

CHAPTER 1

THE EMERGING POLICY AGENDA

by
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INTRODUCTION: UNDERSTANDING THE DIGITAL DIVIDE

As digital technologies become firmly embedded in everyday affairs, they enable most people to lead more productive and rewarding lives. They can help all societies to solve long standing economic and social problems, but they also bring new challenges. Those denied access to ICT skills and knowledge become less-and-less capable of participating in an economy and a society that are increasingly technology-dependent. The resulting *digital divide* represents a major challenge to policy-makers at all levels. What should governments do? What *can* governments do, to ensure that the new technologies do not consign some people to the margins of society, unable to contribute to and benefit from the wealth of new opportunities that the digitally rich enjoy?

The examples in this report confirm that, used wisely, the technologies themselves can be a powerful influence in the lifelong learning context, in helping to overcome the inequalities in society. Those alluded to briefly in this chapter are to be found more fully developed later. They show, however, a clear risk that

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without policy intervention, ICT will intensify societal divisions rather than close them. Easy access to ICT enables people to become richer, and therefore more able to afford still newer technology; it is, moreover, the already well educated who – disproportionately – take up lifelong learning opportunities and who, in general, get better services. In short, the educated *information rich* become richer and the less educated *information poor* become poorer.

Just as the industrial revolution made some level of literacy and numeracy a requirement for all, so the electronic revolution within contemporary society makes *digital literacy* essential. People who lack access to relevant hardware and software, and a basic understanding of ICT, will also lack the confidence that they can continue to learn as the technologies evolve; they will remain *digitally illiterate*. As the technologies become ever more embedded in everyday life – and increasingly taken for granted by those with relevant equipment, skills and understanding – so the exclusion of those without this new *literacy* deepens. Such exclusion is a major policy concern in all countries. It poses a dynamic problem, in that the very concept of ICT literacy is itself constantly changing as new technologies emerge.

There are many technologies undergoing rapid and unpredictable change, constantly offering increased capacity and new techniques. In five years, for example, the World Wide Web has moved from being an eccentric interest of enthusiasts to become a major tool of economic and cultural activity. The linking of mobile communications technology and computing is likely to bring access to communities without reliable electricity or telephone services (or with none at all), while digital television will soon deliver Internet access to anyone with a television set. Such volatility makes investment decisions risky for governments, accustomed as they are to more stable environments.

While obtaining physical access to hardware and software is a problem for many, the access is not an end in itself. It is useful only in so far as it helps people to address the challenges which face them as individuals, citizens and employees. The technology is of no benefit without the skills and understanding to make use of it, to achieve purposes relevant to the individual's circumstances and needs. There is a complex and dynamic relationship between acquiring the skills and putting the technology to use, since ICT offers the opportunity to do old tasks better and to undertake tasks never before contemplated.

All is not, however, inherently benign. The unregulated market is likely to develop ICT to address the needs of the better educated, wealthier and more technology-literate individuals, communities and countries, since these are the

people who will want and be prepared to pay for the development of new and more sophisticated products and services. Policy-makers are thus faced with a double challenge: how to ensure that all citizens have equitable access to the equipment and the skills needed to participate, and how to ensure continuous updating as new technologies and applications emerge. This report illustrates the high commitments and expectations across many countries – along with the serious levels of concern – as access to digital technologies is extended or contemplated. OECD governments cannot ignore the challenge of the digital divide.

TECHNOLOGY AND EXCLUSION

There is a growing agreement across OECD countries that, even leaving aside the compelling moral arguments, modern economies cannot afford a significant uneducated and excluded minority. As the report recounts,³ exclusion reduces the capacity of individuals to contribute to – and benefit from – society and the economy. It increases the costs which the unwilling majority have to bear, while sowing the seeds of civil and political instability.

Exclusion is a complex phenomenon involving many causes, of which limited education is one, and in contemporary society lack of access to current technologies another. The various factors interact with each other at local, national and global levels, in changing and sometimes unpredictable ways. Whole communities and countries may be excluded on account of historical, cultural and economic forces; the gulf between technology-rich and technology-poor countries and continents may be as stark as that between local communities and individuals. To some extent, the digital divide is simply a deepening of existing forms of exclusion. Those who are unemployed, poor, housebound, disabled, less educated, members of cultural and ethnic minorities – and in many countries, women – are all likely to have restricted access to digital technologies, just as they are less likely to have access to other services and goods. The same is true for those whose mobility is restricted by domestic circumstances or who are in prison, and for those living in communities which are geographically isolated, or dependent on declining industries.

Examples are documented in this report of ICT helping to overcome some forms of exclusion. The Mexican Telesecundaria programme⁴ shows that ICT

3. See, for instance, Chapter 9.

4. See Chapter 2 for the examples in the next two paragraphs.

can provide ways of delivering services where staff are not available or are too expensive. It can make it easier for people in isolated locations – whether in a remote community in Northern Canada or housebound in a high rise city apartment – to participate in social and economic activity. Some of the benefits are surprising. The technologies can enable whole countries to leap stages of economic development which took centuries in Europe. Thailand's *Project Lighthouse* seeks to make the transition directly from a pre-industrial to a post-industrial economy in a few years, while the absence of a legacy of old telecommunications systems in Botswana has enabled them *ab initio* to install a leading-edge infrastructure.

One of the great strengths of the technologies lies in their ability to serve many purposes. The computer used as a workstation in working hours can be a learning station outside. The laptop on which a community group keeps its accounts can also be loaned to members to undertake their own learning activities. The LINCOS project demonstrates the benefits and potential savings which come from providing technology-based access to education, medicine and public information for remote communities in Costa Rica.

However, not all problems of exclusion are susceptible to technological solution: the costs may be daunting, especially given the need for continuing updating, and the economies overstated. Furthermore, the human issues are complex. The technology may be seductive, diverting resources from more effective but less glamorous issues of developing human skills. English is the dominant language of the Internet, arguably therefore imposing a whole range of values on smaller cultures and linguistic diversity. Even so, the example of Maori education in New Zealand⁵ demonstrates that digital technologies can support minority cultures and languages, and benefit can come as language communities across the globe are linked electronically. More subtle effects also arise. Women are less likely than men to be users of both the digital technologies and lifelong learning, but there are exceptions. Furthermore, there is concern in some developed countries about the exclusion of young working class men, faced with declining traditional industries, who see desk work – and therefore work with computers – as not appropriate for men.

TECHNOLOGIES AND LIFELONG LEARNING

Digital technologies are both a subject – something to learn about – and a tool to assist learning in general. They also change what can be known and

5. See Chapter 7.

learned, by making new kinds and quantities of knowledge available and open to debate. Applied in the workplace and the political arena, they transform economic, social and political processes, creating still further learning needs as they do so. They can also transform how, where and when learning takes place. The rise of digital technologies is therefore one of the most powerful determinants in lifelong learning, since communities and individuals who lack confidence in handling these new tools will be at an increasing disadvantage in a global market and society.

This is to present governments with three distinct (and expensive) policy issues: how to ensure that young people are prepared for this world; how to ensure that adults who have already completed their formal education are enabled to participate in it; and how to ensure that everyone is able to continue to update skills and understanding, as the technologies and the social and economic environments change. The concept of lifelong learning has entered the conventional rhetoric of the policy community in most OECD countries, but remains much misunderstood. National policy-makers are accustomed to thinking of education as pertaining to children and young adults, largely in public sector institutions. Such formal education is a central part of lifelong learning, but much learning happens outside the framework of public sector institutions, through the involvement of parents, employers, commercial agencies and voluntary organisations, often with different structures, principles and values.

Lifelong learning calls for a paradigm shift, asking what is most effectively learned when, and how the resources of individuals, firms, communities and the state are best deployed across a life-span. This implies not only a major expansion in the volume of learning activity but a new relationship between learner and provider. Where it is clearly proper for the state to determine the framework of formal schooling for its citizens – though with due consultation – in later life the agenda is set by individuals, employers and communities, reflecting their own priorities and ambitions. National policies must come to terms with a new and unfamiliar political dynamic, in which governments facilitate and encourage, with limited powers of direction.

Formal schooling lays the foundations for later learning and for participation in society and the economy. Governments are working in a volatile environment, to define what all school leavers ought to be able to understand and do in relation to digital technologies, and to find the necessary resources.⁶ They are also working

6. See Chapter 8.

to put in place infrastructures to underpin development, such as digital networks and portals like Sweden's Schoolnet and the UK's National Grid for Learning. Digital technologies themselves are making a growing contribution to this phase of education, enriching and sometimes replacing conventional processes, providing cheap access to a diversity of information, allowing interactivity and individualised learning experiences on a scale never previously possible.

Formal initial education is a vital element of the policy agenda. Although it represents less than a quarter of the average life-span, it is a period largely devoted to learning. Much lifelong learning is not bounded by institutional forms, and learners cannot be expected to define themselves conveniently as *higher education students* or *work-based learners*. They are as likely to turn to a book, a commercial distance-learning product, a workmate or neighbour, as to a public sector institution. The Swedish report stresses the importance of voluntary groups and trades unions as providers of learning. Recent research in the UK (Coffield, 1998), has confirmed that most of the important learning for industrial workers happens in and around the workplace, not on training courses or under formal supervision. For such lifelong learning, notions of *teaching* and *classroom* do not apply. What matters is how the workplace and the community are organised to make learning a natural and inevitable part of everyday life, not something done in a special place.

It would be a mistake, however, to see formal and informal learning as two entirely separate worlds. A lifelong approach implies examining them together, and there can be powerful synergies between them, across the generations. For adults with literacy problems, one of the powerful motivators to return to learning is the need to keep up with their own children as they begin schooling. An example is the New Zealand Maori education project where young people were only allowed to attend ICT classes if they brought an adult learner with them.⁷ For those already motivated to learn, digital technologies offer learning opportunities previously inaccessible. The technologies can help to articulate previously unexpressed needs, and provide services tailored specifically to the individual. They may offer more acceptable modes of learning, for instance to those who prefer the privacy of learning with a computer to the public stresses of the classroom. On the other hand, they can support community-based learning, which becomes more sustainable through the support that individuals bring to each other.

7. Illustrations for the remaining paragraphs in this section are drawn from Chapters 6-8.

Digital technologies also change the role of the teacher and our understanding of learning processes. They give learners direct access to vast bodies of knowledge, as well as tools to analyse and search for material. Well used, they enable learners to engage more directly with the subject, through interactive systems, virtual experiments and networking with other learners and practitioners. The skills of finding and interpreting information are seen to be more important than the skills of retention and recording, which is particularly helpful for adults who come to learning in order to solve particular problems in their lives, work or community. For them, desirable learning is based not on a teacher's notion of a coherent body of knowledge but on fitness for purpose.

However, this radical shift in the role of the teacher, described as the move from “the sage on the stage” to “the guide on the side”, can be very threatening to teachers educated in a very different tradition. Not all governments have recognised the urgency and scale of the issue, though the report offers some illustrative strategies to tackle it. Sweden and Finland have a commitment to the formal retraining of teachers (itself an aspect of lifelong learning), while the UK's National Grid for Learning seeks to provide underpinning support for teachers. The *Captured Wisdom* project is a radical development, in which teachers are linked electronically to observe each others' work, creating a virtual community of practice to share ideas and develop confidence in new and unfamiliar roles.

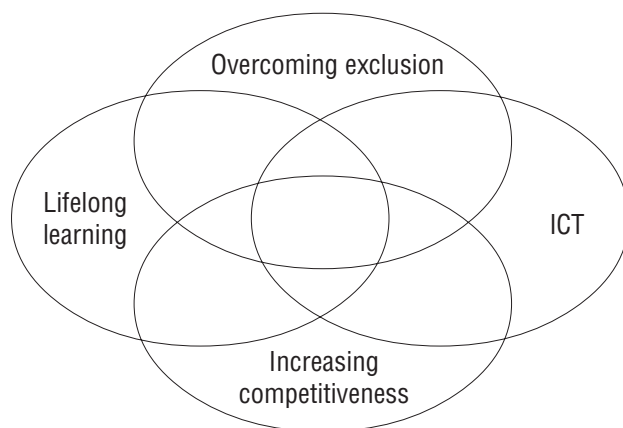
A lifelong, technology-supported model of education also challenges traditional forms of educational institution, as we move from an emphasis on buildings, students, and teachers and textbooks as knowledge providers, to a knowledge infrastructure, learners, tutor/facilitators and multimedia materials. Lifelong learning implies greater diversity of need and learning approaches, which digital technologies allow – software can build personal profiles of each user, to map progress, to tailor approaches and to offer challenges matched to individual needs. Furthermore, the technologies enable the growth of global online providers, making resources available to learners at any time and location, and leaping the national boundaries within which education policy and management has traditionally been conducted. A key policy issue here is how far the traditional institutional frameworks can adapt to this new world, and how far we must develop new kinds of institution and structure to address them.

Finally, a lifelong perspective raises questions about the balance between individual and communal learning. Although formal schooling is usually conducted in groups, it normally assesses and values individual prowess. Much lifelong learning, however, has a collective focus. In a working or community

context, the priority is what the team, workgroup or firm can achieve, using the talents of all its members. The technologies make some such learning easier – software can allow a group of people to contribute to the same task, to discuss problems, and to offer and receive advice. In the report a range of approaches to communal learning is identified, including community/government partnerships in Mexico. In the UK's laptop initiative, community groups are invited by government to present proposals for a community need which they could meet with a laptop computer. Those whose bids are successful are provided with a machine, and with software and networked support enabling the learning of digital skills to be embedded in the activity of the group, rather than added on as a tutorial course.

POLICY INTER-RELATIONSHIPS

The relationships between ICT and lifelong learning, on one hand, and the broad common policy objectives of all OECD governments – to improve economic competitiveness and reduce social exclusion – are complex. The figure below illustrates the complexity. There are policy initiatives which support both competitiveness and inclusion, and there are ways of using digital technologies which support lifelong learning. The focus of most contributors to this report lies in the centre of the diagram, where lifelong learning and digital technologies come together to support both policy objectives. If we are to overcome the digital divide, it is important to increase the size of this area.



For policy-makers, the key questions are always: what *should* be done and what *can* be done? For this report, both questions are critical. The large-scale advent of ICT changes the political processes through which policy is formed, and the extent to which government can control it. Issues arise at all levels. The divide between the information rich and information poor exists between individuals in the same neighbourhood, as well as between nations and continents. Whether one argues from natural justice, political stability or economic efficiency, the digital divide has to be addressed. Hence the call within this volume for some form of global solidarity in the development of access to ICT and to lifelong learning.

THE POLICY AGENDA

There are at least eight key areas for government to consider, in relation to the changing world of ICT, in order that individuals and communities are not excluded from participation in society and the economy. For some countries these areas imply roles unique to government, but all governments will want to ensure that they receive due attention from the appropriate quarter. Central within them all is the need to “level the playing field” for those who – currently or potentially – are digitally and educationally excluded. Action to do this must be without stigma, which would itself lead to further exclusion.

The first objective is to **secure access for all to hardware and software**, since one of the major causes of the digital divide is the gulf between technology-rich and technology-poor homes, schools, communities and nations. The UK is setting up a national network of ICT-equipped learning centres, to ensure that those who cannot afford to buy their own computers, or cannot afford the telephone costs of Internet access, can nevertheless gain familiarity and expertise. Sweden and Finland are extending access to school premises out of normal hours. Several countries have schemes to recycle for education computers from commercial firms, that have been discarded in favour of more advanced equipment. In some cases such schemes extend to refurbishing the computers for use in the third world. A major policy concern to be addressed is the role of developed countries – the *haves* – in helping to bridge the digital divide for the rest of the world, the *have-nots*.

Provision of computer hardware and software is not enough. Government must invest in the **changed roles of teachers and learners**, to match the different priorities emerging in statutory education with the advent of ICT. Teachers need

to be equipped to become confident and discriminating users of ICT, including familiarity with the World Wide Web, which implies the development and refinement of both technical and pedagogic skills. They need ongoing opportunities for professional development and exchange, becoming role models to their students as lifelong learners. The curriculum must adapt to value the development of skills and the ability to interact more than the retention of facts, a significant change which remains to be reflected in assessment and certification measures. Students leaving school must be confident and creative users of ICT and the Web.

Government has a major role in **promoting lifelong learning**, ensuring that all, especially those in danger of exclusion, have the chance to develop ICT skills and understanding. This involves creating positive images of learning, including learning with and about digital technologies, and encouraging people to understand and value the learning which they already undertake outside formal contexts. Most of those who resist learning do not see its relevance to their needs, and see no role models with whom to identify. Promotion is a complex and expensive issue, requiring different strategies for different groups, but is surely no less important than advertising the artefacts of the consumer society? The media have a role to play here.

Another role for government is in **quality assurance**. In a much more open market for education and training, more diverse opportunities will be offered by a greater range of providers. Individuals and organisations need information about the quality and benefits of what is available. In most countries, the state has traditionally controlled quality in education and training, but some of the methods used for this, such as regulating admission to courses, national curricula and qualification systems, may need to be reconsidered. New approaches are needed to understanding quality, new balances between process and content, competence and credentials. Governments may need to focus more on publishing information concerning the intellectual coherence and appropriateness of individual programmes and institutions.

The statutory period of schooling and the lifelong learning agenda are not simply about the vocational-skill needs of the global economy. New ways are opened up by ICT for **enhanced citizenship**, whereby people can participate in the governance of their communities and societies, through access to new knowledge, through the creation of debating forums which cross the boundaries of geography, time and social status. Governments are only beginning to understand that technological literacy can lead to greater political literacy and participation, a possibility which warrants active promotion.

For government, a sixth role is to develop “**brokering**” **services and agencies**. For instance, the biggest UK problem in the post-school education market is neither a shortage of suppliers (there are many) nor of demand (people respond when appropriate opportunities are made available). The real problem is the absence of intermediaries to help individuals to find their way through the maze of opportunities and providers, in order to match opportunity to need. Moreover, a broker is needed to identify unmet needs and provide feedback to the providers. The UK’s *Learndirect* project has been designed with such a role in mind.

Government can **support, encourage and direct research**. We know surprisingly little about the impact of ICT on learning.⁸ We know that the technologies offer great opportunities, and there is much visionary rhetoric. However, what is best learned through ICT and by whom? What are the optimum technologies for learning? We need new and more flexible approaches to research, since the rate of change means that our traditional approaches – with careful evaluation of pilot projects before wider adoption – are no longer feasible.

Finally, this report suggests that ICT and lifelong learning together imply a fundamental **change in the role of the policy-maker in education**. Change is too fast and unpredictable for conventional notions of planning, and the scale of educational need across the life-span for all citizens is too great for the public sector alone to meet. Governments need to act in partnership, helping to define objectives and develop strategies, in collaboration with other providers and with learners and potential learners. They will want to harness the resources of the private and voluntary sectors, of employers and trades unions, of communities and individuals.

8. The CERI project *ICT and the Quality of Learning* is itself addressing this issue.