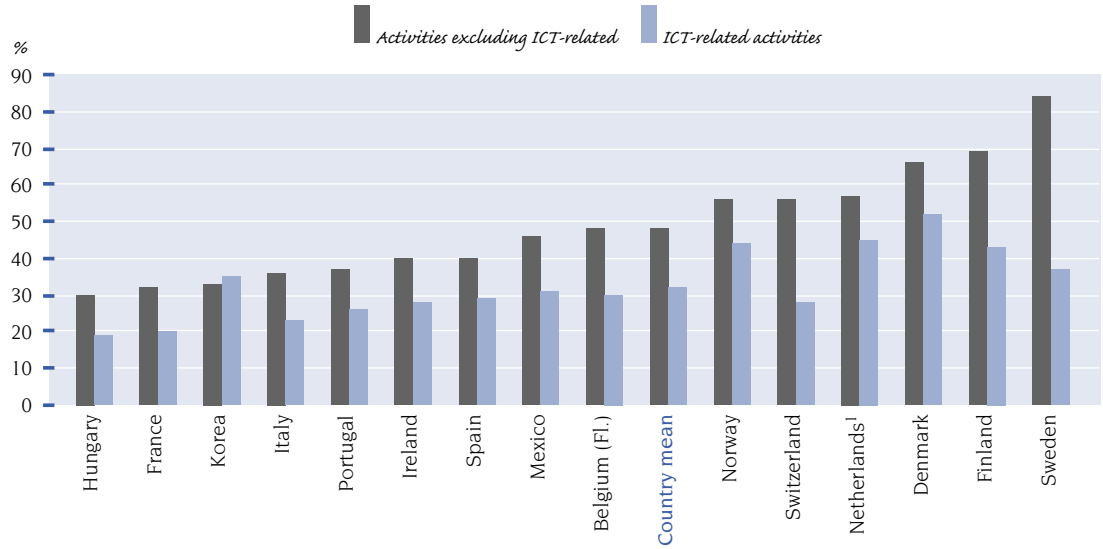
The fourth innovation pump, ICT, is regarded as especially important in this analysis as a source of information creation and of new modes of knowledge production. It can diminish the restraints of physical proximity, promote the benefits of scale, and act as a powerful motor for collective action. ICT in education is the subject of its own chapter in this volume. It is an area of major investments by school systems across OECD countries so that, as with modularity, there are signs of change as regards this source of innovation. But even within upper secondary education, where the indicators show high ICT investments, the International Survey of Upper Secondary Schools (ISUSS) for school year 2000-01 found that "… the educational use of computers is still sporadic in all participating countries. Computers are mostly used to obtain information from the Internet" (OECD, 2004b, p. 134). The CERI report *Learning to Change – ICT in Schools* (OECD, 2001c), echoes this message. It suggested that powerful tensions exist between traditional curricula and teaching strategies and the open, skills-based, student-centred approaches that can potentially be supported by ICT: "Dominant curricular and organisational patterns in school were not designed for the Internet age, and often inhibit its effective use." (OECD, 2001c, p. 15) Carnoy's (2002) analysis for the OECD of ICT use in education concludes that there is much that might be done, using ICT, to improve teacher knowledge, to improve the ways that information about student progress is shared among teachers, and to improve teaching strategies to respond to diverse learning needs.

Teachers are central to the success of schools in fostering lifelong learning. Where serious teacher shortages exist, efforts by schools to do more than in the past to prepare students for a life of learning in dynamic, flexible organisations are clearly at risk. The OECD study, *Teachers Matter: Attracting, Developing and Retaining Effective Teachers* (OECD, 2005a) has found marked differences among countries in reported teacher shortages. These are critical in some countries, particularly in high-demand subject areas such as mathematics. However they are non-existent in others such as Austria, Korea and Portugal, which enjoy a plentiful pool of candidates from which to draw. In all, about half of OECD countries have reported such shortages.

The study has consistently emphasised, however, that improved teaching should not be seen narrowly as a quantitative matter. It is essentially about the specific qualities, as well as the overall quality, of those coming into and remaining in the teaching force (OECD, 2005a; OECD, 2004c). Stressing the importance of quality immediately invites the question of what quality means. It must refer to more than simply the possession of advanced tertiary qualifications, however desirable they may be. It is also about the attitudes and professionalism that teachers bring to the job and develop during their careers. The literature is replete with lists of criteria for effective and high quality teaching. These include the ability to create a climate of mutually reinforcing high expectations; the ability to create positive student-centred learning environments with frequent feedback; and the ability to engage in intensive collaboration with colleagues. The challenge in developing teacher skills and professionalism consistent with lifelong learning may well be less to develop new criteria, than to ensure that they are the norm rather than exceptional practice across whole school systems. The organisation of schools as learning organisations and the fostering of such practices collectively are at least as important as the capabilities of individual teachers.

Central to both the collective professionalism of the teaching force and individual capabilities is the capacity to learn. There is no fixed definition of professional development, which in any case covers only one form of teacher learning. That said, continuing professional development, like initial training and induction, plays a critical role in establishing how teachers view their

Figure 3.4 Upper secondary teachers who participated in professional development activities in the 2000-01 school year, according to principals (%)



1. Country did not meet international sampling requirements.
Source: OECD (2004b), Table 3.12.

Data for Figure 3.4, p. 97.

professionalism and the educational challenges they will be facing. And the evidence shows that the extent to which teachers engage in professional development is very diverse across countries, as well as within them. The 2000 PISA survey indicated that on average across the surveyed countries principals report that around 40% of teachers attended a programme of professional development. This varied very widely, however: from less than 10% in Greece to 70% in New Zealand.[4] This finding is mirrored by the OECD Survey of Upper Secondary Schools (see Figure 3.4). Also based on principals' reports, this found very wide differences in teacher participation in professional development activities over the 2000-01 school year. The percentages of teachers who were reported to have participated varied from a high of over 80% in Sweden to under a third in Hungary (OECD, 2004b).

Teachers' continuous learning is influenced by the extent and nature of their professional collaboration, as well as by discrete professional development events. The structuring of their careers also strongly influences the continuous learning that teachers engage in. It is through exposure to different environments and challenges that teachers continue to learn. A major conclusion emerging from OECD work on attracting, retaining and developing effective teachers is that the career remains for the most part excessively flat and undifferentiated. In most countries there are insufficient opportunities and incentives for teachers to build careers that reflect their developing skills, performance and responsibilities. The existence of such career patterns would help to define teacher competences as part of a lifelong learning continuum. At the same time, there is general agreement that the demands made on teachers have widened and the OECD study has organised these into the framework presented in Box 3.4. Such demands are broadly consistent with the lifelong learning agenda such that the success of schools in meeting this agenda is highly dependent on the capacity of teachers in these different domains.

4. The New Zealand figure may have been unusually high, however, because of the introduction of new qualifications at the time of the survey.

Box 3.4 The broadening scope of teacher responsibilities

At *the individual student level*:

- Initiating and managing learning processes.
- Responding to the learning needs of individual learners.
- Integrating formative and summative assessment.

At *the classroom level*:

- Teaching in multicultural classrooms.
- Creating new cross-curricular emphases.
- Integrating students with special needs.

At *the school level*:

- Working and planning in teams.
- Evaluating and systematically improving planning.
- Using ICT in teaching and administration.
- Initiating projects between schools and international co-operation.
- Improving management and shared leadership.

At *the level of parents and the wider community*:

- Providing personal advice to parents.
- Building community partnerships for learning.

Source: OECD (2005a), pp. 87-88.

The intensive use of formative assessment of students and, just as critically, its use to shape teaching, are part of a more demanding definition of professionalism and have been studied in the most recent OECD/CERI "What Works in Innovation in Education" series (OECD, 2005b, which includes literature reviews relating to English-, French-, and German-language research). Formative assessment approaches[5] have been shown to be associated with very significant learning gains. Black and Wiliam (1998, p. 61) argue that "… the gains in achievement appear to be quite considerable … and among the largest ever reported for educational interventions". As well as promising to raise standards, such approaches address equity head on. They do so through the individualisation of teaching and learning strategies and through the continual identification of, and responses to, students who are experiencing difficulties. Moreover, these approaches are explicitly about developing cultures of learning in schools and classrooms. For all of these reasons, they are critical for lifelong learning. At the same time, they receive far less prominence than conventional forms of assessment such as achievement tests and examinations. Indeed the promotion of formative approaches may be inhibited by undue attention to such high-profile tests. Like the other directions for change discussed in this section, the adoption of formative assessment makes high demands upon teacher professionalism and school organisation as an integral part of the reform and lifelong learning agenda for schools.

5. Formative assessment refers to assessment of student progress that is an ongoing part of everyday teaching, rather than a special event. Formative assessment is designed to provide teachers and students with information about students' learning needs. It is designed to help students to assess their progress towards learning goals, and to help teachers to change and improve their teaching. It can include data from a number of sources such as classroom interactions, as well as more conventional forms of assessment such as tests and examinations.

Just as it is important to identify learning *needs* through formative assessment, so also it is critical to map out learning *routes* through effective guidance and information services. This becomes increasingly important as learning follows a continual and sometimes complex set of individualised pathways through initial schooling and beyond. It becomes even more obvious as countries pursue demand-led, as opposed to supply-driven models of provision. How adequate are these systems to meet the needs of all pupils and students, and how well adapted to the challenges of lifelong learning? The recent OECD review of career guidance policies found that much remains to be done (OECD, 2003c; OECD, 2004d). It welcomed a general tendency for guidance to be increasingly embedded within the school curriculum in OECD countries as a step towards an integrated approach to lifelong learning, rather than guidance issues being raised in an isolated way when schooling is nearly complete. However the analysis suggests that a broader approach is required, one much more explicitly tied to a lifelong learning agenda: "… at the least, career guidance services need to broaden from largely providing assistance with *decisions* at limited and selected points in people's lives to an approach which also encompasses the development of career-management *skills*." (OECD, 2003c, p. 25)

The powerful weight of traditional school organisation may thus impede the change that is desirable if schools are to offer the highly professional, learner-centred environments necessary for laying the basis for lifetimes of learning. A positive message from OECD work is that there are numerous excellent examples to draw on which show that change is possible. However school systems are very large and complex undertakings and the challenge is how such reform can be generalised and sustained across the board. The scenarios for the future of schooling developed by OECD (2001d, 2003a) reflect these differences in particular in the contrast between the bureaucratic "status quo" scenario and what are described as "re-schooling" futures (the "de-schooling" scenarios – which may also be consistent with lifelong learning – would instead witness an extensive dismantling of existing strong school systems). The shifts described in this section would be consistent with the emergence of the "re-schooling" scenario entitled "schools as focused learning organisations". More radical still is the other "re-schooling" model described as "schools as core social centres", in which the boundaries blur between schools and teachers, on the one hand, and communities, groups, and other professionals, on the other. This could provide a powerful platform for lifelong learning, both as education and other organisations share the same facilities and as the different generations come into much closer interaction.

6. SCHOOLING AND THE BROADER LIFE CYCLE DISTRIBUTION OF LEARNING OPPORTUNITIES

The first fundamental feature of lifelong learning outlined at the beginning of this chapter argues the need for a systemic and inter-connected approach to the way that learning is organised, rather than a fragmented approach in which policies for each educational sector are made separately. This calls for attention to how schooling fits into the whole initial education and training system. It also requires schooling to be seen in the context of the distribution of opportunities to learn over the entire life cycle. Yet serious consideration of the whole, as well as of the parts, of the education and training system is surprisingly rare. It requires careful thought to be given to the criteria by which progress towards learning societies is assessed. Such an exercise may sit uncomfortably with simple quantitative targets for more participation and longer duration of studies. It would need to recognise alternative forms of education. It would also need to recognise the possibility of a shorter duration of initial education alongside opportunities to return to learning at different points in the life cycle. Such an approach to target-setting is more complex but will be more appropriate to assessing progress towards lifelong learning.

When the early lifelong learning proposals emerged three decades or more ago, many proponents predicted that the front end model of education, concentrated in the early years of childhood

and in adolescence, would fade away. Parallel predictions were made by radical de-schoolers at that time about the limited future of the school as an institution. Neither prediction has stood up well to the test of time. Education has become an even higher priority on political agendas, and participation in front end initial education systems continues to rise (see below). Indeed, the length of time that the young stay in initial education is widely interpreted as a positive indicator. Commentators often compare countries not only in terms of assessments of measured competences such as PISA or qualifications gained but also in terms of participation rates by age of people in their late teens or early 20s as if duration of initial studies by itself is synonymous with progress towards knowledge-based and learning societies.

There are, however, good reasons at least to examine the "more-of-the-same" assumptions that unquestioningly support ever-lengthening careers in initial education (see Schuller, Schuetze and Istance, 2002). There are social and cultural concerns about delaying the attainment of adulthood, and what this means for the healthy development of individuals and society as a whole. An important question that needs to be addressed is how the interest of many young people in learning, those with lowest motivation and achievement, can be maintained if the expected duration of initial education is continually pushed outwards and seemingly beyond grasp. The irony is that the goals of educational inclusion may be undermined by the front end expansion of systems that aims to promote these goals. Financing questions and issues of the affordability of very extensive periods of initial education, stretching from early childhood education through to tertiary education, are equally relevant to the argument. Such issues are particularly relevant as public expenditure is under intense pressure in most OECD countries. In ageing societies with pension bills growing steeply, lengthening periods of initial education help to increase dependency ratios, squeezing the active generation into an ever-tighter age range in the middle of people's lives. The sustainability of this trend is an urgent issue[6] (see also Duval, 2003).

In raising these questions, and reconsidering whether more participation in education by young adults is always better, the evidence relating to front end expansion and its interpretation needs to be carefully considered. Already by 2000, OECD analysis of transitions from school to working life suggested that between 1990 and 1996 the duration of young people's transition from initial education to working life grew by an international average of nearly two years (see OECD, 2000c). Now, nearly four-fifths of the 15-19 population across the OECD are students (79.4%), and in eight countries (Belgium, the Czech Republic, Finland, France, Germany, the Netherlands, Poland and Sweden) 85% or more are enrolled. The proportion of 20-to-29-year-olds who are students stands at over one in five for the OECD as a whole (22.7%), and over one in three in Australia, Denmark, Finland, Iceland and Sweden (OECD, 2004e, Table C1.2).

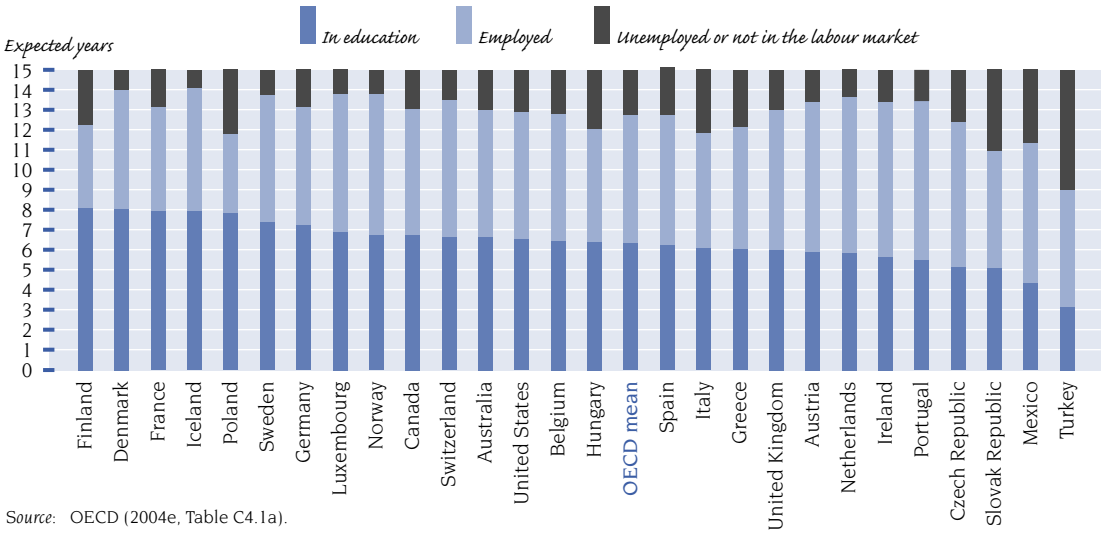
Another way to look at this question is through the lens of the expected career of the average 15-year-old, looking out over the next 15 years.[7] Within living memory, the age of 15 marked the end of education for the majority of the population. At the beginning of the 21st century, taking OECD countries and males and females together, the average 15-year-old can expect to spend as much time up to the age of 30 in education (6.4 years) as in employment (also 6.4) (OECD, 2004e, Table C4.1a).[8] Figure 3.5 shows that in thirteen OECD countries, the number of years that a 15-year-old can expect

6. OECD health data show that life expectancy at age 65 continued to grow for both men and women in all OECD countries over the decade 1991 to 2001 (OECD, 2004g, pp. 10-11). At the same time, the sustainability of retirement patterns for older workers is expressed in uncompromising terms on the OECD's web pages for employment: "one of the striking paradoxes of today's OECD societies is that although people live longer, they also tend to retire earlier – a situation which is clearly unsustainable from both the economic and social points of view."

7. Based on current enrolment patterns, rather than upon predictions about what might happen to participation rates up to 2020. Such patterns may be sensitive to unemployment rates.

8. The remaining 2.2 years can be expected to be spent either unemployed or out of the labour market altogether.

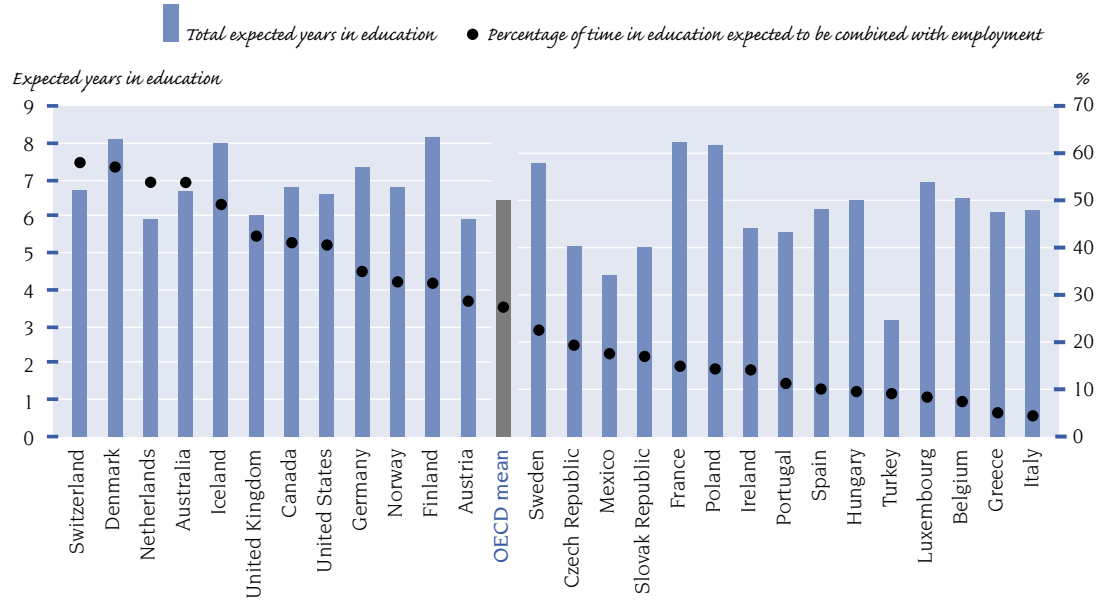
Figure 3.5 **Expected years in education and not in education for 15-to-29-year-olds, 2002**



Source: OECD (2004e, Table C4.1a).
Data for Figure 3.5, p. 97.

to spend in education by the age of 30 exceeds the number of years expected to be spent in employment. In Finland and Poland, today's 15-year-olds can expect to spend only around half as much time in employment as in education before they turn 30. In France, the expected time in employment represents only around two thirds of that spent in education, and in Denmark and Iceland it is about three quarters of the time in education. As these are averages for the whole age group, they understate the extent to which the well-qualified are spending so much of the first three decades of their lives in education.

Figure 3.6 Expected years in education before age 30 of 15-year-olds (2002) and percentage of time in education expected to be combined with employment



Source: OECD (2004e, Table C4.1a).
Data for Figure 3.6, p. 98.

The increased participation in education that can be expected by today's 15-year-olds up to the age of 30 could be the result of two factors: an extension of the period of initial education including increased participation in tertiary education after the end of school or a growing habit of returning to learning at times after this initial period is over. The latter possibility could be regarded as providing a welcome degree of flexibility and diversity of experience for young people, which might strengthen their motivation for further learning later on. This cannot be measured precisely, but one relevant indicator is the proportion of time that 15-to-29-year-olds are expected to spend, within their total expected number of years in education, combining education with employment. This could be either through: part-time jobs plus full-time study; full-time jobs plus part-time study; or through structured work-study programmes such as apprenticeships.[9]

Figure 3.6 shows that across OECD countries, today's 15-year-olds can expect to spend around a quarter of the 6.4 years that they will spend in education before the age of 30 combining learning with work. In Switzerland, Denmark, the Netherlands and Australia, over half of this time in education will be combined with working. On the other hand today's young people in Spain, Hungary, Turkey, Luxembourg, Belgium, Greece and Italy can expect to combine hardly any of their time in education with work. Such differences underline just how varied internationally are the patterns of experiencing adolescence and early adulthood: there is little evidence of convergence to an international norm.

If there is to be a re-examination of the continual extension of the initial education systems, including what this might mean for schools as well as for tertiary education, this should not undermine advances that are delivering a strong initial foundation to most of the young population as seen, for instance, in the completion of upper secondary education. Three-quarters of 25-to-34-year-olds have done so across OECD countries as a whole, and in several countries it is over 90%. The quest for better ways to lay a foundation for learning throughout life, however, need not jeopardise gains. The challenge is to explore alternative ways of sustaining progress towards learning societies without the financial and other costs associated with the continual expansion of initial education systems post-school. The exploration of such alternatives immediately raises questions about provision from the earliest years up to the end of the secondary cycle.

One key set of questions concerns how more can be done to develop schools as learning organisations in ways that are consistent with lifelong learning. Another set concerns the tight linkages that exist, and which underpin the structural organisation of school systems, between the age of the student and progression through the school cycle. Might much more flexibility be introduced into these linkages in order to create personalised learning pathways during the compulsory school cycles? As schools move nearer to becoming learning organisations, and as quality gains bear fruit, this might well open up the prospect of increasing numbers of students moving on to the upper secondary level at younger ages – one, two or three years before the conventional age – before then progressing to tertiary studies directly or experiencing other civic or employment activities. Hence reducing the dominance of a front-end focus is about changes in schooling towards greater flexibility and productivity, and the increased engagement in learning of those in the compulsory years, as well as changes at the post-compulsory and tertiary levels.

If searching questions are to be asked about the established structural patterns of schooling, this could well include review of the main cycles – primary, lower and upper secondary – that so powerfully define the school career and institutional structures at present. So extensive have been the changes in participation and attainment at the upper secondary and tertiary levels, that such

9. Another indicator, not reflected in this measure, of flexible activity patterns during late adolescence would be a measure of the periods spent alternating between work, education and other activities.

ingrained features of the educational landscape might need themselves to be scrutinised. One avenue for exploration is whether the hard demarcation between primary and secondary schooling should be substantially blurred, with these levels integrated into a shorter cycle of uniformly intense and high quality provision. This might then serve as a platform for highly diversified, even "de-schooled" opportunities along pathways combining education, work and a variety of other civic and social activities. As tertiary education is already becoming a mass experience, should its conventional starting age and its relationship to upper secondary programmes now be thoroughly reviewed? A broad lifelong learning focus, as opposed to fragmented sectoral perspectives, stimulates the posing of such larger questions.

7. CONCLUSION

This chapter has argued that the ways in which schools can and should contribute to the overall enterprise of lifelong learning have been seriously neglected, in international and even national discussions. Using existing OECD analyses, the chapter has presented a three-level framework for assessing how schools are laying the foundations for lifelong learning. The framework is at the level of:

- School students as learners, focusing upon the competences and motivation acquired for lifetimes in learning.
- The organisation of schools and of their teaching practices.
- School systems, and of how schooling fits into initial education and training systems and the wider distribution of educational opportunities over the life cycle.

The chapter arrives at both positive and negative conclusions about the contribution that schools are making to lifelong learning. On the positive side, upper secondary attainment levels are very high in many countries, and schools tend to be judged positively by young people as places where they feel they belong, even among teenagers of an age when they might most feel alienated from them. Another positive conclusion is that combining education and employment has become a normal part of the transition from school to adult life in a number of countries, which may often bring flexibility to pathways and choices in line with a less rigid demarcation between initial and continuing education. And finally, there are a number of the key changes to transform schools more systematically into learning organisations: networking, professional development, individualised learning assessment and responsive teaching strategies, R&D, and the exploitation of ICT by schools and educational management. Reform agendas for schools have permitted many of these changes to move from the margins into more mainstream policy discussion.

But there are also less positive conclusions. Of particular concern is the fact that very large numbers of school students do not achieve Level 3 or over on PISA literacy tests across the OECD as a whole, raising the question of how well they are equipped with the competences needed for lifetimes of learning in complex knowledge-based societies. The chapter has highlighted a number of other factors that weaken the contribution that schools are making to lifelong learning. The school sector as a whole is still characterised by very low activity and spending on research and development, and by weakly developed networking and knowledge sharing among teaching staff, and the potential of ICT to contribute to better teaching and learning is poorly exploited, as is the potential of career guidance to improve students' progress through complex learning pathways. In addition, teaching and assessment approaches that foster active learning for all students are only patchy in practice, and participation by teachers in professional development varies very widely and is low in some countries. Teachers' careers tend to be too undifferentiated to permit a continuum of professional learning. Finally, the extension of initial education systems has continued apace, in

terms of the duration of studies for those with high attainments as well as bringing those with low attainments up to the key thresholds reached by the majority, raising questions about desirability, sustainability, and compatibility with the promotion of lifelong learning.

Working towards lifelong learning through the education provided in schools does not necessarily require whole new batteries of items to add to over-loaded current reform agendas. Rather it demands a scaling up of a range of emergent practices and innovations and greater awareness that the guiding aim of lifelong learning applies as much to schools as it does to all other settings of education and training. Indeed, the broader perspective of moving towards lifelong learning can bring a strategic perspective to school reform rather than reform sticking closely to the achievements and targets that systems have set themselves. In the language of the OECD scenarios, it means more systematic movement towards the models of "re-schooling", possibly combined with some "de-schooling" for older school students, away from the rigidities of the bureaucratic status quo.

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Data for Figure 3.1

15-year-olds reaching specified thresholds on PISA combined reading literacy scale, 2000 (%)

	Level 3 and above	Level 1 or below
Mexico	26	44
Luxembourg	37	35
Portugal	48	26
Greece	50	24
Belgium (Fr.)	52	28
Hungary	52	23
Poland	53	23
Germany	55	23
Italy	56	19
Czech Republic	58	18
Spain	58	16
Switzerland	58	20
Denmark	60	18
United States	61	18
France	63	15
Norway	63	18
Iceland	64	15
Austria	64	15
Sweden	67	13
United Kingdom	68	13
Australia	69	12
New Zealand	69	14
Ireland	71	11
Japan	72	10
Canada	72	10
Belgium (Fl.)	74	12
Korea	76	6
Finland	79	7

Source: OECD (2001b, Table 2.1a).

Data for Figure 3.3

Students with a low sense of belonging at school, 2000 (%)

	%
Korea	41
Poland	41
Japan	38
Belgium (Fl.)	32
Belgium (Fr.)	31
France	30
Czech Republic	30
Luxembourg	28
United States	25
Spain	24
Italy	23
Greece	23
Germany	23
Iceland	22
Mexico	22
Finland	21
Norway	21
New Zealand	21
Denmark	21
Switzerland	21
Australia	21
Portugal	21
Canada	21
Austria	20
Ireland	19
Hungary	19
Sweden	18
United Kingdom	17

Source: OECD (2003d).

Data for Figure 3.4

Upper secondary teachers who participated in professional development activities in the 2000-01 school year, according to principals (%)

	Professional development activities excluding ICT-related	ICT-related professional development activities
Hungary	30	19
France	32	20
Korea	33	35
Italy	36	23
Portugal	37	26
Ireland	40	28
Spain	40	29
Mexico	46	31
Belgium (Fl.)	48	30
Country mean	48	32
Norway	56	44
Switzerland	56	28
Netherlands[1]	57	45
Denmark	66	52
Finland	69	43
Sweden	84	37

1. Country did not meet international sampling requirements.
Source: OECD (2004b, Table 3.12).

Data for Figure 3.5

Expected years in education and not in education for 15-to-29-year-olds, 2002

	In education	Employed	Unemployed or not in the labour market	Total
Finland	8.1	4.2	2.7	6.9
Denmark	8.1	6.0	0.9	6.9
France	8.0	5.2	1.8	7.0
Iceland	8.0	6.2	0.8	7.0
Poland	7.9	3.9	3.1	7.1
Sweden	7.5	6.4	1.2	7.5
Germany	7.3	5.9	1.8	7.7
Luxembourg	6.9	6.9	1.1	8.1
Norway	6.8	7.1	1.1	8.2
Canada	6.8	6.4	1.9	8.2
Switzerland	6.7	6.9	1.4	8.3
Australia	6.7	6.4	1.9	8.3
United States	6.6	6.4	2.0	8.4
Belgium	6.5	6.4	2.1	8.5
Hungary	6.4	5.7	2.9	8.6
OECD mean	6.4	6.4	2.2	8.6
Spain	6.3	6.5	2.3	8.7
Italy	6.2	5.7	3.1	8.8
Greece	6.1	6.1	2.8	8.9
United Kingdom	6.0	7.1	1.9	9.0
Austria	5.9	7.5	1.5	9.1
Netherlands	5.9	7.8	1.3	9.1
Ireland	5.7	7.8	1.5	9.3
Portugal	5.6	7.9	1.5	9.4
Czech Republic	5.2	7.3	2.5	9.8
Slovak Republic	5.2	5.8	4.0	9.8
Mexico	4.4	7.0	3.6	10.6
Turkey	3.2	5.9	5.9	11.8

Source: OECD (2004e, Table C4.1a).

Data for Figure 3.6

Expected years in education before age 30 of 15-year-olds (2002) and percentage of time in education expected to be combined with employment

	Total expected years in education	Percentage of time in education expected to be combined with employment
Switzerland	6.7	58
Denmark	8.1	57
Netherlands	5.9	53
Australia	6.7	53
Iceland	8.0	49
United Kingdom	6.0	42
Canada	6.8	41
United States	6.6	40
Germany	7.3	35
Norway	6.8	32
Finland	8.1	32
Austria	5.9	28
OECD mean	6.4	27
Sweden	7.5	22
Czech Republic	5.2	19
Mexico	4.4	17
Slovak Republic	5.2	17
France	8.0	15
Poland	7.9	14
Ireland	5.7	14
Portugal	5.6	11
Spain	6.2	10
Hungary	6.4	9
Turkey	3.2	9
Luxembourg	6.9	8
Belgium	6.5	7
Greece	6.1	5
Italy	6.2	4

Source: OECD (2004e, Table C4.1a).

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