
EXECUTIVE SUMMARY

Revisiting a theme that was first examined by the OECD some 30 years ago, Chapter 1 takes a fresh look at the place of alternatives to the traditional university within national tertiary education systems. Chapter 2 reviews a range of OECD work on the educational uses of ICT, draws some cautionary lessons, and suggests a number of conditions needed to get better returns from national investments in educational ICT. Chapter 3 discusses a topic that has hitherto not been systematically treated in the OECD's educational work: the important role that schools should play in laying the foundations for national lifelong learning frameworks. Finally, Chapter 4 breaks new ground by looking at some of the policy issues that need to be considered in using tax policy as an instrument to advance lifelong learning. The volume contains an Annex that summarises recent educational policy developments in OECD countries.

ALTERNATIVES TO UNIVERSITIES REVISITED

Universities no longer have a monopoly over the provision of tertiary education. In a number of countries, over one-third of enrolments at this level are now in other types of institution, and in a few it is the majority. Non-university institutions providing tertiary education vary hugely in character, ranging from vocational colleges providing a mix of upper secondary and short-cycle tertiary courses, to polytechnic institutions teaching four-year courses at degree level. Yet two common imperatives have influenced the growth of such institutions in OECD countries. The first is to create extra capacity to expand the overall supply of tertiary education. The second is to diversify what is on offer, in terms for example of the range of courses, their accessibility and the closeness of links with employers and the wider community.

The non-university institutions that provide tertiary education **vary substantially in their purposes**. Some, like the German *Fachhochschulen*, are narrowly focused on providing vocationally-oriented degrees. Others, such as community colleges in North America, teach for a wider range of levels and purposes. Three key dimensions of these purposes are:

- *The extent of vocational orientation.* In many countries, non-university institutions have developed from vocational or technical institutes, and they commonly offer fewer courses of general programmes, for example in the humanities, than universities. Yet some types of institution also have a mission to help improve access to universities, and in these cases, the vocational orientation is less pervasive. Such institutions include not just multi-purpose ones in North America and Australia, but also French *Instituts universitaires de technologie* (IUTs), which offer a standardised two-year qualification.
- *The levels of education provided.* In English-speaking countries, a number of institutions offer a range of courses from upper secondary through to degree-level courses. In a number of German-speaking and Nordic countries, on the other hand, non-university tertiary institutions normally teach only advanced courses, to the equivalent of a first university degree, with lower levels of education for adults being provided elsewhere.
- *Community orientation.* Many countries now have networks of non-university institutions that are more numerous than universities, and therefore more geographically dispersed. This both improves local access and in some cases serves communities in other ways; for example by conducting research that is oriented to local or regional economic development.

Non-university tertiary providers fit into an overall system of provision in a variety of ways. Sometimes tiers of institutions with different status are clearly distinguished, as in binary

or tripartite systems, but the picture can be more complex where the types of courses and qualifications in different categories of institution overlap. In some countries, notably Germany and Finland, non-university institutions have a key role in driving the overall expansion of tertiary provision. However, in expanding access they do not always stand alone, and in many countries the way in which they articulate with universities – including the conditions for transfer across institutions – is critical.

Another key element in their role in an expanding system is **their relatively lower funding per student in most countries**. In some countries this is little over half of the amount spent in universities. This can partly but not wholly be explained by programme differences, and raises questions about equity of provision. In some but not all countries this is partly compensated by the fact that students in non-university institutions are charged lower fees. There is a need to think more carefully about how to develop an equitable cost and charging structure in a complex, heterogeneous system of tertiary education. This also raises issues of quality, including the quality of teaching, which in principle ought to be the focus of non-research oriented institutions but in practice has received insufficient attention. Do non-university tertiary institutions offer value for money? This is hard to calculate with available data, but the evidence shows that returns are at best uneven, varying greatly across institutions and courses.

These alternatives to universities will certainly play a large role in tertiary provision in the future. Yet **their precise role within the system is still being resolved**, with a range of strategies open to them, whether becoming more like universities or emphasising their differences. Education authorities too will need to think carefully about what roles they wish these institutions to play in the tertiary education system.

GETTING RETURNS FROM INVESTING IN EDUCATIONAL ICT

Since the mid-1990s, **information and communication technologies (ICT) have been seen by many as an integral part of a strategy to improve teaching and learning**. This is more ambitious than earlier uses of computers, for example as supplementary teaching aids or to reduce teaching costs. But are policies to use ICT to transform education working? What investments have been made, what kinds of return have they brought and what barriers remain to the effective deployment of ICT?

All OECD countries have invested heavily in ICT in schools, although the presence of equipment still varies greatly across countries. In 2003, the number of 15-year-old students per computer in different countries ranged from 3 to 25. These differences cannot be explained simply by variations in wealth or overall education spending. However, most schools now have access to the Internet, and as the physical availability of technology becomes more pervasive, attention is increasingly turning to how ICT can be integrated into teaching and learning, in order to produce better learning outcomes.

In assessing the return on ICT investment, one needs to bear in mind that ICT can be used to improve information management within schools and to upgrade students' ICT skills as well as to transform teaching and learning. Depending on which of these goals is considered important, the style of investment in ICT will differ, so it is hard to measure the overall return.

One indication is the extent to which students use computers. In some countries at least one in three 15-year-olds uses computers in schools less than once a month, although in a few, usage has become routine: two out of three students in Denmark, Hungary and the United Kingdom use computers several times a week or daily. **The level of investment in equipment is not a good**

predictor of how much it will be used, although unsurprisingly the countries with particularly large numbers of students per computer have below-average usage. Most commonly, students use computers for email and browsing the Internet – both of which may have educational benefits. The number of students using specific educational software appears to be declining.

Does ICT improve learning outcomes? The evidence on this is imprecise, although **some research indicates that greater use of technology can raise performance**. It is encouraging that the schools with the greatest concentrations of low achievers are at least as well endowed with computers as the average school, and in some countries more so. This is in contrast to the distribution of computers in homes, which greatly favours more advantaged students: thus **schools can help counter the effects of the digital divide**. However, in schools where computers are scarce, low achievers have a lower than average tendency to access them.

Low achieving students are just as interested in using computers as other students, but on average less confident. Nevertheless, case study evidence indicates that **ICT can be used effectively to raise students' interest and confidence in learning**.

The barriers that prevent ICT producing desired results in schools can include lack of sufficient physical resources, regular technical support and maintenance. However, most fundamentally, the barriers include the ways in which classroom learning, schools and education systems are organised. **Principals highlight in particular four obstacles to reaching their ICT development goals**, each of which affects at least 60% of upper secondary school students across the OECD:

- Difficulty in integrating computers into classroom instruction.
- Problems in scheduling enough computer time.
- Teachers' lack of knowledge in using computers as a teaching tool.
- Teachers not having enough time to prepare lessons that use computers.

To overcome such barriers, teachers need to be well trained and prepared to use computers effectively, but this will not be enough if the organisation of schools and pedagogies remain unchanged. Case study evidence shows that, whether ICT is a trigger for change or a tool that enables it to take place, **there needs to be a close interaction between the use of computers and other aspects of school development**. Thus, just as is the case in business, the potential of ICT will only be realised if its introduction is combined effectively with other kinds of innovation.

HOW WELL DO SCHOOLS CONTRIBUTE TO LIFELONG LEARNING?

Lifelong learning is a concept that was originally applied to the continuation of learning beyond initial education. It **now signifies an approach to learning throughout life, including at school**. The OECD has defined a framework for lifelong learning that contains four elements. Each of these has implications for school education:

- Organised learning should be *systemic and inter-connected*. School education should therefore be linked to learning at other stages of life.
- The learner should be *central to the learning process*. This is a particularly challenging requirement in compulsory education.

- There should be an emphasis on *the motivation to learn* – another challenging demand for initial education, from which many become disaffected.
- Recognition should be given to the *multiple objectives of education*, rather than concentrating only on economic or instrumentalist goals.

How well school systems measure up to the ideals of lifelong learning can be analysed at three levels: the individual student, the school as an organisation and the school system.

At the level of the student, **school systems need to ensure** not only that students complete their schooling, but also **that they nurture the competences that students will need in adult life**. Insofar as completion of secondary school provides a foundation for lifelong learning, progress has been encouraging. In most OECD countries, the vast majority of young people now leave school with an upper secondary qualification. But what kinds of skills and dispositions have they acquired when they do so? The PISA survey has investigated the extent to which they have some of the key knowledge and skills that they will need in adult life. Its findings show that there is much still to be achieved. For example, in many countries at least one-third of students cannot perform reading tasks of moderate complexity, a vital skill needed in pursuing lifelong learning.

Yet **one must also look at a wider range of outcomes of education, not only cognitive abilities**. The OECD's Definition and Selection of Competences (DeSeCo) project has identified three types of competency needed in adult life: using a range of knowledge-related tools including language and technology; interacting effectively with other people; and exercising personal autonomy. While these competences cannot always be accurately measured, PISA has provided some indicators of whether school students are well prepared for lifelong learning in different ways. One measurable aspect of **autonomy** is the extent to which students control their own learning, and those who do are more likely to perform well at school. On the **motivational** side, the results are encouraging in showing that most 15-year-old students feel as though they "belong" at school, although a significant minority do not. A striking aspect of this evidence is that in some countries where students show high achievement, relatively large numbers feel unhappy at school, and this could have implications for the likelihood that they carry on learning later in life.

The second level at which lifelong learning principles apply is that of **schools, which need to become learning organisations, with students at the centre of learning**. This involves not just a willingness of teachers to learn and to change, but school-led innovation that changes learning cultures. This requires education to emulate conditions that have allowed innovation to succeed elsewhere. One of these is the application of research knowledge. A second is practitioner collaboration to find new ways of doing things, requiring better teacher networks and incentives for teachers to work together. A third is the creation of a "modular" innovation system that simultaneously permits local difference and joins local innovation to other parts of the system. A final driver of innovation is the effective use of information and communication technologies. In all of these respects, there are barriers to educational change, yet in each there is potential for progress.

Finally, at the system level, lifelong learning requires a connection between schooling and other aspects of education and training throughout people's lives. **A key issue here is whether the continued expansion of initial education is necessarily desirable**. While it provides a good foundation for lifelong learning, it also potentially "front loads" education even more than in the past. There is no single solution to this conundrum, but countries need to think carefully about the timing of when opportunities are available. Beyond initial upper secondary education, there may need to be more of a level playing field in supporting opportunities to study at different ages.

TAXATION AND LIFELONG LEARNING

The arrangements that allow people to continue learning throughout their lives remain poorly developed. In particular, factors which make it economically worthwhile to invest in learning, and which ensure that the financial means to do so are available, are often weak beyond initial schooling. **Potentially, tax policy is one way to strengthen these economic and financial incentives.** Yet whereas taxation has been used to influence other forms of investment, it has only rarely been used deliberately to influence lifelong learning. This does not mean that it has no influence. However this influence has in general been accidental rather than planned.

The case for using taxation, as well as other fiscal instruments, to influence learning investment is that the benefits of learning are shared between society, employers and individuals: therefore unsupported private coverage of the cost of learning will lead to a sub-optimal level of investment. Yet adult learning, unlike initial education, is at best unevenly supported by the state. How can the cost be more systematically shared? Recent OECD discussions about existing co-financing arrangements have found that tax policy is embedded, deliberately or otherwise, in many such schemes. The challenge identified in a recent OECD conference on the subject is to make such approaches more systemic across government, with the active collaboration of ministries of finance.

Tax systems have multiple objectives. The first of these is to raise money for public spending without unduly distorting the economy; promoting activities of social benefit can also be significant.

There are two main channels through which tax policy may influence investment in lifelong learning:

- First, *through the taxation of revenues* from the sale of learning services. If learning is regarded as an investment, an objective should be to ensure that these revenues are taxed in the same way as other investments to maintain neutrality. This also requires all providers to be taxed equally. One of the commonest ways in which this principle is breached is by taxing learning services provided by for-profit organisations, but not those provided by public and other non-profit-making bodies.
- Second, *through the tax treatment of expenditure* on investment in learning. There are many ways in which individual and corporate spending on learning can be exempted from tax. However it is hard to produce neutral support across the board. The common pattern is to favour learning for current employment over future employment (however this is being relaxed in some cases), to favour more measurable classroom activities over on-the-job learning, and to favour expenditure by firms over expenditure by individuals. Moreover, tax concessions are worth more for better-off individuals and firms – those whose marginal tax rates are relatively high.

The ultimate impact of tax incentives on learning can thus vary greatly, the more so because of the deadweight effect in some cases. The net result of this rather arbitrary and inconsistent application of tax policy to lifelong learning is to create mixed and inconsistent signals. Tax authorities in many countries remain reluctant to address the issue more systematically. There is now a need for education and finance ministries to take stock of the tax treatment of learning-related expenditure and revenues, evaluate its impact on investment in human capital, and consider whether policy needs to be adjusted.

The above points can be illustrated by reviewing current tax policy and recent developments in three countries. **In Austria,** there is widespread exemption of learning providers from VAT and many tax concessions exist for individuals and firms for certain categories of training expenditure. There has recently been a widening of eligible forms of learning for which individuals may claim income

tax concessions. **In Finland**, revenue-side exemptions are limited to certain specified providers. The aim on the expenditure side is to favour all activities that contribute to people's future earning capacity. However this principle is hard to administer consistently. A commission established by the education authorities has clarified policy on expenditure by employers. **In the Netherlands**, the authorities have been particularly active in using tax policy to further the government's strong support for investment in human capital. Over the past decade they have introduced deductions to increase incentives for employers to invest in learning, to encourage training for particular target groups, and to encourage individuals to save for learning-related purposes. However, since 2002 fiscal pressures, doubts about the efficacy of some measures, and changing priorities have forced the government to cancel some of these initiatives.