

Trends affecting Europe and what they mean for literacy

1 Employment, labour markets and skills

Changing nature and demands of employment

In the mid-1970s, the British sociologist Paul Willis wrote a seminal book entitled *Learning to Labour*.¹ Asking himself “Why does the working class let the middle class take all the good jobs?”, he spent two years following the lives of a group of educationally disaffected working class schoolboys, charting their final 18 months of school and the first six months of life after they had left. Some of these boys, known by themselves and others as “the lads”, struggled with literacy; all of them left school without qualifications. Almost all of them soon ended up in relatively low-paid, manual jobs.

The “lads” Willis followed, and whose lives he detailed, were, as he saw it, consigning themselves to lives of low pay and hard work, while letting their more advantaged peers take the best jobs. “The difficult thing to explain about how middle class kids get middle class jobs is why others let them,” he mused². While the educationally advantaged children were learning in school how to succeed or “get ahead”, disadvantaged pupils were, in the words of Willis' title, “learning to labour”. Willis' tale is one of opportunities limited by a lack of basic skills, the qualifications that are dependent on those skills, and a lack of understanding of the importance of these. But Willis did not at the time realise how lucky these seemingly unfortunate lads were in comparison to the generations to come.

As documented in his study, Willis' lads walked out of school with poor basic skills and/or no qualifications, but many walked onto jobs on the factory floor literally the very next day, albeit into physically challenging, low-paid jobs. Willis saw this as a defeat, in comparison to the opportunities pursued by the lads' peers. But 30 years on, such a defeat might be seen as a comparative victory. For the low-skilled in Europe, “learning to labour” in manual occupations is less and less of an option. In the modern European economy, **good literacy is an increasingly necessary prerequisite for employment**, and those without such skills are falling ever further behind as the world of work changes.

¹ Willis, Paul (1977) *Learning to Labour: How Working Class Kids Get Working Class Jobs*. Farnborough: Saxon House.

² *Ibid*, p. 1

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A key to those changes is the decline in the availability of decently paid manufacturing and industrial occupations – the sort that even in the 1970s were disappearing, but which young men still had widespread access to. As the percentage of knowledge-dependent occupations grows, the diminished prospects for individuals with poor literacy will grow worse. European skills forecasts show that while in 1996 31% of the workforce required only low skills, by 2020 this figure will fall to 18%³. Bynner⁴ has used birth cohort studies from 1958 and 1970 to show the increasing importance of good literacy and numeracy skills in shaping young people's future employment outcomes – and the diminishing employment prospects for those who lack them. Levy (2010) has shown **how computers change employment opportunities**. Just like farming before it, industrial employment declined because technology replaced many routine, manual tasks. Now **computers have the capacity to replace many routine cognitive tasks**, such as evaluating mortgage applications and even scanning documents for clues in legal cases⁵. This implies a **"hollowing out" of the employment structure**, with fewer routine "white collar" jobs available and a larger gap between knowledge-based occupations requiring excellent literacy skills and non-routine manual jobs in the service sector. Indeed, occupations requiring routine cognitive skills that can be reduced to computer-friendly rules are seeing the steepest declines in labour market demand⁶.

Even **manual occupations require better literacy**. Today's bus drivers and building caretakers, for example, are required to write incident reports⁷. An inability to read well and write clearly make these and similar occupations off-limits. And as the manufacturing sector contracts, the retail and social care sectors expand – even low-paid, insecure jobs in these sectors require strong written and verbal communication skills. Such jobs may increasingly require what have called **21st-century literacy skills**: the ability not just to read and write text, but to use "higher order" problem-solving skills – for example, in order to search for information online or in digital documentation, and to choose from among a range of potentially viable options.

In modern workplaces, literacy almost inherently implies **digital literacy**: to write a report, workers need to be able to use computers and adapt to new digital tools. For individuals who struggle with literacy, this presents a double divide⁸. Most adults develop their digital skills on the job – but if poor literacy reduces employment opportunities, it therefore also

³ CEDEFOP, 2010 'Skills supply and demand in Europe. Medium-term forecast up to 2020'. Available online: http://www.cedefop.europa.eu/EN/Files/3052_en.pdf

⁴ Bynner, John (2001) 'Literacy, Numeracy and Employability'. Online Discussion Paper. Available Online: www.staff.vu.ed.au/alnarc/onlineforum/AL_pap_bynner.htm.

⁵ Ford, M. (2009). *The Lights in the Tunnel: Automation, Accelerating Technology and the Economy of the Future*: Createspace.

⁶ Levy, Frank (2010) How technology changes demands for human skills. OECD education working paper no. 45. Paris: OECD.

⁷ Wolf, Alison (2005) *Basic Skills in the Workplace: Opening Doors to Learning*. London: Chartered Institute of Personnel Development.

⁸ Bynner, J., Reder, S., Parsons, S., & Strawn, C. (2008). *The digital divide: Computer use, basic skills and employment: A Comparative Study in Portland, USA and London, England: Research Summary*.

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reduces the opportunities to develop the digital skills required by employers, creating a vicious circle.

What this means for literacy

What these developments imply is a "hollowing out" of the employment structure, with fewer routine "white collar" jobs available and a larger gap between knowledge-based occupations and manual jobs in the service sector. The employment ladder is growing more hourglass-shaped, and the rungs of that ladder are growing further apart. This means that even though good literacy is now a basic requirement for many "unskilled" occupations, it is no longer sufficient for most knowledge-driven occupations, which require excellent literacy skills.

This is likely to put extreme **pressure on children to develop strong literacy skills** early; these skills will be a prerequisite for educational success and access to knowledge work. Young people who struggle with literacy may find themselves permanently unemployable, while even those with good literacy skills may find that many jobs which would have previously been available to them have been replaced by computers. Educational anxieties previously seen as the preserve of the working class may spread up the socio-economic spectrum. These anxieties may be particularly strong for males, as the "**feminification**" of **workforce** continues: there will be continued growth in traditionally "female" occupations in the retail and social care sectors, with these jobs requiring very good literacy and communication skills.

Just as the possibility of having "one job for life" has declined, so too has the possibility of developing only one skillset over the course of one's working life. There is an increased need for on-the-job training and **retraining** in order to move into new career paths – including into careers do not yet exist and have not yet been foreseen. This requires solid foundations both in basic skills, including literacy, but also transversal competencies. There is a trend towards creeping **credentialism**, as employers use degrees and higher degrees as signifiers of skills and adaptability. Employers consistently say that they are willing to provide job-specific training for young or new employees, but do not want to provide literacy training, which is seen as the responsibility of the education system. Employees are expected to bring key transferable skills with them, with literacy and communication being at the heart of these.

There are also expected to regularly revise their skills and even reinvent themselves. As traditional occupational pathways disappear, individuals are expected to "**write their own biographies**", creating their own occupational paths in life and developing the skills required to respond to new demands. Lifelong learning will play a central role in this process, as adults strive to improve skills such as literacy and digital literacy. This will happen in adult education institutions, but also in the workplace. Despite a general reluctance to provide

basic skills training to employees, some employers do offer **workplace literacy programmes**, often subsidised by Member State governments who realise that improving workforce skills cannot wait for the next generation of workers. In the United Kingdom, basic skills programmes can be delivered in the work place by workplace learning providers or directly by employers. Certain basic skills courses can be fully-funded by government⁹. In Norway, in 2006 the Norwegian government established the Programme for Basic Skills in Working Life (Program for basiskompetanse i arbeidslivet – BKA) for adults to improve basic skills in reading, writing, arithmetic and ICT. This is organised in connection to work, employers may apply for support to start training in basic skills for their employees or jobseekers. The social partners and others co-operate with the Ministry of Education and Research in the programme¹⁰.

2 Demographics

Ageing populations: more older people, fewer school-aged children

The second half of the 20th century was a triumph for ageing. Europeans live longer, healthier lives, and are less likely to spend their old age in poverty than they were 50 years ago¹¹. This huge policy success – and we should not forget that ageing is a success rather than a burden – does present significant challenges to national economies, as has been widely and often breathlessly discussed. At the same time as lifespan increases, fertility is decreasing. Briefly, here are the facts.

The over-65s, who account for approximately 85 million of Europe's 495 million citizens, already outnumber children under 15, but only barely.¹² Of today's old, more than one-quarter are over the age of 80 (**the "oldest old"**). By 2060 the old will outnumber children by two to one: **for every 10 children under the age of 15, there will be 20 people over 65**. Eight of those 20 will be aged 80+.

The **working age population**, which has traditionally been defined as those aged between 15 and 64, **has already begun to decline**. By 2060 it is expected to drop by 15%. As a result

⁹ Eurydice study Adults in Formal Education: Policies and Practice in Europe; pp 21, 27 and 34; Available online: http://eacea.ec.europa.eu/education/eurydice/index_en.php

¹⁰ Eurydice, Eurybase database:

http://eacea.ec.europa.eu/education/eurydice/documents/eurybase/eurybase_full_reports/NO_EN.pdf

¹¹ Esping-Andersen, Gosta (ed.) (2002) *Why We Need a New Welfare State* (with D. Gallie, A. Hemerijck and J. Myles). Oxford.

¹² European Commission (2009) Dealing with the impact of an ageing population in the EU (2009 Ageing Report). Communication from the Commission. COM(2009) 180. 29 April 2009.

of these trends, the **old age dependency ratio** (calculated as the ratio of people aged 65+ to those aged 15-64) is projected to more than double by 2060: the EU will go from having four working age persons for each person aged 65+ to ratio of less than two to one.

This means fewer workers per retiree. At the same time, **costs associated with old age will rise** significantly. In 2007, pensions in the EU27 accounted for 10.2% of GDP¹³. This is projected to rise to 12.6% by 2060. Healthcare expenditure is expected to increase from 6.7% of GDP to 8.2%. And government expenditure on long-term-care is projected to nearly double, from 1.2% of GDP to 2.3%. Over the same period, education expenditures are projected to decrease from 4.3% of the EU 27 GDP to 4% in 2035 and 3.8% and 2060.

What this means for literacy

Fewer young children:

The number of children in the EU is projected to begin a gradual decline from 2020 onwards¹⁴. As the number of older Europeans continues to grow, schoolchildren will account for a steadily shrinking percentage of the overall population. This has numerous implications for education in general and literacy in particular. As spending on health, pensions and long-term-care rise, **less money may be available for education**. This may mean a relatively steady rate of per-pupil funding as the number of school-age children declines.

However, it could mean less funding for primary and secondary education if politicians are encouraged by older voters to focus on issues more relevant to them. Smaller education budgets may lead to **fewer specialty services**, which could have serious negative impacts on literacy education, particularly when **high levels of migration** require additional support. Rural areas could be particularly hard hit, as they are ageing more rapidly than cities¹⁵. Lower numbers of schoolchildren and increased budgetary demands in such areas could lead to closed and/or consolidated schools.

As the population ages, so too will the teaching workforce. Already, nearly half of all primary and secondary school teachers in Germany are 50 or older¹⁶. Other Member States with relatively old teaching workforces include Denmark, Sweden, Italy, France, the Netherlands and the United Kingdom. On the whole, research on teacher age does not generally find important positive or negative effects on learning. However, older, more experienced teachers earn more, placing additional pressure on education budgets.

¹³ European Commission (2009) 2009 Ageing report: economic and budgetary projections for the EU 27 Member States (2008-2060). Luxembourg: European Communities.

¹⁴ *ibid.*

¹⁵ Eurostat (2010) "Ageing in the European Union: where exactly?" *Statistics in focus*. 26/2010.

¹⁶ Schlotter, M., Schwerdt, G., & Wößmann, L. (2008). The Future of European Education and Training Systems: Key Challenges and Their Implications. Analytical Report for the European Commission, EENEE.

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Pedagogically, there may also be questions about the digitalisation of education. Will the pace of **digital change** be faster than teacher training can keep up with, particularly with an ageing teaching workforce? Alternately, will educators be resistant to change – and if so, will this be to the detriment or benefit of literacy?

More older people, and more of them who need and/or want to work longer:

Across Europe there are **huge variations in participation in learning by older people**. In general, Eastern European countries have lower rates, while Nordic countries have the highest. Finland, Sweden and Denmark have particularly impressive rates of participation by 55-65-year-olds in both lifelong learning and employment¹⁷.

Though lifelong learning has received significant policy attention in Europe, an "**initial education paradigm**" still prevails¹⁸. European education and training systems are based on the idea that learning proceeds employment – not that they iteratively reinforce each other. While education has traditionally been seen as preparing people for something they have not yet encountered¹⁹, the notion of **retraining, possibly several times over the course of a working life**, must become more central to lifelong learning. Many older people will need to retrain if they are to stay employed – and increasingly, they will both want and need to remain in work.

Older people will be under **significant pressure not just to retain their skills, but to develop new ones**. For many, this will require increased participation in education and training, both to keep up with new, ICT-driven skills needs and to retrain for new occupations. This prospect presents challenges at both individual and systemic levels. Little is known about **how best to recruit and teach older people**. Thus far, most efforts at improving literacy skills have focused on younger adults, even though evidence from adult literacy initiatives suggests that the learning divide is greater amongst older people. For example, the UK's Skills for Life literacy and numeracy strategy has had less success recruiting and engaging older people – in part because older people tend to be less interested in learning new skills²⁰. Finland's NOSTE programme found that while many older workers were interested in learning, they were not interested in training. In the future, such distinctions may not be an option for older people seeking to save for their pensions or long-term-care.

Older people are also **less likely to be offered training**, as governments and employers view the potential return on investment as limited. Adults with poor literacy skills are both less likely than those with better skills to seek or to be offered education and training. This has the potential to exacerbate a digital divide, particularly given that, at present, older people

¹⁷ Cedefop, 2006 Cedefop Agora: promoting lifelong learning for older workers. Full report.

¹⁸ McNair, Stephen (2009) Demography and lifelong learning. IFLL thematic paper 1. Leicester: NIACE.

¹⁹ Ibid.

²⁰ Chilvers, D. (2008). Segmentation of adults by attitudes towards learning and barriers to learning. London: DIUS.

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in Europe tend to have poorer literacy skills than younger people. (This is largely a cohort effect rather than an effect of age itself: today's older people have less formal education, on average, than younger people do²¹. However, adults lacking computer skills tend to be very keen to develop them, and there is evidence that participation in adult education and training can be raised if literacy education helps adults to improve their basic skills²².

All of this places a strong emphasis on literacy for employment. For many older people with literacy problems, this emphasis may be inappropriate – older men and women seeking to improve poor literacy skills may be put off by overt emphases on employment, particularly if their aim is to improve their literacy to benefit other areas of life, such as reading to grandchildren.

Migration

The number of third country migrants living in Europe is currently estimated at 64 million, accounting for **9% of the population**²³. Both inward migration and internal mobility are expected to increase significantly in the next decades in the EU. By 2060, a third of the EU population will have at least one foreign-born parent²⁴. Moreover, European population will not only be increasingly diverse, but also increasingly mobile. As mobility becomes the norm of successful education or career paths, the forms of cross-border mobility will increase considerably. Europe's ageing population requires relatively high levels of inward migration, and European economies and communities are benefiting from it. However, social cohesion is a major and growing political issue, particularly in times of economic crisis when resources and employment are scarcer.

The EU needs both migration and social cohesion. Adult migrants need literacy skills, both for employment and integration. Their children need literacy skills to succeed academically. **At least 10% of 15-year-old schoolchildren in the EU15 were born abroad or had both parents born abroad**²⁵. These figures are even higher for **fourth graders: 15%**²⁶. In many Member States, large numbers of immigrants are a sudden and significant phenomenon – for example, in Ireland, Italy and Spain the percentage of foreign-born pupils more than tripled in the last decade²⁷. Importantly for schools and school systems, **migrants tend to**

²¹ McNair, Stephen (2009) Demography and lifelong learning. IFLL thematic paper 1. Leicester: NIACE.

²² Schlotter, M., Schwerdt, G., & Wößmann, L. (2008). The Future of European Education and Training Systems: Key Challenges and Their Implications. Analytical Report for the European Commission, EENEE.

²³ European Commission (2008) Migration and mobility: challenges and opportunities for EU education systems. Green paper. COM(2008) 423. 3 July 2008.

²⁴ European Commission (2011) Demography report 2010

²⁵ OECD (2010) PISA 2009 results: What students know and can do – student performance in reading, mathematics and science (volume 1). Paris: OECD.

²⁶ Mullis, I.V.S., Martin, M.O., Kennedy, A.M., & Foy P. (2007) *PIRLS 2006 International Report: IEA's Progress in International Reading Literacy Study in Primary School on 40 countries*. Chestnut Hill, MA: Boston College.

²⁷ European Commission (2008) Migration and mobility: challenges and opportunities for EU education systems. Green paper. COM(2008) 423. 3 July 2008.

concentrate in urban areas, particularly large cities. In Rotterdam, Vienna and Brussels, for example, approximately half of all schoolchildren have immigrant backgrounds.

What this means for literacy

Implications for children and schools

Migrant pupils perform markedly worse in a range of educational areas, including literacy. This is true even for **second-generation migrant background students**²⁸. Linguistic and cultural differences present substantial educational challenges for children, parents and schools alike, especially when combined with socio-economic disadvantage. These challenges are exacerbated even further when disadvantaged migrants are concentrated in particular schools or areas. They are also made worse if migrant families do not participate in **early childhood education and care**²⁹.

For school systems, the presence of large numbers of migrant pupils strains resources. It also tends to exacerbate segregation along socio-economic lines, with more socially advantaged pupils moving to other schools³⁰. This **increases disparities between schools** and widens educational inequalities.

At the level of individual schools, teaching styles and strategies need to be adapted in order to meet the needs of new populations, and specialised provision may be required. Schools need to develop ways of working with migrant families to help children develop their literacy skills. This can be a challenge, particularly when families lack social and cultural capital. **Family literacy initiatives** can help to build such capital, while also forging links between home and school and improving literacy skills³¹. Improving their skills is essential for children, as failure to develop good literacy has lifelong implications for achievement and integration.

Implications for adult learning

Language courses are vital for the employment and integration of migrants. In the UK, research has found that immigrants with fluent English are 20% more likely to be employed than those without fluent English, and that among employed immigrants, those with fluent

²⁸ European Commission (2008) Migration and mobility: challenges and opportunities for EU education systems. Green paper. COM(2008) 423. 3 July 2008.

²⁹ Education, Audiovisual and Cultural Executive Agency (EACEA)/Eurydice (2009), Early childhood education and care in Europe: tackling social and cultural inequalities. Brussels: EACEA P9 Eurydice

³⁰ European Commission (2008) Migration and mobility: challenges and opportunities for EU education systems. Green paper. COM(2008) 423. 3 July 2008.

³¹ Carpentieri, J., Fairfax-Cholmeley, K., Litster, J., Vorhaus, J. (2011) Family literacy in Europe: using parental support initiatives to enhance early literacy development. London: NRDC, Institute of Education.

English earn an average of 20% more than those without fluent English.³² Other research³³ has shown that **when migrants do not have early access to language courses, they are more likely to learn to get by without integrating.** And the longer learners are in a country without taking a language course, the slower their progress once they do.³⁴ Participation in language courses, on the other hand, further social cohesion not only by improving language skills but also by bringing different groups of migrants together.

Family structure and childhood

Throughout Europe, family structure has changed significantly in the last decades. There are fewer married couples, more single-parent families, fewer children per family, and more older parents³⁵. In addition, more mothers work, often full-time. Europe has seen a rise both in two-earner and no-earner households, increasing inequality between families. There are also increasing worries about the persistence of poverty and intergenerational transfer of disadvantage.

What this means for literacy

On average, children in single-parent families have poorer literacy skills³⁶. Low socio-economic status has particularly significant impacts on literacy. Just as schools with high concentrations of migrant students tend to have poorer literacy outcomes, so too do those with high concentrations of low-income pupils.

Economically disadvantaged families are more likely to lack the knowledge and skills that encourage child literacy development³⁷. Parents in two-earner households are more likely to have such skills, but may be time poor and unable to give their children the attention they need. These and other challenges may reduce opportunities for parental involvement in their child's education, at a time when research shows the huge importance of families on literacy development. Family literacy initiatives tailored to particular groups' needs offer the potential to overcome these barriers.

³² Bloch, A. (2002) Refugees' opportunities and barriers in employment and training. Department of Work and Pensions Research Report 179. London: Department for Work and Pensions. In

³³ McNair, Stephen (2009) Migration, communities and lifelong learning: IFLL thematic paper 3. Leicester: NIACE.

³⁴ Baynham et al (2007) effective teaching and learning: ESOL. London: NIACE.

³⁵ OECD (2010) PISA 2009 results: What students know and can do – student performance in reading, mathematics and science (volume 1). Paris: OECD.

³⁶ Ibid.

³⁷ Lareau, A. (2003). *Unequal childhoods: Class, race, and family life*. Univ of California Press.

3 Social changes

eGovernment

Ease of access to digital information is one of the key pillars of eGovernment, through which Member States use ICT to attempt to provide better, more efficient public services. This can reduce costs for governments and **make information much more readily available** to citizens, promoting access, efficiency and greater democratic involvement. The internet can also increase direct access between politicians and the public. **Social networking sites such as Twitter**, for example, allow more direct and personal communication with voters, and after an initial hesitancy has been adopted by politicians. For example, in December 2008 only two British MPs had twitter accounts. By October 2009, 79 MPs were actively using twitter, and the figure is surely much higher today³⁸.

However, **eGovernment can exacerbate inequalities**. Individuals with poor print literacy or digital literacy skills cannot take advantage of the information provided, and if electronic services replace more traditional forms of government outreach and information provision, the disadvantaged may find themselves worse off than before. This could particularly impact on older Europeans, who are more likely to lack digital literacy skills.

Delivery of social services

The ways in which social services are delivered are changing, with a more mixed supply of service providers, and different expectations of those receiving such services. National and local governments have a greater tendency to view themselves as facilitators of services, rather than deliverers, and are more likely to form **partnerships with private enterprises and non-profit organisations** in order to deliver the services. In particular, non-profit organisations are increasingly providing specialist services to meet the needs of disadvantaged groups. At the same time, some Member States, such as the UK, are witnessing a rise in for-profit involvement in education. When non-profit organisations and businesses can better meet local and/or unique needs, such developments may be positive. However, particularly with regard to for-profit organisations, there is the danger that groups who require extra resources, such as children with literacy needs, may not receive vital services. It may also be the case that some non-governmental service providers cherry pick students, meaning that government providers are left with a higher proportion of high-demand students. There are some evidence of this in British charter schools.

Private enterprises are increasingly providing services to adults. Pensions, for example, are increasingly privatised. Just as the rapid digitisation of information enables e-government, it

³⁸ Hansard Society, 2009 Twitter: communication tool or pointless vanity?

also affects business practices, with potential detrimental effects for the poorly skilled. More information is available to customers than ever before, but businesses such as banks provide **less face-to-face customer service** than before. This can have significant impacts on issues such as financial planning, particularly for older people who lack **digital literacy**. **Financial literacy** is a related issue. As individuals become more responsible for planning and funding their own pensions, the need to understand often complicated written and numerical information increases, even as face-to-face support declines.

At the same time, mundane tasks such as shopping for groceries and clothes increasingly take part online rather than in physical shops, and can increasingly be customised. Online retailing offers advantages for corporations and consumers alike, including reduced travel times, a broader array of options and even customised products at little extra charge. The corollary is a decline in the number of physical shops. For Europeans lacking digital literacy or the confidence to use it, this may mean fewer rather than more opportunities.

Healthcare

Governments increasingly view citizens as informed, active service seekers, as opposed passive recipients of services. In many cases this means that citizens can gain access to more services, but it also means **increased individual responsibility and risk**. In health care, for instance, patients are no longer expected to be patient. Citizens are encouraged through public health messages and other mechanisms to be better informed and more active in their healthcare choices, both in terms of prevention and treatment. In the near future, they will also have much greater access to **ICT-supported treatments or disease management tactics**³⁹.

Making better informed decisions is necessary in confronting health problems associated with individual and group behaviours, such as obesity and diabetes. Along with ageing, these are the biggest health challenges confronting Europe. Avoiding these conditions in an obesogenic environment requires informed decision-making at the individual and family level. Successfully treating them requires large amounts of **self-managed care**. The same is true of many conditions associated with old age.

What this means for literacy

Making healthy choices and managing health conditions require the ability to seek out, select and understand health information, much of which now comes from the internet. Performing these tasks requires greater **health literacy**, by which we mean not just having the basic literacy required to read information – e.g. prescriptions – but being able to **critically analyse and interpret information**. This clearly includes **digital literacy**, e.g. when

³⁹ European Commission (2010) Overview of the European strategy in ICT for Ageing Well.

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searching for and selecting health information from the wide-ranging sources of advice available online. The 2007 European Commission White Paper “Together for Health: A Strategic approach for the EU 2008-2013”⁴⁰, refers to the promotion of health literacy as one of the key actions to reduce health inequalities within the EU.

⁴⁰ European Commission White Paper “Together for Health: A Strategic approach for the EU 2008-2013

4 Political participation and civic engagement

Persistent decline in traditional political participation

Putnam⁴¹ and other researchers have noted steady **decreases in voter turnout and party affiliation**, with both declining for several decades now. Lack of political participation is considered a serious threat to democracy⁴². Uncertainty and insecurity drive some individuals away from mainstream politics and into **extremist movements** that promise order and security⁴³.

There has been a particular **decline in youth participation** in politics. Research on young people's political activities and beliefs has found that political and civic activity is low not solely because of a lack of interest in political issues but also because **young people feel a lack of efficacy**. As individuals, they do not feel the capacity to bring about change, nor do they have faith in the political system's willingness to respond to their interests and needs.

New forms of political and civic engagement

Despite these trends, interest in politics and policy remain high. Even as political party membership has declined, **participation in social movements and membership in interest groups such as Greenpeace has increased**⁴⁴. Young people in particular appear to prefer extra-institutional means of political activity – i.e. participation that is focused on particular issues and not controlled by or loyal to political parties. Such participation may be virtual, using the Internet to create and share information, ideas and messages, or it may be on the streets. Either way, a defining factor is the role of the internet.

The recent **rise in protest politics has been facilitated by social networking tools** such as Twitter and Facebook. Though many early projections about the internet's potential influence on political engagement were pessimistic, these predictions of limited impact were largely made when the Internet was less ubiquitously accessible and before the advent of Web 2.0, which has allowed politicised individuals to create their own dynamic content rather than just consuming content created by others.

⁴¹ Putnam, R. D. (2000). *Bowling alone. The collapse and revival of American communities*: New York: Simon & Schuster.

⁴² Maier-Rabler, U., & Huber, S. Sustainable E-Participation through participatory experiences in education. *eJournal of eDemocracy & Open Government*, 2.

⁴³ Rifkin, J. (1996). *The End of Work*. New York: Tarcher/Putnam.

⁴⁴ Theocharis, Y. (2010). "Cybercultural Values and Extra-institutional Political Engagement in Britain."

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Recent "**digitally enabled**" **protests** have used the Internet as a tool not just for information acquisition but for and "collective and creative engagement"⁴⁵.

What this means for literacy

E-participation uses the Internet and other forms of ICT to empower citizens and encourage participation in political processes from the bottom up, making it easier for people to engage in political activity online or in the streets⁴⁶. However, putting the emphasis on the internet as a technology rather than on its role as a tool for creating and sharing information can lead to a distorted picture⁴⁷. The internet and political participation: exploring the explanatory links).

Social networking sites are ultimately tools of information and communication, and thus require good literacy skills to use. Their proliferation may place greater demands on literacy than previous tools of political engagement did. For example, analysis of electronic voting in a 2007 Estonian national parliamentary election found that **internet voting added to existing inequalities**: disadvantaged groups were even more underrepresented among internet voters than at polling stations⁴⁸. However, some of this underrepresentation was likely the result of lack of access. The increasingly widespread use of Internet enabled smart phones and the advent of Web 3.0 – the ubiquitous internet – are likely to reduce problems of access. However, such changes may not reduce inequities in quality of use.

⁴⁵ Ibid.

⁴⁶ Maier-Rabler, U., & Huber, S. Sustainable E-Participation through participatory experiences in education. *eJournal of eDemocracy & Open Government*, 2.

⁴⁷ Polat, R. (2005). "The Internet and Political Participation. Exploring the Explanatory Links." *European Journal of Communication* 20(4): 435-459.

⁴⁸ Bochsler, Daniel (2010) Can Internet voting increase political participation? Remote electronic voting and turnout in the Estonian 2007 parliamentary elections. Centre for the Study of Imperfections in Democracies, Central European University.

5 Technological changes

Computerisation and communication

As digital tools become ever more ubiquitous in our working and leisure lives, literacy practices and the skills required to support them change, often rapidly. A decade ago, using computers at work was normal, but bank transactions were still face-to-face, or took place over the telephone. Families rented videos from local shops. Shopping required going to the store. Now, online banking, tax services and film rental are the norm for many Europeans. Skype is to some degree replacing email, which almost completely replaced handwritten letters. Smart phones and digital tablets apps allowing **shared storyreading at a distance**, with parent and child reading the “same” digital book even when half a world away.

Web 1.0 gave people static information. Web 2.0 allows us to dynamically create and share information. The next stage, which is already unfolding, is **Web 3.0: the ubiquitous Internet** – one we do not need to “access”, because it is already and always there. As this process unfolds, literacy is becoming less centred on printed texts (although the demise of these is exaggerated), and more “multimodal”. **Multimodal texts** convey meaning and messages by combining a variety of forms, including printed text, photographs, video and audio⁴⁹. Multimodal literacy is not new – newspapers have long told stories using words and images – but it is growing more dynamic and creative, and we no longer just consume multimodal texts, we also produce them, e.g. through posting and commenting on YouTube videos, or sending text messages which include photos. For young “**digital natives**”, all of this will seem as normal as telephones and toasters. For those of us born in even a slightly earlier age, the pace of change can be dizzying. We are “**digital immigrants**” in our own countries, strangers in a now strange (but often wonderful) land.

Even as computers, smart phones, the Internet and other tools increase in availability, there is a **digital divide**. For the brief period that the term has existed, “digital divide” has usually referred to inequities of access to technology⁵⁰. These inequities tend to be based on factors such as socio-economic status, education, ethnicity or geographical area. For example, the **2008 European Union Digital Literacy Review**⁵¹ found that nearly half (49%) of citizens in sparsely populated areas never used the Internet. The Review’s “**Internet disparity index**” also found that groups such as the low educated, the economically inactive and the elderly use the Internet much less than other Europeans. Usage also varies significantly by Member

⁴⁹ O'Brien, D., & Scharber, C. (2008). Digital literacies go to school: Potholes and possibilities. *Journal of Adolescent & Adult Literacy*, 52(1), 66-68.

⁵⁰ Ibid.

⁵¹ European Commission (2008) Digital literacy report: a review for the i2010 inclusion initiative. European commission staff working document. Brussels: European Commission.

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State. For example, **in Iceland and Norway, 65-74-year-olds were at least 10 times more likely to use the Internet than their peers in Bulgaria, Greece and Italy.** However, many barriers to access appear to be breaking down, and disadvantaged groups are making gains in access and use.

While the original digital divide based on access to computers and the Internet is lessening, a **second digital divide** has become apparent. This divide is between people who have the competencies to use computers productively and creatively, and those who use computers in more prosaic ways, without the same richness. For example, compared to their more highly educated peers, low educated Europeans are much less likely to use the Internet to seek healthcare information, to take part in e-government, or to take advantage of online banking and shopping.

What this means for literacy

As the Internet spreads, it **does not just complement other services, it replaces them.** Europeans lacking the skills to take advantage of services such as Internet banking and e-government will be increasingly less able to turn to the face-to-face or telephone-based alternatives they are familiar with, as these are phased out. This makes the presence of good literacy and digital literacy skills essential for active citizenship and participation in society. At the same time, rapid technological change means that Europeans are confronted with a shrinking half-life of knowledge, both in terms of content and how to use new tools.

Young people engage in significantly different literacy practices inside and outside of school, with the former being more multimodal, and also involving significant amounts of computer-based entertainment, such as video games. Researchers specialising in multimodal literacies and what has been called New Literacy Studies argue that the gap between in-school and out-of-school literacy practices is a significant challenge facing teachers and schools⁵².

For children and young people, technology offers the theoretical possibility of improved literacy learning. For example, the rapid spread and declining costs of high-powered mobile devices such as smart phones presents possibilities for **portable, ubiquitous access to literacy tools**, from vocabulary and grammar help to digital libraries full of instantly accessible stories⁵³. This could mean that boys, for instance, have ready access to the

⁵² O'Brien, D., & Scharber, C. (2008). Digital literacies go to school: Potholes and possibilities. *Journal of Adolescent & Adult Literacy*, 52(1), 66-68.

⁵³ Kim, P., Miranda, T., & Olaciregui, C. (2008). Pocket School: Exploring mobile technology as a sustainable literacy education option for underserved indigenous children in Latin America. *International Journal of Educational Development*, 28(4), 435-445.

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reading materials they prefer. Alternatively, it could mean that constant access to handheld video games further depresses their reading.

The advent of texting brought with it a wave of fears that improper spelling would weaken reading and writing skills. Research on adults has shown that exposure to phonetically plausible misspellings (e.g. "tonite") has a negative effect on later spelling assessments. This is true whether the exposure is through text messages or not. However, **exposure to textisms (e.g. "2nite") appears to have a positive effect on spelling**⁵⁴.

Breathless predictions that texting and textisms would harm children's literacy skills appear to be overblown. British research⁵⁵ analysing the relationship between textisms and school literacy attainment for 10-12-year-olds found no association between texting and spelling scores, and found a strong **positive association between textism use and phonological awareness**. These researchers argue that producing textisms such as "2nite" requires and stimulates phonological awareness, and may also stimulate orthographic awareness. Other British research⁵⁶ has concluded that texting has a positive impact on literacy development, as it provides children and young people with "an additional resource for learning about and experimenting with letter-sound correspondences and language, and for reading and decoding text".

Texting, Facebook and other forms of online communication may give many young people the opportunity and incentive to write more extensively outside of school than they otherwise would, with potentially positive effects on writing skill and interest. The key question is to what degree such leisure-time communication activities facilitate the incidental "**invisible learning**" of literacy skills, and to what extent (and for what groups) poor literacy skills mean being shut out of new forms of communication and bonding. Researchers have found positive relationships between young people's use of social networking sites and their life satisfaction, social trust, civic engagement and political participation⁵⁷. Inability to engage in such practices may have negative effects on well-being and participation.

In building a school-home bridge between technology use and literacy development, **access to computers at home does not generally appear to have a positive impact on literacy performance** at school. American research has found that the introduction of computers into homes is associated with modest but statistically significant and persistent **negative**

⁵⁴ Powell, D., & Dixon, M. Does SMS text messaging help or harm adults' knowledge of standard spelling? *Journal of Computer Assisted Learning*, 27(1), 58-66.

⁵⁵ Plester, B., Wood, C., & Joshi, P. (2009). Exploring the relationship between children's knowledge of text message abbreviations and school literacy outcomes. *British Journal of Developmental Psychology*, 27(1), 145-161.

⁵⁶ Wood, C., Plester, B., & Bowyer, S. (2008). A Cross-Lagged Longitudinal Study of Text Messaging and Its Impact on Literacy Skills: Preliminary Results. Poster Presented at the *British Psychological Society Developmental Section Conference*, Oxford Brookes University, September 2008.

⁵⁷ Theocharis, Y. (2010). "Cybercultural Values and Extra-institutional Political Engagement in Britain."

effects on test scores in reading (as well as maths)⁵⁸. The study replicates the findings of 2004 research which found that after controlling for family background, the presence of a computer at home was associated with poorer reading and maths scores⁵⁹. In Romania, a study of low-income children found that those who received a voucher for a free computer went on to get significantly lower school grades in Romanian, English and maths compared to similar children who did not receive a voucher. However, 2010 OECD report utilising Pisa data found more **positive impacts**, including that frequency of computer use at home is associated with gains in educational performance⁶⁰.

A key factor appears to be parental behaviours and attitudes. Some researchers⁶¹ have suggested that **universal access to home computers and high-speed Internet is likely to broaden, rather than narrow, reading achievement gaps**, meaning that overcoming the digital divide in access would open up a larger one related to quality of use. The Romanian study that found negative impacts of computers in the home also found that parental rules about computer use and homework mitigated the effects of computer ownership. Researchers argue that computers are not solutions to literacy problems; instead they are "amplifiers" of other learning tendencies, which tend to be shaped by other factors, such as family influence. The key is not the technology, but how it is used, and whether it complements or substitutes for other, necessary learning behaviours and activities.

Computers in the classroom

For a long time, many optimists have believed – or wanted to believe – that technology was the key to better schools. Regarding computers, many principals and policymakers have believed that if computers become available in the classroom, pupils will learn. The evidence suggests otherwise - **computers have not so far revolutionised education**. The history of technology use in school is a largely a **history of failure, one replicating a cycle of** hype, investment, poor implementation and lack of educational outcomes –followed by a move onto the next technological trend, whether that be radio, films, television or now computers and the Internet.

Thus far, computers in the classroom have only **amplified pedagogical tendencies and capabilities**. They can make good schools better, but bad schools worse⁶². In part, this is

⁵⁸ Vigdor and Ladd, 2010 Scaling the digital divide: home computer technology and student achievement.

⁵⁹ Fuchs and Woessmann, 2004 Computers and student learning: bivariate and multivariate evidence on the availability and use of computers at home and at school.

⁶⁰ OECD (2010) Are the new millennium learners making the grade? Technology use and educational performance in PISA 2006. Paris: OECD.

⁶¹ Vigdor and Ladd, 2010 Scaling the digital divide: home computer technology and student achievement. National Bureau of Economic Research.

⁶² Warschauer, M., & Matuchniak, T. New technology and digital worlds: Analyzing evidence of equity in access, use, and outcomes. *Review of Research in Education*, 34(1), 179.

because computers are not magical devices – they are, at best, tools for teaching and learning. Computers also have significant **opportunity costs**. Other pedagogical tools tend to be more effective at lower cost. In particular, PCs tend to be a poor substitute for time with teachers. If technology distracts attention away from the quality of teaching and management, it can be counter-productive."

Efforts to improve teaching and learning through technology have failed in part because the digital divide has been defined as a technical issue rather than as a reflection of a broader social factors driving educational inequality. Originally, it was thought by many that inequality's impact on access was the key. However, American research finds that a **digital divide based on unequal access to computers in school has largely been erased**⁶³. Schools with high percentages of low SES pupils now have almost identical pupil-computer ratios to schools with low percentages of impoverished pupils, after years of trailing behind. However, **there is still a digital divide regarding how students in low SES and high SES schools use computers**, with the former being much more likely to use them to learn and practice basic skills, and the latter using them in more creative, outcome-orientated ways.

If theoretical access is higher, practical usage appears low – it is far **easier to install computers in classrooms then it is to incorporate** them into teaching and learning. A 2006 benchmarking study of access and use of ICT in European schools⁶⁴. found that even in Member States with high levels of societal computer and Internet use, the majority of teachers use ICT in less than 5% of their classes. Furthermore, most computer use in schools is perfunctory and "bolt-on" rather than integrated into pedagogy. This is not because teachers fear or mistrust ICT in principle – after all, most use computers and smart phones daily in their own working lives and leisure time. It is because it has thus far are proven **difficult to translate technology into better teaching and learning**.

For adults, for whom a key educational issue is access to teaching and learning (because of work, family and other commitments), the Internet and other ICT tools may open up new learning opportunities, particularly regarding informal learning⁶⁵. A 2006 OECD report⁶⁶ found that of adults who had taken online courses, five of six would do so again.

What this means for literacy

As discussed in previous sections, increasing ubiquity of computing devices in our working and leisure lives places extensive demands on our literacy skills. Disadvantaged groups or more likely to have poor literacy; even as access to computers and related devices

⁶³ Ibid.

⁶⁴ Korte, Werner and Hüsin, Tobias (2006) Benchmarking access and use of ICT in European schools 2006. Bonn: empirica Schriftenreihe.

⁶⁵ European Commission (2008) The use of ICT to support innovation and lifelong learning for all – a report on progress. Commission staff working document SEC(2008) 2629.

⁶⁶ OECD (2006) ICT and learning supporting out-of-school youth and adults

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increases, there may be a growing divide regarding how computers are used. Europeans lacking good literacy (including digital literacy) skills will increasingly find themselves shut out of Internet-based services.

Would greater use of computers in school or adult education improve literacy learning? The evidence so far (which is centred on children) suggests not. In 2004, a systematic review of the impact of ICT on literacy learning for children aged 5-16 (in English) found **no evidence to support the claim that ICT-based literacy instruction and resources were more effective than non-ICT approaches**⁶⁷. An American review of the effectiveness of software designed to improve student reading and maths performance found that students in classrooms randomly assigned to use ICT-assisted learning had no better test scores than students in classrooms using traditional, non-ICT techniques." Whether the impact of specialist literacy software will improve over time is one of the issues discussed in Section 7: "Looking to the future".

⁶⁷ English Review Group (2004) A systematic review and meta-analysis of the effectiveness of ICT on literacy learning in English, 5-16. London: EPPI-Centre, Institute of Education, London.

6 Budgetary and fiscal pressures

Many of the trends discussed above have implications for Member States' budgets and financial strength. Starting with labour market and occupational structures, the transition from manufacturing to more knowledge-driven economies has many upsides, but has so far proven to be associated with **slower productivity growth**. As economies shed manufacturing jobs, other occupations account for more of the overall job total, and these tend to be occupations where productivity gains are less feasible. Take teaching, for instance: it takes just as long to teach a child French today as it did 200 years ago. The same is true of caring for the young, or the elderly, or delivering a plate of food to a restaurant customer. At least for the foreseeable future, the capacity of technology to enable people to do these jobs more efficiently appears to be limited⁶⁸.

This has implications both for the economy as a whole (a higher percentage of jobs are low productivity growth) and for education budgets in particular. As explained by Baumol's Cost Law, salaries in most professions rise in response to productivity gains. Teachers' salaries, however, like those of other "efficiency-resistant" professions, rise in response not to productivity gains in education (which have thus far proven extremely difficult to achieve), but to higher salaries in other sectors. This means that **staff wages consume an ever larger share of the budget**, even if education does not improve. And because the reasons for this are not immediately apparent to the typical voter, **dissatisfaction with education budgets** may also grow. This would continue the current trend of taxpayers questioning government spending and demanding greater accountability.

What this means for literacy

The decline of manufacturing and the rise in service sector occupations puts added pressure on other parts of the employment sector to make significant productivity gains.

Demographic factors add to these pressures. The worsening old-age dependency ratio means lower tax revenues and greater expense. An ageing population will certainly mean that a greater percentage of national budgets will be devoted to health care, and may also mean **less support for spending on schools, as older voters focus on issues more directly relevant to them**. On the other hand, there may be **more support for adult education**, particularly for older workers in need of retraining and retirees wanting to stay socially and cognitively active.

⁶⁸ Pierson, Paul. "The New Politics of the Welfare State." *World Politics* 48.2 (1996): 143-179. *Project MUSE*. Web. 24 Mar. 2011.

7. Global trends in literacy

Literacy is increasingly perceived as the key to development efforts in the area of education⁶⁹. It is a key issue for empowering poor people and for opening the door not only to further learning, but also for providing basic capabilities, for adapting to change and for functioning in a knowledge economy. There is already growing recognition and awareness of the fundamental role of literacy for development policy. Two of the six Education for All goals are targeting improvements in literacy. Literacy is already recognised as a dimension of human development and of the fight against poverty. Beyond remaining just as an educational issue, literacy is a precondition for other development priorities. In the area of health, for instance, it is an enabler in fighting HIV/AIDS and other diseases, in nutritional interventions, for reducing child mortality and increasing maternal health. Literacy rates are a key variable explaining the success of poverty reduction strategies.⁷⁰ This will lead to **increasingly integrated interventions**, in which literacy is linked to health, financial, conflict resolution, gender empowerment, sustainable development or quality of government programmes and interventions.⁷¹

Overall, the long term trend is towards wider access to basic educational provision for all. The number of illiterate persons in the world is declining, albeit at a slow pace. The number of illiterate adults declined from 871 million in 1985 to 774 million in 2006. However, this does not automatically translate into high levels of literacy. Moreover, there is still persistent gender inequality, as illiteracy has much higher incidence among women than among men.

What this means for literacy

Literacy is an enabler for wider economic and social development and will thus become increasingly a horizontal issue for development policies. Moreover, as the incidence of illiteracy is gradually reduced outside Europe, **literacy challenges will become increasingly common within and outside of Europe**. The policy attention in development cooperation will gradually shift from addressing illiteracy towards identifying and addressing hidden adult illiteracy and increasing reading achievement for children. This will create scope for further policy exchange between the EU and countries outside of the EU. Increasingly integrated interventions in developing countries can in turn be a source of policy innovation for European literacy initiatives.

⁶⁹ UNESCO, *The Global Literacy Challenge* (2008)

⁷⁰ Ferreira and Ravallion, *Global Poverty and Inequality: A Review of the Evidence* World Bank, Development

⁷¹ Nordveit, B, *Poverty alleviation and integrated service delivery: Literacy, early child development and health* International Journal of Educational Development (2008)

8 Future trends

The perils of prediction

"Prediction is very difficult, especially about the future", Niels Bohr

As observed in the EU Ageing Report⁷², projecting demographic and economic developments "is one of the most daunting analytical tasks facing policymakers. The uncertainty surrounding the projections is high and the longer the projection period, the higher the degree of uncertainty." Predictions about education and literacy are no less daunting, particularly given that they are dependent on changes in areas such as demography, economy and technology.

With regard to the latter, **predictions of technological revolutions in education have a long and distinguished history of abject failure**. Education optimists have successively predicted that radio, film and then television would revolutionise students' lives and learning. In all cases, they paid more attention to the technology than to the nature of the teaching and learning it was supposed to revolutionise.

Socio-technological change

Technology optimists have tended to view technological advances either in isolation, removed from the social environment in which they occur, or as a **panacea for the social and educational problems created by that environment**. Modern Europe is striving to build an education system for a post-industrial society, without having overcome the educational and socio-economic failings of the industrial age⁷³. These failings are particularly obvious with regard to the impact of inequality, migrant status and other forms of disadvantage on literacy and other educational outcomes. Despite constant policy efforts over the last half century, few disadvantaged groups benefit significantly more from education than they did in the mid-20th-century. The notable exception is females, but even for them, most gains – for example in terms of increased participation in higher education – have gone to the middle classes.

Technological changes will occur not in a vacuum, but in the context of tremendous social changes, many of which have already been discussed in this report. Ageing populations and increased ethnic diversity are guaranteed. Increased polarisation of the labour market and

⁷²European Commission (2009) 2009 Ageing report: economic and budgetary projections for the EU 27 Member States (2008-2060). Luxembourg: European Communities, p. 19.

⁷³ Warschauer, 2007 The paradoxical future of digital learning.

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rising economic inequalities are likely, as computerisation leads to the replacement of more good jobs than it creates and the oft-promised knowledge economy of the future reveals itself instead as a knowledge and service economy⁷⁴.

Within that context, Europeans will face rapid technological change, at a pace that even “digital natives” may find it difficult to cope with. Like their parents before them, today’s youngsters will one day discover that their own children understand new technologies better than they do. The guarantees in this environment of rapid change are that computing power and information storage will continue to grow exponentially cheaper. The Internet will cease being something we access and instead become something that is always with us. This means that **the “information landscape” in which we live will grow richer and more personalised**⁷⁵. Augmented reality will be commonplace: whether through the screen of her smart phone or on the inside of her glasses, a woman walking down the street in Berlin will be able to instantly access a dizzying array of information about her environment: the buildings she passes, the history of the area, and possibly even the people around her. What’s more, her friends in other European cities will be able to see what she sees, in real time, and converse with her about it.

Less predictable are developments related to psychopharmacology and other forms of cognitive enhancement, genetic engineering, and artificial intelligence.

What this means for literacy

As print newspapers and magazines are steadily replaced by digital alternatives, **literacy problems may become less of a hurdle**. Computers and portable reading devices are likely to be able to “speak” words that readers struggle with, or possibly even to automatically adjust text reading level to the user’s need. This means that **digital textbooks** could in principle be personalised for and/or by individual students. Researchers are currently seeking to develop personalised adaptive reading assistants⁷⁶, also known as **intelligent tutors**, to help dyslexic children improve their reading.

Some futurists have predicted that the literacy problem will be solved by making reading obsolete, replaced by **“voice in, voice out” computing**⁷⁷. While there is little doubt that in the future we will speak to our computers more and be spoken to more by them, text and speech are complementary rather than competing. Each has strengths the other does not, so there seems little reason why the spoken word would replace text on a major scale.

⁷⁴ Facer, K. and Sanford, R. (2009) The next 25 years? Future scenarios and future directions for education and technology. *Journal of Computer Assisted Learning*, 26, 74-93.

⁷⁵ Ibid.

⁷⁶ Tzouveli, P., et al (2009) Adaptive reading assistance for the inclusion of learners with dyslexia: The AGENT-DYSL approach.

⁷⁷ Crossman, W. (2004). *VIVO (voice-in/voice-out): The Coming Age of Talking Computers*: Regent Press.

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Futurists point to the development of **distance learning** options such as MIT Open Courseware and the Open Courseware Consortium, both of which provide online courseware at no charge, as evidence that education does not require schools⁷⁸. It is clear that the Internet makes informal learning much more accessible and significantly improves the quality of learning materials and choices. However, open courseware initiatives tend to provide materials but little if any teaching, and tend to be targeted at relatively high skilled, highly motivated learners. There is so far no evidence of how such initiatives would benefit struggling literacy learners, whether young or old. Some researchers express hopes that **video games** could help literacy learning, but while it is clear how immersive game environments could be used to teach subjects such as history or literature, it is less clear how they might be used for the purposeful or invisible learning of literacy. Literacy is a **complex educational and social problem** – and there are few if any “silver bullets” for such problems⁷⁹.

⁷⁸ Frey, Thomas (2007) The future of education.

⁷⁹ Facer, K. and Sanford, R. (2009) The next 25 years? Future scenarios and future directions for education and technology. *Journal of Computer Assisted Learning*, 26, 74-93.