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International Evidence Review of Basic Skills: Learning from High-performing and Improving Countries

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The National Research and Development Centre for Adult Literacy and Numeracy (NRDC), at the Institute of Education, London is the national centre for the study of adult language, literacy and numeracy research, policy and practice.

Since it was established in 2002, NRDC has gained an international reputation for its expertise in conducting quantitative and qualitative research with a range of stakeholders including employers, teachers and learners. Regular clients include UK government departments, national and international NGOs, and the European Commission.

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Glossary of acronyms and key terms

ABE	Adult Basic Education, a term more commonly used in North America
ALL	Adult Literacy and Life Skills survey
IALS	International Adult Literacy Survey
ISAS	International Survey of Adult Skills
LES	Literacy and Essential Skills – term used in Canada
NQF	National Qualifications Framework – term used in England to categorise different levels of qualification
PIAAC	Programme for the International Assessment of Adult Competencies – this term is used in the case study countries although ISAS is more commonly used in England
PS-TRE	Problem Solving in a Technology Rich Environment

Executive Summary

Introduction and methodology

The 2012 Survey of Adult Skills (ISAS), part of the OECD's Programme for International Assessment of Adult Competences (PIAAC)[1] provides governments with data on levels of skills (and skills need) among the adult population, while also enabling cross-country comparisons in its three dimensions: literacy, numeracy and problem solving in a technology rich environment (PS-TRE).

This research focused on countries that were high-performing in at least one of the three dimensions assessed by the OECD's Survey of Adult Skills, or rapidly improving in literacy. The study comprised of three strands: (1) a rapid review and assessment of international evidence; (2) analysis of data from the International Survey of Adult Skills conducted as part of PIAAC, and (3) four in-depth country case studies which included interviews with basic skills experts and English and non-English language literature reviews.

Specifically the research set out to explore whether high-performing and improving countries share common socio-demographic, economic or educational characteristics with each other and with England, to examine the characteristics behind high performance in these countries and to investigate basic skills delivery to adults including programmes aimed at younger people and initiatives that use learning technology. In so doing, the main aim of this study was to draw lessons that could inform future adult basic skills policy, its delivery and the application of skills by adults in England.

What similarities are there among high-performing and rapidly improving countries?

Socio-demographic profiles do not provide a consistent indicator of 'high performance' among countries. Gender and age profiles are similar between most of these countries, and the percentage of foreign-born and foreign-language speaking immigrants varies widely.

Many high-performing countries are more likely than the average of participating OECD countries to have higher proportions of adults who:

- have at least one parent with tertiary education (although there are some exceptions, such as the Netherlands);
- have attained tertiary education themselves;
- have participated in formal or non-formal education in the past 12 months; and
- are employed (tending towards more in managerial and professional jobs).

[1] See BIS (2013), *The International Survey of Adult Skills 2012: Adult literacy, numeracy and problem solving skills in England*, Research Paper 139, for background on the International Survey of Adult Skills and specific analysis of England's performance. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/246534/bis-13-1221-international-survey-of-adult-skills-2012.pdf (last accessed 4 September 2014).

Variation between countries is relatively small when comparing means and there is no clear-cut relationship between the distribution of mean scores, the variation in scores between the highest and lowest 5% of performers in each country, and overall performance. A number of countries have relatively small variations, while those with the largest variations include high, medium and low-performing countries.

Across all high-performing and improving countries, the common characteristic associated with high literacy proficiency (at PIAAC Level 4 or 5) was **educational attainment**. For high proficiency in numeracy, **occupation** was also significant; and for problem-solving in technology rich environments (at PIAAC Level 2 or 3) **education, occupation, age, and computer experience.**

How does England differ from high-performing and rapidly improving countries?

There are no single factors that distinguish England from high-performing and improving countries. Instead England shares features with some but not all of these countries. For example, like many of the high-performing countries England has a relatively high proportion of people educated at tertiary level, and a high employment rate.

Similar factors are associated with high performance in England as in high-performing and improving countries; however, parental education has a stronger relationship with skill levels in England, and those whose parents are educated at tertiary level have significantly higher skills.

England differs most starkly from the high-performing and improving countries in terms of the skills performance of **younger cohorts** at lower levels. The proportion of 16-18 and 19-24 year olds who attained Level 4 or 5 in literacy and numeracy was lower in England than in many high-performing countries, although it was not significantly different to Norway. Other research focusing on young people (NfER, 2014) has found that this 'social gradient' is steeper among young people aged 16-24 than among the population as a whole.

Compared with England, most high-performing or improving countries generally have *either* a much higher proportion of young people who are still in education only or they have a much higher than average proportion of young people who are in both education and work. The proportion of 16-24s who are 'not in education, employment or training' (NEET) is fairly uniform across the majority of high-performing and improving countries, at between 8% and 11%, but in England it is significantly higher, at 18%.

How do high-performing and improving countries approach basic skills delivery?

Informed by the rapid evidence review and the survey analysis, Canada, the Netherlands, Norway and the Republic of Korea were selected for in-depth case studies based on interviews with national experts and analysis of relevant English and other language documentation. The aim of this strand was to draw lessons to inform future adult basic skills policy and programming in England.

There are a number of observations to make about this process:

- Each country's basic skills system differs in terms of policy, delivery, and funding levels. This limits the comparisons that can be made between countries.
- It is too early for PIAAC to have had much influence on policy.
- The review of sources uncovered little evaluation evidence and there is more coverage of policy than of programmes in the literature, with the consequence that the lessons that can be drawn are often high level.
- A central theme that emerged from the data was that England is perceived as an exemplar by some of the case study countries, both in terms of adult basic skills delivery and teacher training, and for the coherence of research in this area.

Basic skills delivery in the case study countries

- There was no expectation in any of the case study countries that explicit responses to PIAAC would include fundamental changes to adult basic skills policy.
- Despite the differences in adult basic skills systems, governments in the case study countries share a similarity in focus. For example, most governments are designing provision for the same target groups, namely, low skilled people in employment, the unemployed and immigrants. All the case study countries are grappling with the issue that provision tends to be taken up by groups that are easier to reach, rather than those that are most in need.
- In all countries, there is a trend towards offering more workplace provision, with employers encouraged to play a role by matching funding and ensuring that skills training is linked to the specific needs of their business. The Canada Job Grant, for example, matches employer investment in basic skills training with funding from the federal government and gives employers responsibility for buying in training.
- Little robust evaluation data is available on adult basic skills programmes in the countries under review. Canada is an exception to this, and has developed a strong research culture on workplace learning. A recent Randomised Controlled Trial on workplace Literacy and Essential Skills programmes (Gyarmati et al., 2014) found significant positive impacts, and good evidence of return on investment, in the presence of government subsidies.

Use of technology

- High-performing and improving countries have above OECD average use of and availability of technology. Regression analysis found that use of a computer in everyday life was a significant predictor of high literacy and numeracy skills in the majority of high-performing countries in those domains, and was a universal predictor for PS-TRE.
- In Canada, the Netherlands, and Norway, as in England, there have been a number of policy initiatives in recent years focused on increasing digital access, ensuring the population is equipped with basic digital skills, and digitising public services. All countries face challenges in ensuring that these strategies are implemented without excluding those with low digital skills or limited or no access to technology.

- Although technology is increasingly incorporated into compulsory education, little robust evidence emerged on its effective use in adult basic skills programming, with few lessons emerging for England as a result. Use of technology with this learner

cohort is often based on assumptions of what works with adult learners, rather than on solid research evidence.

- Experience from the Netherlands and Germany suggests that online learning platforms can engage adult learners in large numbers, but that there are challenges in sustaining this engagement through to completion of the course.
- It is likely that efforts to promote the use of technology in adult basic skills education in the case study countries may lag behind similar measures in England, where there is wide cross-sector policy interest in the use of technology in learning provision.

Performance of younger cohorts

- As in England, young people in Canada and in Norway performed less well in PIAAC than older people. Although Norway's overall performance in PIAAC was significantly higher than average in all three dimensions, Norwegian adults aged 16-24 scored at OECD average level in numeracy and below average in literacy. In Canada, there was a decline in competence of the youngest cohort in PIAAC compared to earlier assessments such as PISA.
- Whether performance of young people was poor or strong, national experts attributed this to factors within the compulsory education sector. In the Netherlands, experts pointed to the high quality of the Dutch compulsory education system, with its strong focus on information processing skills. Korea, too, places a high premium on basic skills in its primary and secondary education, and formal schooling is supplemented by the world's highest rate of participation in private tutoring. In contrast, evidence from Norway points to low levels of pupil engagement and high drop out rates at the upper secondary level.
- In the drive to improve young people's performance, the issue of early school leaving (ESL) emerged as key. In the Netherlands all children are given a Personal Identification Number through which data on their school careers are tracked. All secondary schools are expected to monitor and register absenteeism, disengagement and drop-out, and a monthly report is available to municipalities and schools, helping them to give priority to pupils who appear to be at risk of drop-out or other forms of school failure.
- Far less evidence emerged on how case study countries were tackling young people's low skills though adult basic skills programmes. Apprenticeships were viewed as a way of reducing skills inequalities. However, a key theme across countries was the need for closer policy and programme attention to basic skills development throughout all stages of the lifelong learning system. Education strategies and systems frequently underestimate the need for on-going attention to basic skills development, perhaps reflecting a view of literacy as a binary concept, that is, that people are either 'literate' or 'illiterate'.

Policy strengths and weaknesses: lessons for England

- Policy makers should give as much attention to implementation as to policy development. For example, the impact of the current policy commitment to fund free training for any adult who wants to improve their literacy and numeracy up to Level 2 may be limited by lack of awareness among adults that this support is available and limited guidance for those who do seek provision.

- Policy makers should ensure that there is synergy between, and coordination across, the government departments with an interest in improving literacy and numeracy.
- Understanding the nature of the low-skilled population is vital if policy makers are to be able to allocate limited funds to maximum effect. Policy makers should seek to understand the nature of the skills of the immigrant population in order to be able to develop appropriate provision, and consider whether the current relationship in policy between language proficiency and immigration status is helpful.
- Policy makers should ensure that funding is long-term in nature to allow providers to understand local need, develop appropriate provision and build capacity. Funding also needs to be invested in rigorous evaluations of literacy and numeracy initiatives, which take a broad view of the impacts of provision rather than focusing only on short-term outcomes.
- Workplace programmes should be tailored to the needs of the workplaces in which they are situated in terms of the relevance of the content of the training to the literacy and numeracy demands on the workforce, and should be relevant and flexible enough to avoid disrupting the smooth running of the business.
- Literacy and numeracy provision in England is often cited as a model to follow, with particular praise for our approach to teacher training and for the coherence of our research in this area. However, there is a danger that we will fail to build on the gains made through the Skills for Life programme in building capacity in the sector and that future policy makers will be faced with the task of rebuilding that capacity at a future date as practitioners leave the provision and contraction of funding means that newly qualified teachers struggle to find enough work to sustain a career.

1. Introduction

1.1 The context for this research

Over the past couple of decades, Westminster governments have invested heavily in efforts to improve adult literacy and numeracy levels. The ongoing need for these efforts was recently illustrated by England's relatively poor scores in the 2012 International Survey of Adult Skills (ISAS), part of the OECD's Programme for International Assessment of Adult Competences (PIAAC)[2]. PIAAC's scores and rankings allow governments to estimate national levels of skills (and skills need), while also enabling cross-country comparisons. Such comparisons emphasise scope for improvement in England: other OECD countries, including those with relatively similar socio-economic and demographic profiles, scored more highly than England in literacy, numeracy and/or problem solving in a technology rich environment (use of Information Communication and Technology) – the survey's three main dimensions.

Cross-time comparisons in literacy using the International Adult Literacy Survey (IALS) highlight the possibility of improvement; Poland, in particular, has managed to increase its literacy score by 35 points since IALS. England also made a small gain, but this achievement was generally overlooked in the reporting of PIAAC, in large part due to serious concerns about England's poor age trends: alone among participating countries, England's 16-24 cohort performed worse than its 55-64 group.

The OECD's Programme for International Student Assessment (PISA) – targeted at 15 year olds – has acquired extensive policy reach and provides the basis for one of the European Union's key education indicators. Just as some countries (like Germany) have sought to learn from their competitors' (like Finland) PISA successes, now governments across the OECD nations are seeking to learn from PIAAC. However, analysis of PIAAC data alone is not enough. As highlighted in recent PIAAC-focused conferences at Canada's Centre for Literacy and the Institute for Education[3], the key question is how to use PIAAC and other data sources effectively and accurately. Countries' differing scores may be the product of any number of political, social, economic, cultural and even genetic factors; discerning the factors underpinning high performance and/or rapid improvement is thus a complex challenge. Access to the best national-level evidence and the most highly informed experts is essential to address these key policy questions.

1.2 The research aims and objectives

This research aimed to review international evidence and further analyse data from the OECD's Survey of Adult Skills in order to identify and undertake case studies of countries

[2] See BIS (2013), *The International Survey of Adult Skills 2012: Adult literacy, numeracy and problem solving skills in England*, Research Paper 139, for background on the International Survey of Adult Skills and specific analysis of England's performance: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/246534/bis-13-1221-international-survey-of-adult-skills-2012.pdf (last accessed 15 July 2014).

[3] For details, see: http://www.centreforliteracy.qc.ca/learningevents/summer-institute-2014) and http://www.ioe.ac.uk/100132.html

which are high-performing or improving in literacy, numeracy and problem-solving in a technology rich environment (PS-TRE).

The intention was to draw lessons from the analysis of evidence and in-depth case studies that could inform future adult basic skills policy, its delivery and the application of skills by adults in England. The project's objectives were to:

- Undertake an initial English-language rapid evidence assessment of eight high-performing and improving countries in order to draw general lessons about literacy, numeracy and ICT delivery and identify a short-list of case study candidates;

- Analyse the ISAS data to examine whether there are common socio-demographic, economic or educational characteristics between high-performing and improving countries in literacy, numeracy and problem solving. The analysis and rapid evidence assessment will be used to inform case study selection;

- Identify four appropriate international case studies for further investigation. Conduct a more detailed review of English and non-English language literature sources and in-depth interviews with country-based experts for each case study; and

- Analyse and interpret the literature and case study evidence to identify lessons regarding the delivery and application of literacy, numeracy and ICT which can be applied to an English context.

The specific research questions the project set out to address were:

- What common socio-demographic, economic or educational characteristics are shared between high-performing countries in literacy, numeracy and problem solving?

- Are there any common socio-demographic, economic or educational characteristics between 'improving' countries in literacy and numeracy?

- Which socio-demographic, economic or educational characteristics does England share with high-performing and improving countries?

- Are there any high-performing and improving countries with a similar age / skills profile of relatively highly-skilled older adults? What can be learned from comparison with this type of country?

- What are the characteristics of young people (aged 16-18, 19-24) in high-performing and improving countries? Are there particular characteristics of the basic skills offer to young people in high-performing and improving countries?

- Is high-level or improving basic skills performance linked to increased use of technology? How are technologies used in high-performing or improving countries? Are there any innovative delivery methods using technology which could be applied in an English context?

- What lessons, applicable to an English context, regarding basic skills delivery (in particular maths) can be learned from a review of ISAS and other evidence?

- What lessons on literacy, numeracy and ICT delivery and application can be applied within an English context from selected case studies?

1.3 The structure of this report

This report is structured around the main research questions. Chapter 2 summarises the methodologies utilised for the project, with further details available in the Appendices.

Chapter 3 focuses on research questions 1-3 and draws primarily on survey data to investigate common socio-demographic, economic and educational characteristics of two sets of countries – those that were 'high-performing' in PIAAC and those that are 'improving' – and examine which of these characteristics England shares.

Chapter 4 provides an overview of basic skills delivery in the selected countries and explores the links between high and improving performance and use of technology, both in a broad sense and in the delivery of adult basic skills, (research questions 6 and 7).

Chapter 5 investigates age trends (research questions 4 and 5), focusing on young people aged 16-18 and 19-24; and, in countries that are succeeding, addresses what we might learn about the characteristics of basic skills delivery for younger people.

Chapter 6 focuses on the case study countries to draw out the strengths, weaknesses, challenges and successes of policy and practice in each (research question 8).

2. Methodology

This study drew on a range of methods to address the research questions set out in Chapter 1, summarised below. Further details on the methodology are presented in Appendix 2.

2.1 Rapid evidence assessment

The rapid evidence assessment (REA) comprised an evidence review of eight high-performing or improving countries which participated in the OECD's Survey of Adult Skills, undertaken as part of its Programme for the International Assessment of Adult Competencies (PIAAC). The eight were selected to provide a range that included some Asian and Anglophone countries, and to reflect current policy interests. They were: **Canada, Estonia, Germany, Japan, the Netherlands, and Norway** (high performers in at least one skills domain), and **Poland and Korea** (rapid improvers).

The REA focused on English-language sources only, comprising:

- PIAAC background reports and conference reports; CEDEFOP's synthesis of European PIAAC findings; and national/cross-national briefing documents by and for NGOs and civil servants; relevant literature on PIAAC methodology;
- International assessment literature, including studies of 1994 the International Adult Literacy Survey (IALS) and the 2003 Adult Literacy and Life Skills Survey (ALL), with a particular focus on policy responses and impacts in the selected countries; relevant literature on the OECD's Programme for International Student Assessment (PISA); and
- Other relevant academic literature, policy literature and other grey literature identified from a range of education and policy-focused databases.

In order to take account of potential policy impacts of IALS, literature from 1994 onwards was included in the database searches. These were supplemented by a range of additional strategies:

- Consultation with research and policy experts in each rapid review country;
- Analysis of reference lists in publications already known to the research team;
- Use of the Google Scholar 'cited by' tool; and
- Investigation of adult basic skills-specific research and policy databases.

2.2 Analysis of the OECD's Survey of Adult Skills

Data analysis was undertaken on survey data sourced from Public Use Files for each country. All were downloaded from the OECD website, with the exception of the Australian data which was used with permission from the Australian Bureau of Statistics (ABS). It

should be noted that the Public Use Files only contain the variables that were collected on a standard basis in participating countries, and therefore do not include ethnicity or disability.

Due to the survey's complex sample structure, involving both household survey methodologies and direct psychometric assessments, it is necessary to use specialised macros in SAS or Stata in order to implement procedures that generate design-based standard errors for each estimate (standard errors of means, proportions, regression parameters, etc) which take account of the complex survey design. Unbiased standard error estimates are required to accurately assess the quality of point estimates as well as to produce valid inferential statistics. The results presented in this report are reproduced from published OECD sources, or have been obtained from primary analysis using the SAS macro.

As well as cross tabular (bivariate) analysis, the research used logistic regression to identify the characteristics associated with high performance, for each of the three skills domains. In addition, regression was used to identify key similarities between England and the range of high-performing and improving countries examined in this report.

2.3 Case studies

2.3.1 Case study selection

The case study selection was grounded in the results of the REA and survey analysis, and agreed with the project Steering Group. Six selection criteria were identified:

- The similarity of each country's skills and age profile to that of England,
- Performance type in PIAAC – that is, whether the country is a high performer (and in which subject/s), or an improver,
- The potential replicability of each country's policies in England,
- The availability of relevant evidence (in any language) in each country,
- The quality of information available from each country, in terms of the robustness of the available evidence, and the level of detail available in policy documents and/or policy analyses, and
- The relevance of that information to the English context.

Table 2.1 (overleaf) provides an overview of the eight short list countries against these criteria. In terms of comparable rankings, England was 12/23 (literacy); 17/23 (numeracy) and 14/19 (PS-TRE).

Table 2.1: Summary case study selection matrix

Country	Profile similarities	Performance	Policy replicability	Availability of evidence	Quality of information	Relevance of policy & evidence
CANADA	Moderate to high	High performance at highest levels in problem solving (rank 7/19) Average performance in literacy (11/23) and below average performance in numeracy (14/23)	**Moderate to high**	**Very high**	**High**	**High**
ESTONIA	Moderate	High performer in literacy (7/23)	Low to moderate	Low	Low	Moderate
GERMANY	Moderate	Higher performer in numeracy (11/23)	Moderate	Moderate	Moderate	Moderate
JAPAN	Low	High performer in literacy and numeracy (rank 1/23 in both). High performance of young adults in literacy.	Low to very low	Very low	Very low	Low to very low
KOREA	Low	Below average overall for literacy (13/23), numeracy (15/23) and PS-TRE (15/19). However, high performance of younger adults (16-24) in all three dimensions (ranks 4/23 for literacy, 5/23 for numeracy and 1/19 for problem solving). Fast improving performance overall.	Moderate	**High**	**High**	**Moderate to high**
NETHERLANDS	Moderate to high	High performer in literacy (3/23), numeracy (4/23) and problem solving (3/19)	**High**	**High**	**High to very high**	**High to very high**
NORWAY	High	High performer in literacy (6/23), numeracy (5/23) and problem solving (4/19) Young adults (16-24) below OECD average in literacy and average in numeracy.	**High**	**Very high**	**Very high**	**High to very high**
POLAND	Low	High improver in literacy (IALS to PIAAC)	Low to moderate	Low	Low	Low

Based on these criteria, the countries selected as in-depth case studies were **Canada**, **the Netherlands**, **Norway**, and the **Republic of Korea**.

2.3.2 Case study methodology

The design of the in-depth case studies comprised: 1) an in-depth English language rapid evidence assessment; 2) two interviews conducted with experts; and 3) a native language literature review. Although the same basic approach was attempted in each country, in practice the method was adapted to allow for specific circumstances. Details of the achieved approach for each country are outlined in Table 2.2. Further details on interviewees are included in Appendix A2. iii).

Table 2.2: Overview of case study components achieved to date

Country	REA	Expert interviews	Native language literature review
CANADA	Achieved	Interviews achieved with **three experts**: one leading NGO representative and two senior civil servants (conducted as a joint interview).	Achieved
THE NETHERLANDS	Achieved	Interviews achieved with **three experts** (one of these was conducted as a joint interview).	Relevant Dutch language publications were translated professionally for inclusion in the analysis.
NORWAY	Achieved	Interview achieved with **two experts**.	Achieved
KOREA	Achieved	Email interviews were conducted with **three experts**.	Interviewees provided a list of English-language publications which were incorporated into the REA.

Interviews were arranged by email and each interviewee was sent a summary version of the topic guide in advance. The full case study topic guide is included in Appendix A2. iii). The interview mode chosen depended on the country. A joint interview with two Dutch experts was conducted face-to-face and a third by Skype. Interviews with Norwegian and Canadian experts were held via Skype. All face-to-face and telephone interviews were recorded and data subsequently inputted into an answer grid. Korean experts completed email interviews. All interviews were conducted in English and lasted 45- 60 minutes.

Appendix 3 contains a bibliography of all English-language and non-English language sources consulted in this review.

3. Characteristics of countries with high or improving performance

Key findings

In terms of profile characteristics there are no single factors that distinguish England from high-performing and improving countries. Instead England shares features with some but not all of these countries. For example, like many of the high-performing countries, the proportion of people educated at tertiary level in England is higher than the average of OECD countries participating in the survey, as is its employment rate, its participation rate in formal education during the past 12 months, and the proportion who took part in adult education and training for job-related reasons.

England also has a relatively high proportion of foreign-born or foreign first-language speaking immigrants compared with the average of countries participating in the survey. Although this is lower than certain high-performers like Australia or Canada, it is in line with a number of other high-performing countries such as Austria, Germany, and Norway.

The main profile differences between England and high-performing countries relate to social background (proxied by parental education), the impact of this on adult skills, and the performance of young people aged 16-24. Adults in many high-performing countries are more likely than the average of OECD countries participating in the survey to have at least one parent who completed tertiary education. In England, the proportion with at least one parent who completed tertiary education was close to average. The occupational composition of the workforce in England also differs from most high-performing countries in that it has fewer workers in skilled occupations and a higher proportion in semi-skilled white-collar jobs (more in line with Japan and Korea than with other European or English-speaking countries).

Similar factors are associated with high skills performance in England as in high-performing and improving countries across all three domains of literacy, numeracy and problem solving in a technology rich environment. However, parental education has a stronger relationship with skill levels in England, than it does in high-performing and improving countries. Furthermore, research by NfER (2014) has found that this relationship is more pronounced among young people in England, than among the population as whole.

This chapter draws primarily on analysis of the Survey of Adult Skills (PIAAC) to investigate similarities in socio-demographic, economic and educational characteristics between high-performing and improving countries – and to examine which of these characteristics England shares.

3.1 The scope of the analysis

3.1.1 Defining high performance

In agreement with the project Steering Group, high performance has been defined as achieving PIAAC Level 4 or 5 in the literacy and numeracy assessments.[4]

For PS-TRE, we have focused on proficiency, defined as achieving PIAAC Levels 2 or 3 (in line with the OECD's analysis). This is because only six per cent of the sample overall achieved Level 3, which makes it difficult to conduct sub-group analysis on this group.

3.1.2 Defining high-performing countries

In agreement with the project Steering Group, high-performing countries have been defined as those scoring above the average of OECD countries participating in the survey[5] in each particular skills domain. High-performing countries in literacy that significantly outperform England are (in rank order): Japan; Finland; the Netherlands; Australia; Sweden; Norway; Estonia; and Flanders (Belgium). We have also examined the Czech Republic, Slovak Republic and Canada which are above the average of OECD countries participating in the survey although not significantly different from England in terms of their mean literacy scores.

There is a high degree of overlap between high-performing countries in numeracy. To the list above can be added Denmark, Austria and Germany; while Australia and Canada fall out as they are just below the average of OECD countries participating in the survey (although both perform significantly higher than England).

For problem-solving in a technology-rich environment (PS-TRE), the following countries performed above the average of OECD countries participating in the survey (all of which are also high performers in literacy or numeracy): Japan; Finland; Australia; Sweden; Norway; the Netherlands; and Austria.

3.1.3 Defining improving countries

Korea and Poland are included in the analysis as rapidly improving countries in literacy. Although they have not yet attained above-average performance overall, the younger age cohorts in these countries perform significantly better than older generations, as well as

[4] For further details on the PIAAC assessment levels and how they compare with the National Qualifications Framework (NQF) in England, please refer to Tables A3.1 to A3.3 in Appendix 3 of this report, and to the Annex to the England national report, where these levels are defined in detail and mapped against the NQF: BIS (2013), *The International Survey of Adult Skills 2012: Adult literacy, numeracy and problem solving skills in England*, Research Paper 139: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/246534/bis-13-1221-international-survey-of-adult-skills-2012.pdf (last accessed 4 September 2014).

[5] This is the average of the countries, or sub-national entities (such as Flanders), which participated in the OECD Survey of Adult Skills and for which data was available at the time of the analysis.

above the average of OECD countries participating in the survey, for the same age group. Poland in particular has demonstrated rapid improvement in literacy since IALS (with a mean score that has increased by 35 points).

3.2 Similarities between high-performing and improving countries, and differences with England

3.2.1 Profile characteristics

Socio-demographic characteristics

Gender and age profiles are similar across high-performing countries, except in Japan (which has lower proportions of 16-24 year olds and more people aged 55-65), Flanders (Belgium) which has a lower proportion of 16-24 year olds; and Finland where there are more 55-65 year olds.

In terms of social background (proxied by parental education), adults in many high-performing countries are more likely than the average of OECD countries participating in the survey to have **at least one parent who completed tertiary education**[6]. There are some exceptions: in Flanders (Belgium) and the Netherlands (where this proportion is around the average) and Finland, Austria, the Czech Republic and the Slovak Republic (where it is below).

Among improving countries, and reflecting rapid inter-generational progress in education, Korea had significantly more adults than the average of OECD countries participating in the survey whose parents had *not* attained upper secondary level education (52%). In contrast, over half of those in Poland had at least one parent who attained upper secondary level (58%).

In England, the proportion of people with at least one parent who completed tertiary education was close to the average of OECD countries participating in the survey, at 27% (Figure 3.1). While similar to high-performers the Netherlands and Flanders, and higher than some others, this proportion was lower than many of the other high-performing countries. Section 3.4 outlines how parents' education is a strong predictor for literacy and numeracy skills in some countries, and a particularly strong predictor in England[7].

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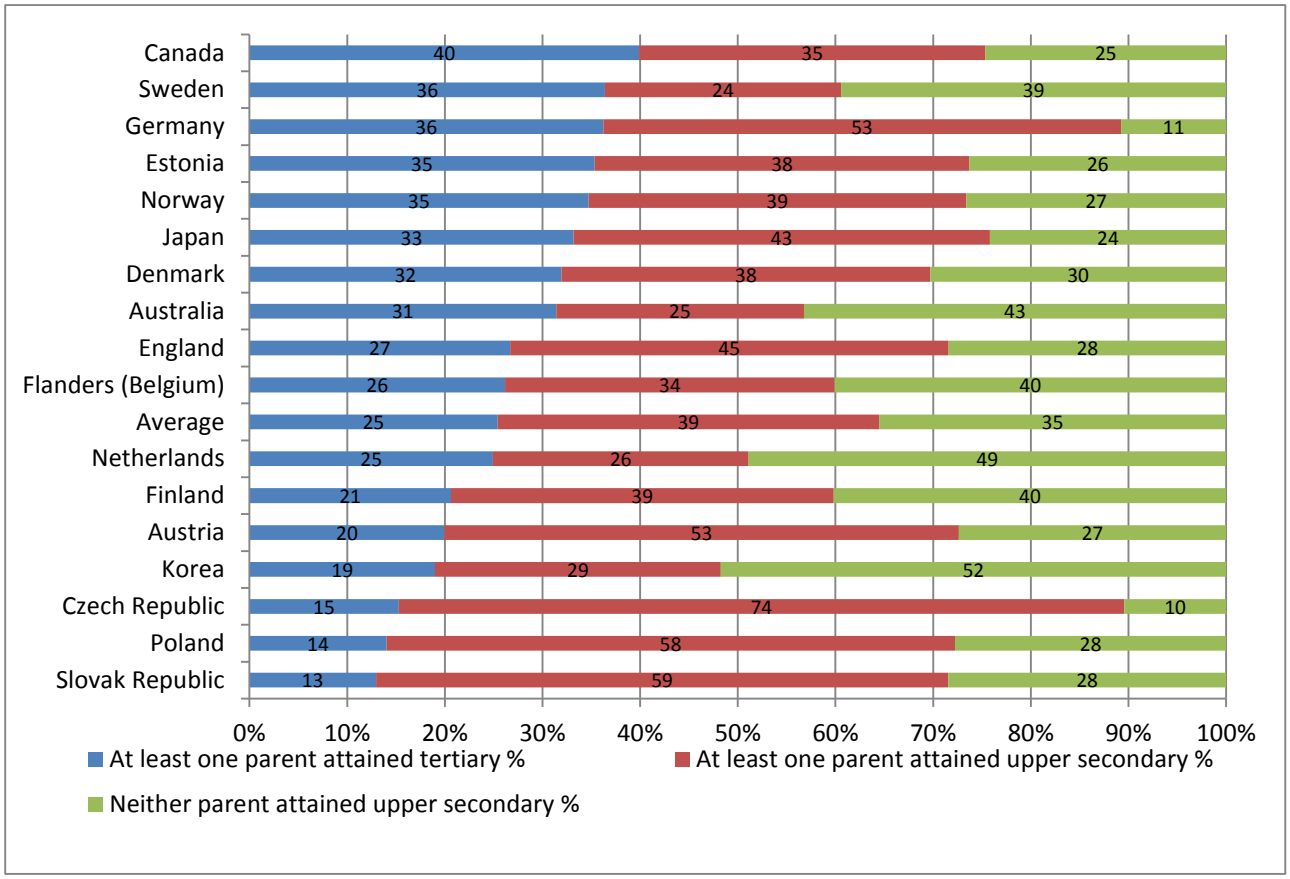
[6] The OECD's Survey of Adult Skills codes both mother's and father's level of education at either lower secondary education or below; upper secondary; or tertiary. The OECD defines these according to qualifications attained, coded to International Standard Classification of Education (ISCED) levels. Lower than upper secondary incorporates no qualifications plus ISCED 1, 2, and 3C short (which includes GCSEs at grades D-F). Upper secondary includes ISCED 3a, 3b, 3c long, and 4, which in England includes GCSEs at Grade A*-C, A-levels and post-compulsory work-based training such as Apprenticeships and Advanced Apprenticeships. Tertiary education includes ISCED 5a, 5b and 6,and equates to higher qualifications at sub-degree or degree level and above. The annex to the England national report maps ISCED codes against England's National Qualifications Framework (NQF).

[7] Research by NfER for BIS (2013; 2014) found that adults whose parents had lower than upper secondary education performed poorly, that this was the strongest association with having low skills (particularly among young adults) and that the relationship in England was stronger than in most of the other countries that participated in the survey. Additionally, research by Green et. al. (2014) found there is a greater inequality of skills in literacy and numeracy in England tan in almost all participating countries, particularly among young people aged 16-24.

Figure 3.1 – Parents' highest level of educational attainment[8] in selected countries



Source: Survey of Adult Skills (PIAAC), 2012

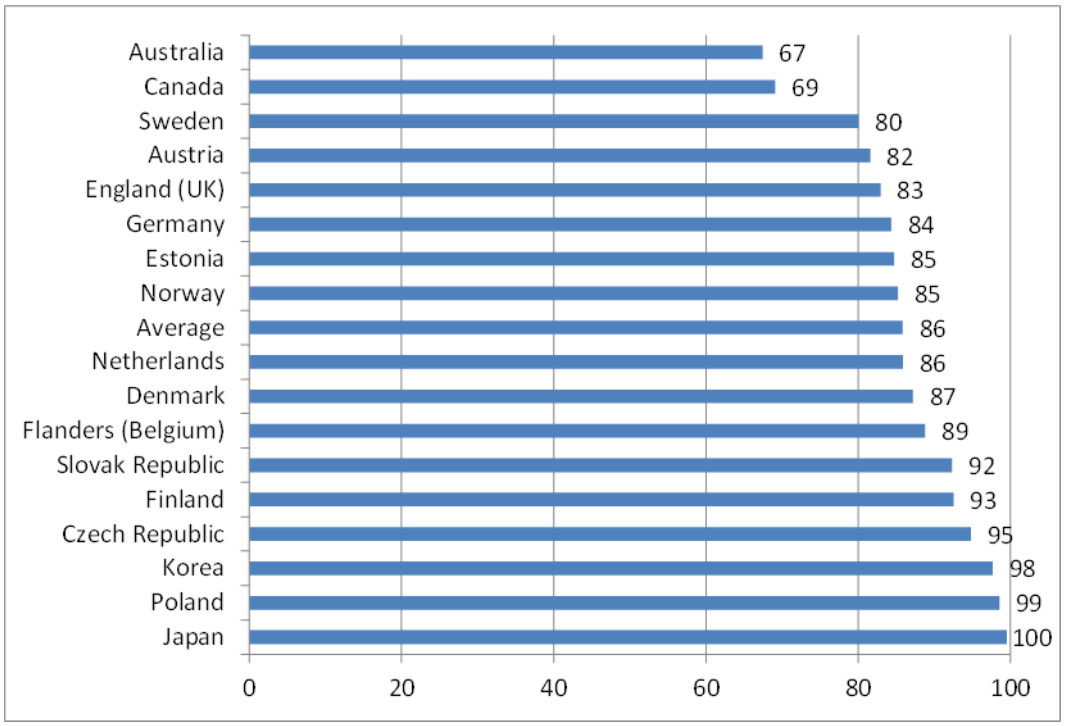
There was no common pattern by immigration status. The two highest-performing countries across all three domains – Japan and Finland – as well as the Czech Republic and the Slovak Republic, have very few immigrants (Figure 3.2). In contrast, Australia, Canada, Sweden and to a lesser extent Norway and Austria, all have relatively high proportions of foreign-born and foreign-language speaking immigrants, both compared with the average of OECD countries participating in the survey *and* with other high-performing nations. Notably, immigrants in these countries were more likely than those in lower performing nations to have at least one parent who had completed upper secondary education or higher. Among improving countries the proportion of immigrants was negligible both in Korea and in Poland (at less than three per cent).

At 17%, England has a relatively high proportion of foreign-born or foreign first-language speaking immigrants. Although this is lower than certain high-performers like Australia or Canada, it is in line with a number of other high-performing countries such as Austria, Germany, Norway, and Estonia (it should be noted the latter has a relatively high proportion of foreign-born but native-speaking immigrants). The proportion of adults who are **'domestically educated'** – that is they were either born in the country or came to it at

[8] The figures in this chart exclude Missing Values.

an age where they would have experienced at least five years of compulsory schooling – was 89% in England, similar to Norway and Sweden.

Figure 3.2 – Percentage of native born or native first language speakers in selected countries[9]



Source: Survey of Adult Skills (PIAAC), 2012

3.2.2 Education and training characteristics

Adults in most high-performing countries are more likely than the average of OECD countries participating in the survey to have **attained tertiary-level education** (Figure 3.3), with the exception of Germany, Austria, Sweden, the Czech Republic and the Slovak Republic. The latter countries have a relatively high proportion of adults who attain upper secondary level education instead. The proportion attaining tertiary education in England is above the average of OECD countries participating in the survey (36%) and one of the highest among countries included in the analysis.

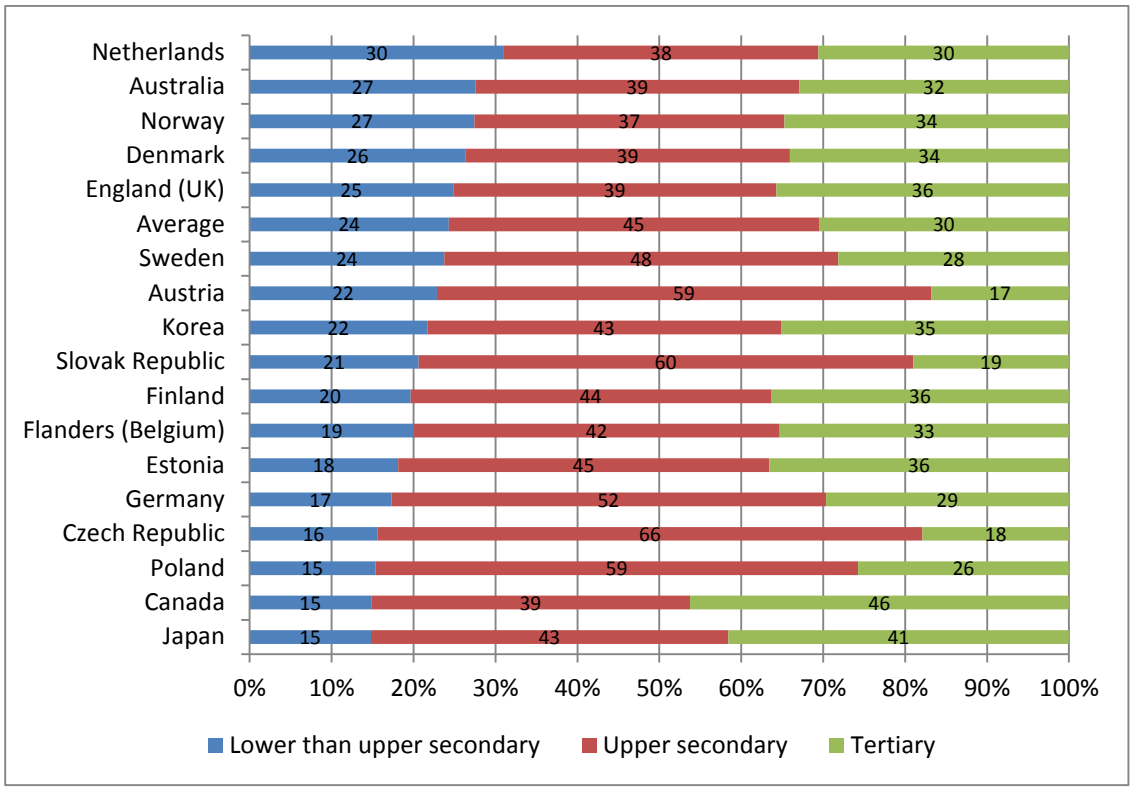
Among high performers, only Australia, Norway and the Netherlands have higher than average proportions of adults who did *not* complete upper secondary level education. England was in line with these, rather than with most of the other high-performers.

Among improvers, Poland's profile was similar to that of other improving (but higher performing) Eastern European countries like the Czech Republic, with a higher than average proportion who completed upper secondary education. Korea's profile was generally closer to the average of OECD countries participating in the survey (but with a

[9] The figures in this chart exclude Missing Values.

higher proportion having completed tertiary education). Findings on the relationship between education and skill levels are not straightforward, and this is explored further in Section 3.4, and for young people in Section 5.2.

Figure 3.3 – Highest level of educational attainment in selected countries



Source: Survey of Adult Skills (PIAAC), 2012

Adults in high-performing countries Norway, the Netherlands, Sweden, Finland and Canada were more likely than elsewhere to have **participated in formal education in the 12 months preceding the survey**, at around 25%. **Participation in adult education and training for job-related reasons within the 12 months preceding the survey** is also high among these countries, and in Denmark.

Participation in non-formal education within the 12 months preceding the survey varies more widely than participation in formal education, but is significantly above average in most high-performing countries. Participation is highest in Sweden, Finland, the Netherlands, Norway and Denmark, at around 55%, and just above 50% in Canada.

Among improving countries, participation in formal education during the past 12 months is around the average of OECD countries participating in the survey in Poland (20%) and just below in Korea (17%). Participation in training for job-related reasons is lower than in most high-performing countries, as is the proportion which has taken part in non-formal education.

At 24%, England's participation rate in formal education during the past 12 months is comparable with some of the highest-performing countries like the Netherlands and Finland. The proportion who took part in adult education and training for job-related

reasons was also relatively high (12%) and in line with many high-performers including Denmark, Finland, Norway and the Netherlands. Participation in non-formal education is also higher than the average of OECD countries participating in the survey, but lower than many of the highest performers (at 47%). Evidence from the pan-Europe Continuing Vocational Training Survey (BIS, 2013) shows that participation in work-based training is relatively high in England, although the training involved tends to involve shorter courses than elsewhere.

3.2.3 Economic characteristics

Adults in most high-performing countries are more likely to be **employed**, in particular in Norway (77%), the Netherlands (75%) and Sweden (74%), compared with the average of OECD countries participating in the survey (69%). Correspondingly, the proportion of adults out of the labour force is lower than average (25%) in most high-performing countries.

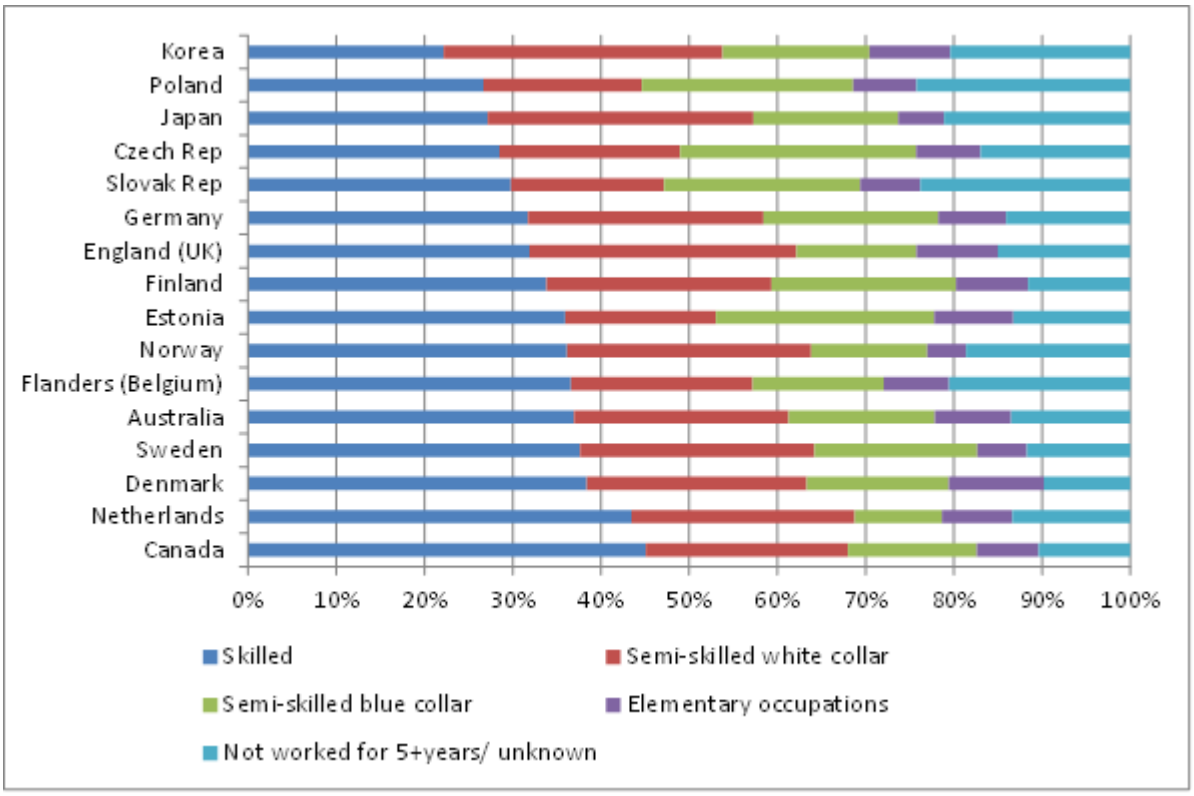
Among improvers, Poland and Korea have similar proportions out of the labour force (around 30%), but fewer people in Poland are employed (61%). Korea is in line with the average of OECD countries participating in the survey (at 67%).

England's employment rate (71%) is lower than some of the top high-performing countries, but still above average, and higher than both Poland and Korea. Around one in four (23%) are out of the labour force but this is in line with several high-performers.

Occupationally, the profile in most high-performing literacy countries leans towards **managerial** and **professional occupations**. Higher than average proportions of managers (between 11 and 13%) are found in the Netherlands, Australia, Canada, and Estonia; while Denmark, the Netherlands, Sweden, Flanders and Canada all have relatively high proportions of professionals (between 22 and 24%). The rest are at or around OECD average with the exception of Japan, which has fewer managers and professionals, and more clerical, service and sales workers.

The main difference in England's occupational profile compared with high performers is that fewer workers are in professional occupations. The proportion of skilled workers in England (32%) is closest to Germany and Finland while the proportion of semi-skilled white-collar workers is unusual, in that it is more in line with Korea (32%) and Japan (30%) rather than with other European countries.

Figure 3.4: Occupational distribution among selected countries, adults aged 16 - 65



Source: Survey of Adult Skills (PIAAC), 2012

By industry, high-performing countries tend to have a higher proportion of their workforce employed in the **public administration, education and health sectors** (particularly Norway, the Netherlands, Flanders (Belgium), Denmark and Sweden which employ between 31 and 35% of workers in this sector, compared with the OECD average of 26%). This may help to explain the higher than average participation rates in job-related training in those countries. As a whole they employ a lower proportion of their workforce in manufacturing and other industrial jobs, the exceptions being Japan, Estonia, and the Slovak and Czech Republics.

3.3 The distribution of proficiency levels in high-performing and improving countries, and in England

3.3.1 Literacy

The distribution of proficiency levels across high-performing countries is characterised by higher than average proportions of adults performing at Levels 3, 4 and 5; and correspondingly lower proportions at Levels 1 and 2. Most high-performing countries had between 51 and 60% of adults scoring at Level 3 or above, with Finland (63%) and Japan (70%) the highest. The proportion of those scoring at Below Level 1 is very low across the board, ranging between 2 and 4%.

Analysis of PIAAC by the OECD[10] has found no clear relationship between overall level of proficiency in literacy and variation in scores between the highest and lowest 5% of performers in each country. A number of countries have relatively small variations (for example, Japan (129 points) and Korea (136 points)) while those with the largest variations include high, medium and low-performing countries (for example, Sweden (163 points), Canada (163 points), and Spain (162 points)).

3.3.2 Numeracy

In high-performing countries at least half of adults scored at Levels 3, 4 or 5, peaking at 63% in Japan and 58% in Finland – compared with a third or fewer adults in the USA, Italy or Spain.

Although **variation between countries is relatively small** when comparing means (42 points separate the mean score of the highest and lowest performing countries), ***within* countries there tend to be larger gaps between the highest and lowest performers than found for literacy**. The *average* gap was 167 points, but this ranged from 143 points in the Czech Republic to 188 points in the USA. On the whole, high performing countries tend to have smaller gaps.

3.3.3 Problem solving in technology-rich environments

Most adults scored either at Level 1 (29%) or Level 2 (28%) with twice as many scoring below Level 1 (12%) as scored at the highest Level 3 (6%). The average difference in points between the 5th and 95th percentiles (among people who actually took the test) was 138. Like the other domains **there is no clear-cut relationship between the distribution of mean scores and overall performance,** with some high-performing countries showing a relatively wide distribution of scores (e.g. Japan).

3.3.4 How does England compare in terms of proficiency levels in each of the three domains?

In England, 49% of adults across all age groups performed at Levels 3, 4 or 5 in literacy, which was not significantly different from the average (50%), as was England's mean literacy score. Thirteen per cent of adults in England reached Levels 4 or 5 in literacy, which was not significantly different from some high-performing countries, but which was lower than in Japan, Finland, the Netherlands, Australia and Sweden.

For numeracy, only 41% of adults in England scored at Levels 3, 4 or 5, compared to the average of 47%. Eleven per cent of adults in England performed at Levels 4 or 5: among high-performing countries this was in line with the Czech Republic and Estonia, both of whom had a greater proportion reaching Level 3, and a higher overall mean. This compares with around 17 to 19% in most other high-performing countries.

Around a third (35%) of adults in England scored at Levels 2 or 3 in problem solving in a technology-rich environment, which was in line with the average across all countries (34%), but significantly less than that found among most high-performing countries in this

[10] OECD (2013), *Skills Outlook 2013: First Results from the Survey of Adult Skills*. http://skills.oecd.org/OECD_Skills_Outlook_2013.pdf

domain (around 40% or higher in Norway, Finland, the Netherlands and Sweden). It should be noted that this part of the assessment was optional and more people in England chose to take it than in the majority of other countries.

3.4 Key characteristics associated with high performance in high-performing and improving countries

In this section we outline the results of logistic regression analysis undertaken to identify the characteristics associated with high performance in high-performing and improving countries, and England. Further details on the results of these analyses are included in Appendix 2.

3.4.1 Literacy

Logistic regression found that, across all high-performing and improving countries, the common characteristic associated with high literacy proficiency (assessed at Levels 4 or 5) was **educational attainment**. Only this was significant in *every country*, after controlling for other characteristics.

Table 3.1 summarise the key factors in each country and highlight those that are shared across all. Several other factors were common, but not universal. For instance, the only countries where *neither* mother's nor father's level of education was a predictor were the Slovak Republic and the Czech Republic; and the only countries where employment status (being a student) was not a predictor were Japan and Norway. In addition, age was significant in all the countries except Poland, the Czech Republic, Canada and Estonia, and occupation type was significant in all countries except Japan and the Slovak Republic. Furthermore, among the top six literacy performers, having experience of computer use in everyday life was significant everywhere except Norway.

High performance in the improving countries was underpinned by similar factors. The key difference between them was that gender was significant in Korea, but not in Poland.

Table 3.1 – Characteristics significantly associated with high proficiency in literacy in high-performing and improving countries, and England

	Japan	Finland	Neths	Australia	Sweden	Norway	Estonia	Flanders	Slovak Rep	Czech Rep	Canada	Korea	Poland	England
Education	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Age	✓	✓	✓	✓	✓	✓	x	✓	✓	x	x	x	x	✓
Occup	x	✓	✓	✓	✓	✓	✓	✓	x	✓	✓	✓	✓	✓
Work status	x	✓	✓	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	x
Mother's education	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	x	✓	✓
Father's education	x	✓	✓	✓	✓	✓	✓	x	x	x	✓	✓	x	✓
Computer exp	✓	✓	✓	✓	✓	x	x	✓	x	✓	✓	x	x	✓
Gender	x	x	✓	✓	x	✓	x	✓	x	x	✓	✓	x	✓
Born in country	x	✓	x	x	x	x	✓	x	x	✓	✓	x	x	✓
Health status	x	x	x	x	x	x	✓	x	x	x	x	x	x	✓
Children in hhold	x	x	x	x	✓	x	x	x	x	x	x	x	x	x

Source: Survey of Adult Skills (PIAAC), 2012

The same regression for England found that **educational attainment, age, occupation type, gender, mother's education, father's education, being born in the host country, health, and having computer experience** were significantly associated with high literacy proficiency once other factors in the model were controlled for. These are in line with the findings of previous work by NfER (2013) exploring the factors associated with *low* literacy proficiency (i.e. scoring at PIAAC Level 1 or below), which identified lower levels of education (secondary or below); lower parental levels of education; having no computer experience in everyday life, and not having very good general health as being among the main predictors of low literacy skills. In addition, occupation, industry and ethnicity were also identified.[11]

Unlike any of the high-performing countries except Norway, employment status (being a student) was ***not*** a significant predictor of high literacy proficiency in England. This fits with the findings on proficiency by age in England, where 16-24s perform less well than older cohorts. Indeed, England was the only country included in this analysis where young people aged 16-18 and 19-24 had significantly lower odds of attaining PIAAC Level 4 or 5 in literacy than the reference category (35-44 year olds), controlling for other differences. Where age was significant in the other countries, it showed that older people aged 45-54 and 55 plus had lower odds of achieving high literacy scores, relative to 35-44 year olds.

The other key factor of note in England was that, while mother's education was a strong predictor of high literacy achievement in several high-performing countries and in Poland (with an odds ratio of 1.4 to 1.9), it was a much stronger predictor in England (with an odds ratio of 2.75). This finding is in line with similar analyses by NfER (2013, 2014) and Green et al (2014) and corroborates the key point that the influence of social class is stronger in England than in other countries.

The influence of educational attainment on high literacy proficiency

Unpacking the influence of educational attainment finds that, controlling for other characteristics, the odds of achieving high literacy proficiency compared with the reference category (lower secondary education or below) increase with education level, but not uniformly across countries:

- **Having achieved tertiary education (e.g. university or equivalent level)** is the most significant predictor of high literacy in all countries covered by the analysis (including England), but the scale of this impact varies between them. For instance, people achieving tertiary education in Canada, Sweden and Flanders are around 8 or more times likely than the lowest qualified in those countries to achieve PIAAC Level 4 or 5 in literacy (controlling for other factors). This compares with odds of around 4-5 times more likely in the other countries, including England.

- Generally speaking, people achieving upper secondary qualifications are 2-3 times more likely to attain Level 4 or 5 than the lowest qualified (including people with no qualifications), across all countries covered by this analysis.

[11] Detailed variables on occupation, industry and ethnicity were not included in the model for high level skills. Ethnicity was not collected in the majority of countries taking part in the survey and both occupation and industry have high proportions with missing values because they only relate to people who are in work.

- In all the high-performing and improving countries, there is an increase in the odds of achieving Level 4 or 5 literacy (relative to the lowest qualified), between people with upper secondary qualifications (such as A-levels or NVQ Level 3) and tertiary qualifications.

- Relative to the lowest qualified, people with tertiary education in England also have higher odds of attaining PIAAC Level 4 or 5 literacy than those with upper secondary qualifications, although the increase is less pronounced than in most of the high-performing and improving countries. In England the odds of attaining PIAAC Levels 4 or 5 are around 3.4 times higher among those with upper secondary, and around 5 times higher among those with tertiary qualifications, compared with the lowest qualified. Between upper secondary and tertiary levels in most of the other countries included in this analysis, these odds more than double between upper secondary and tertiary levels.

NfER (2014) explored the relationship between the skills tested in PIAAC, highest qualification attained, and years of education (which, in England, addresses the conflation of GCSEs with A-levels in the ISCED categorisation). Their findings showed that adults with 11 years of education (ie. those who left school at the end of compulsory schooling, with GCSE or equivalent qualifications) had lower skill levels than those who continued for *at least one additional year*, but that skill levels of those with 12 years' education or more were similar, indicating that it was continuing beyond GCSE (or equivalent) that is related to higher skill levels, rather than *how much* additional education is completed.

3.4.2 Numeracy

Logistic regression found that, across high-performing countries in numeracy, the characteristics consistently associated with high proficiency (Levels 4/5) were **occupation and educational attainment**. Gender (being male) was also a predictor in all high-performing countries except Slovakia. Table 3.2 summarises the key factors in each country and highlights the shared features.

Key similarities and differences: England

A similar regression for England identified having **computer experience in everyday life and father's education** as key predictors of high numeracy performance, in addition to **education, occupation and gender** (this combination was also found in Estonia, the Slovak Republic, and Finland). Again, these findings are similar to those identified by NfER in the England national report[12] examining the predictors of having low skills (at or below PIAAC Level 1). In addition to the variables already mentioned, having low numeracy skills was associated with a number of other factors in England including gender (being female); employment status (not employed and not looking for work); having less than 'very good' health; being of black, Asian or mixed ethnicity; and being born outside the UK or having English as an additional language.

[12] See BIS (2013), *The International Survey of Adult Skills 2012: Adult literacy, numeracy and problem solving skills in England*, Research Paper 139, for background on the International Survey of Adult Skills and specific analysis of England's performance: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/246534/bis-13-1221-international-survey-of-adult-skills-2012.pdf

Those with no experience of using a computer in England had significantly lower odds than those who did of performing at the highest levels for numeracy (with an odds ratio of 0.18 compared with those who did have computer experience). Controlling for other factors, people whose fathers were qualified at tertiary level also had much higher odds of Level 4 or 5 numeracy skills than those whose fathers were qualified at lower secondary education or below. While this was also found in a several high-performing countries such as Denmark, Estonia, and Finland, the association was much stronger in England (where the odds ratio was 2.39 compared with 1.4 to 1.6 in those high-performing countries). Again this pattern emphasises findings from other research[13], that the impact of social background (proxied by parental education level) is much stronger in England than in most higher-performing countries.

The influence of educational attainment and occupation on numeracy

This section provides further exploration of the two common strongest factors associated with high numeracy performance: educational attainment and occupation type.

Controlling for other characteristics, the odds of high numeracy at Level 4 or 5 increased with the level of education. The findings show a similar pattern to literacy:

- Having **tertiary education** (university level or equivalent) is the most significant predictor of high numeracy skills in all countries including England. Relative to people with lower secondary qualifications or below, the odds of achieving high numeracy tend to be between five and eight times higher among those with tertiary qualifications. England falls at the upper end of this range.

- Collectively, in most high-performing countries the odds of achieving high numeracy skills relative to the lowest qualified were around twice as high among people with tertiary qualifications as among those with upper secondary ones. There was a similar pattern in England.

- The 'gap' between the lowest qualified and those with upper secondary qualifications in England was higher than in most of the high-performing numeracy countries. Controlling for other factors, in England the odds of people with upper secondary qualifications achieving PIAAC Level 4 or 5 in numeracy were around four times higher than for people with no or low qualifications. This was similar to Sweden and the Netherlands, but in most of the other high performers there was a narrower gap, with an odds ratio ranging between 1.5 and 3.

By occupation, in all high-performing countries, the odds of achieving Level 4 or 5 in numeracy declined as the occupational level decreased, relative to skilled occupations.

In most high-performing countries there was either no significant difference in the odds of being highly numerate between those in skilled and semi-skilled white collar jobs (once other characteristics were controlled for), or the difference was significant, but smaller than that between skilled and semi-skilled blue collar jobs. For example, in almost all the high-performing countries, the odds of achieving Level 4 or 5 numeracy compared with those in

[13] For example, NfER (2014, forthcoming), *Comparative Analysis of Young Adults in England in the International Survey of Adult Skills*.

skilled occupations (controlling for other characteristics) ranged between 0.6 and 0.8 for semi-skilled white collar occupations, compared with 0.4 and 0.6 for blue-collar occupations.

England differed from this in that the odds ratio was similar for blue-collar and white-collar semi-skilled occupations (0.56 and 0.54 respectively). Generally, the numeracy 'gap' between people in skilled and semi-skilled white collar occupations was larger in England than in any of the high-performing countries. Relative to skilled occupations, people in white collar semi-skilled roles in England had lower odds of achieving Level 4 or Level 5 than in any of the high-performing countries except Sweden.

Table 3.2 – Characteristics significantly associated with high proficiency in numeracy in high-performing countries, and England

	Japan	Finland	Neths	Sweden	Norway	Estonia	Flanders	Czech Rep	Slovak Rep	Denmark	Germany	Austria	England
Education	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Occup	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gender	✓	✓	✓	✓	✓	✓	✓	✓	x	✓	✓	✓	✓
Work status	✓	✓	✓	✓	✓	✓	x	✓	✓	✓	x	x	x
Age	x	✓	✓	✓	✓	x	✓	✓	x	✓	x	x	x
Mother's education	x	✓	✓	✓	✓	✓	x	x	x	✓	✓	✓	x
Father's education	x	✓	x	x	✓	✓	x	x	✓	x	✓	x	✓
Computer exp	✓	✓	x	✓	x	✓	✓	x	✓	✓	✓	✓	✓
Educated in country	x	x	x	x	✓	x	x	x	x	x	x	x	x
Born in country	x	✓	✓	✓	x	x	x	x	x	✓	✓	✓	x
Health status	✓	x	x	✓	x	x	x	x	x	✓	x	✓	x
Children in hhold	x	✓	x	x	x	x	x	x	x	x	x	x	x

Source: Survey of Adult Skills (PIAAC), 2012

3.4.3 Problem-solving in technology rich environments (PS-TRE)

Logistic regression found that, across all the high-performing countries, the common characteristics associated with proficiency in PS-TRE (at Level 2 or 3) were **education, occupation, age, and computer experience**. Table 3.3 summarises the key factors in each country and highlights the shared features. Not having children was a predictor of high proficiency in PS-TRE – but not in literacy or numeracy – in Finland and Japan.

Table 3.3 – Characteristics associated with high proficiency in problem-solving in high-performing countries, and England

	Japan	Finland	Neths	Sweden	Norway	Australia	England
Education	✓	✓	✓	✓	✓	✓	✓
Age	✓	✓	✓	✓	✓	✓	✓
Occupation	✓	✓	✓	✓	✓	✓	✓
Comp Exp	✓	✓	✓	✓	✓	✓	✓
Emp status	✓	✓	✓	x	✓	✓	✓
Gender	✓	✓	✓	✓	✓	x	✓
Mother's education	x	✓	x	✓	✓	x	✓
Father's education	✓	✓	✓	x	✓	x	✓
Born in host country	x	✓	✓	✓	✓	✓	✓
Health	x	x	✓	✓	✓	✓	x
Whether has children	✓	✓	x	x	x	x	✓

Source: Survey of Adult Skills (PIAAC), 2012

Key similarities and differences: England

In any comparison of PS-TRE skills it is important to bear in mind the point that more people in England opted to take this part of the assessment, than in many of the other participating countries, including those which performed more highly. The fact that a wider base of people in England opted to take this part of the test may influence the result that those who did had lower than average skills.

A similar regression for England found *both* **mother's and father's education**, and **not having children**, to be significant predictors of proficiency in this domain as well as the common variables **computer use in everyday life, education, gender (being male) and occupation type (working in a skilled job)**. In addition, and similar to the high-

performing countries with a relatively high proportion of immigrants, people born outside the host country were less likely to perform at Level 2 or 3 in the PS-TRE assessment. Regression findings on the probability of having *low* PS-TRE skills in England also identified having poor general health; being aged 45-65; and being of Black ethnicity as predictors[14].

Interestingly, in England people who were not working had significantly lower odds of being proficient in PS-TRE once other factors were controlled for: the only high-performing country where this was also the case was the Netherlands.

Influences on performance in PS-TRE

The regression identified a range of factors which influenced the odds of proficiency in PS-TRE once other factors were controlled for:

- Like literacy and numeracy, educational attainment was the strongest predictor. People with **tertiary qualifications** had the highest odds of attaining Level 2 or 3 proficiency, compared to those with lower secondary, or no, qualifications. This ranged from around 2.4 times higher in Australia to 4.6 times higher in Sweden (in most high-performing countries the odds ratio ranged between three and four).

- The pattern in England was similar for tertiary qualifications (being around three times more likely to achieve Level 2 or 3 proficiency than those with no or low qualifications, once other characteristics were controlled for).

- In all the countries, the odds of proficiency were *lower* among the over-55s compared with those aged 35 to 44; among women compared with men; and among those who did not use a computer in everyday life.

- In most of the high-performing countries except Japan, full-time students had higher odds of PS-TRE proficiency (once other characteristics were controlled for) compared with those who were working. Being a student was not significantly associated with higher proficiency in England, but employment status as a whole was, as those who were not working (e.g. unemployed) had significantly lower odds of achieving Levels 2 or 3. Among the high-performing countries this also applied to the Netherlands.

- The odds of PS-TRE proficiency increased among those whose parents had attained upper secondary or tertiary education, but there were few differences between the high-performing countries and England.

[14] See BIS (2013), *The International Survey of Adult Skills 2012: Adult literacy, numeracy and problem solving skills in England*, Research Paper 139, for background on the International Survey of Adult Skills and specific analysis of England's performance: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/246534/bis-13-1221-international-survey-of-adult-skills-2012.pdf

4. Basic skills delivery

Key findings

Adult basic skills delivery varies between high-performing and improving countries and the system in each case study country reviewed here differs in key respects to that in England. For all the differences in systems, governments in the case study countries share a similarity in focus with England. For example, most governments are designing provision for the same target groups, such as low skilled people in employment, the unemployed and immigrants. It is also generally true that provision is taken up by groups which are easier to reach; and that low skilled adults (for example, retired people or older women) who do not belong to groups which are a political priority may miss out on learning. In all countries, there is a trend towards offering more workplace provision, with employers encouraged to play a role by matching funding and ensuring that skills training is linked to the needs of their workplace.

Little robust evaluation data is available on adult basic skills programmes in the countries under review. Canada is an exception to this, and has developed a strong research culture on workplace learning. A recent RCT on workplace Literacy and Essential Skills programmes (Gyarmati et al., 2014) found significant positive impacts, and good evidence of return on investment, in the presence of government subsidies.

High-performing and improving countries have above OECD average use and availability of technology. Having computer experience in everyday life was a significant predictor of high literacy and numeracy performance in many of the high-performing countries in those domains, as well as being a universal predictor for proficiency in PS-TRE. The OECD's own analysis found that (with the exception of Japan) there is also a link between high individual performance in literacy and numeracy, and high individual proficiency in PS-TRE.

In Canada, the Netherlands, and Norway, as in England, there have been a number of recent policy initiatives focusing on increasing digital access, skills, and services. Although technology is increasingly incorporated into compulsory education, little robust evidence emerged on its effective use in basic skills programming, with few lessons for England as a result. Use of technology with this learner cohort is often based on assumptions of what works with adult learners, rather than on solid research evidence. Experience from the Netherlands and Germany suggests that online learning platforms *can* engage adult learners in large numbers, but that there are challenges in sustaining this engagement through to completion of the course.

It is likely that efforts to promote the use of technology in adult basic skills education in the case study countries may lag behind similar measures in England, where there is wide cross-sector policy interest in the use of technology in learning provision.

This chapter focuses on the basic skills delivery landscape in high-performing and improving countries. Section 4.1 provides an overview of basic skills policy and provision in the four case study countries, and also draws on evidence from the REA. Sections 4.2-4.4 move on to discuss the possible impact of technology on national performance in the Survey of Adult Skills and considers the evidence on how technology is used to support basic skills delivery in high-performing and improving countries. Additional detail for each section can be found in the four case study country reports (Appendix 1).

4.1 Basic skill policy and provision: overview

Adult basic skills policy and provision varies considerably across the four case study countries. Each basic skills system (or sector, where no system exists) differs in the coherence, coordination and consistency of approach, the level of centralisation, the division of responsibility between ministries, the extent to which adult basic skills are prioritised the within wider education and skills remit, the level and structure of funding, and the split between public and private provision of programmes. In both the Netherlands and Canada, the system is more devolved than it is in England, with priorities decided on the ground. In England, one government ministry, the Department for Business, Innovations and Skills, has responsibility for all basic skills issues, including language education programmes for immigrants. This is not the case in all countries. In the Netherlands, for example, language programmes are tied to immigration policy and fall under the oversight of a different ministry to adult literacy and numeracy. Some of the implications of this are explored in Chapter 6 of this report. In Norway, the splits are even more complicated, with the low skilled cohort addressed by three difference ministries (those for education, for employment and for inclusion).

The limited amount of evaluation data on policy initiatives and large-scale programmes, makes it is difficult to draw conclusions on what works best at a systemic level. There is a particular lack in comparative work, for example evaluations comparing the effectiveness of programmes for mandated and non-mandated learners. However, some lessons can be drawn and are offered in Chapter 6, in which the strengths and weaknesses of each system are explored in greater depth.

An overview of the different systems does highlight some lessons for policy makers in England grappling with these issues.

- A key point of similarity between countries is the desire to involve employers in co-funding some of the training and ensuring that the content of any training is matched to current workplace needs. The Republic of Korea for example, places great emphasis on the importance of the content of training matching the demands placed on employees' skills in the workplace.
- While supply of provision is of central importance to all of the countries studied, demand for skills training is also of concern. Here the Canadian experience provides a note of caution, stressing that in order to make appropriate decisions about the training offer, employers need to be educated about the benefits of basic skills training, especially when the basic skills offer is in competition with other kinds of workplace training. It is also apparent that employers expect such training to be subsidised.

- There appears to be a trend for governments to focus on more workplace programmes. This is in keeping with the understanding (see Section 2) that the low-skilled population is more likely to be employed than unemployed; it also is in keeping with what is known about skills decline over time and the need to use skills or lose them.
- However, a focus on workplace programmes can result in fewer programmes for other learners, especially where overall adult skills budgets are reduced. Family and community learning initiatives are particularly under threat. This may reflect a lack of understanding in some areas of government with education and training portfolios of the wider benefits of adult basic skills learning. In Norway, evaluation evidence is more typical of that found in Scotland, where programmes are judged on participation, learner satisfaction, and programme impacts on non-cognitive characteristics such as self-confidence, self-concept and everyday practices.
- From Canada we get the best evidence of the effectiveness of workplace programmes and a model for how England might calculate return on investment. From Norway we have a good example of a successful workplace programme, Basic Competence in Working Life (BKA).
- There is an explicit focus on programmes to improve the language skills of immigrants. However, despite evidence from the PIAAC data that this group are also more likely than the rest of the population to struggle with literacy, few programmes provide sufficient emphasis on literacy, as opposed to language skills. It is also true that many such programmes are linked to immigration status, reducing their ability to meet the specific learning needs of the immigrant population.
- Initiatives do not tend to last very long (the BKA is an exception to this rule). They are subject to changes of government as well as changes in policy priorities. The economic downturn has also impacted on this policy areas as in others.

A clear message that emerged from the case study interviews was that adult basic skills policy and programming in England was regarded as an exemplar. The latest Dutch plans for improving basic skills draw extensively on England's experiences with the Skills for Life programme; the new Canadian skills minister overseeing the changes in the system has been on a fact finding trip to England (and Germany) to gain insights into skills training schemes and innovative approaches, and in Norway interviewees cited the English professional standards for teachers and the quality of provision.

4.1.1 Case study countries

Canada

In Canada's federal structure, constitutional responsibility for education and training is held by the 13 provinces and territories. The total budget for Literacy and Essential Skills (LES) programming controlled by the federal government is small; the bulk of LES is funded, directed and evaluated at provincial level. The federal government is responsible for some policy areas – for example, language acquisition programmes for immigrants/newcomers. The government also funds Labour Market and Training Development on a large scale for Aboriginal Canada – and these programmes primarily focus on skills gains.

At the provincial level, there is an additional 'system' (more accurately described as a sector or sub-sector) for adult literacy programmes and projects. These are funded in

hundreds of different ways through hundreds of different organisations. Some provincial provision is sophisticated and some is not; some is organised from a community participation perspective, some from a social justice perspective and some from a labour force development perspective. Funding is drawn in a number of ways: some comes from federal funds, but provinces can raise funds themselves, and there are philanthropic initiatives. None of this provincial provision is organised in a way that would make it a recognisable system. Rather, it is a highly heterogeneous sector characterised by individual and/or isolated projects rather than coherent, coordinated policies and programmes.

While the provincial nature of Canadian education and training provision makes it difficult to provide a brief overview of adult basic skills policies and programmes, there are some consistencies at the federal level. In terms of the purposes of basic skills, the federal government emphasises labour market preparedness and outcomes. Central government now provides little support for family, community, or health literacy initiatives – all of which were once important policy interests. There is greater interest in such initiatives at the provincial level, but funding for them is limited.

A particularly important policy shift in recent years has been the introduction of the Canada Job Grant, through which the federal government has sought to shift policy emphasis from the suppliers of training to demanders of training, particularly employers. A primary aim of this policy is to increase employer demand for basic skills training, and thereby potentially reduce lifecourse related skills decline. Currently, employers invest very little in adult basic skills training compared to other kinds of learning. The Canada Job Grant matches employer investment in basic skills training with funding from central government – and as this funding goes directly to employers rather than to providers, employers are responsible for buying in training, rather than providers being responsible for finding learners. However, experts interviewed for this research (see Appendix A1) indicated that the impact of this policy change has been limited to date, and that this stems from employers' lack of knowledge of how to use the funding to access training.

Noting that 75% of Canadians with low basic skills are employed, Canada's Social Research and Demonstration Corporation (SRDC) has recently completed a large and methodologically rigorous Randomised Control Trial (RCT) of workplace LES programmes (Gyarmati et al., 2014). This demonstration project sought to test the effectiveness of workplace programmes by measuring their impacts on workers and firms, and estimating return on investment (ROI). As discussed in greater detail in Appendix A1, the study found significant positive impacts of the programme, and good evidence of return on investment, in the presence of government subsidies. As Wolf et al. (2010) argued in the context of England, such subsidies may be necessary in order to sufficiently stimulate employer demand for workplace basic skills programmes. In England, at least, employer demand has waned in the absence of such subsidies.

At the time of conducting research for this study, important policy developments were happening in Canada, which are likely to have significant implications for a range of policy stakeholders. These changes are not explicitly connected to PIAAC; instead, they are driven by broader policy trends associated with the economic crisis and the policy direction of the Conservative majority government. Changes include de-funding of the national bodies that seek to link policy, practice and research across provinces and the de-funding of much research, even in areas of particular policy interest, such as workplace LES, and

even in light of promising findings regarding the potential impacts of workplace programmes such as the Upskill initiative (Gyarmati et al., 2014). One Canadian policy expert suggested that this de-funding is likely to undercut the government's efforts to increase demand for basic skills improvements.

The Netherlands

The Netherlands' Ministry of Education, Science and Culture is responsible for adult basic skills provision, including language courses for adults learning Dutch as a second language. Under recent Dutch law, new immigrants are required to pass a Dutch language exam within three years of arrival, and leave to remain in the country is linked to passing the exam. As this aspect of adult language courses is explicitly linked to immigration and naturalisation policy, it comes under the oversight of the Ministry for Social Affairs.

Basic skills provision was formerly organised at a national level, but has recently been devolved to the Netherlands' 400-plus municipalities, which receive funding from central government to purchase and provide education services in whatever mix the municipality deems appropriate. This devolution is part of larger devolutionary trends across a range of policy areas. In all municipalities, private providers play a central role in basic skills provision: about 10-15% of adult education programmes are provided by regional education centres and the rest by private companies.

While Dutch education policy has not traditionally favoured targeted provision for particular groups, municipalities may ask for programmes for at-risk groups. These groups, and the objectives of the programmes, may differ across municipalities. For example, in Rotterdam, unemployed people who fail a Dutch literacy test are required to attend courses (where they learn alongside adults learning voluntarily) or have their welfare benefits reduced. Mandatory provision is seen as a valid and perhaps essential means of stimulating demand and improving skills (*Coalitieakkoord Rotterdam*, 2014-2018). In Amsterdam, in contrast, there is no such requirement and attendance is voluntary. There is, however, no quantitative evidence on the impacts of these different approaches. Some municipalities favour a focus on provision that emphasises literacy practices and learner engagement, while others focus more on skills for employment. These differences tend to be driven by political values. For example, provision in Amsterdam tends to focus on more 'left-wing' values, such as social inclusion and family literacy practices, while provision in Rotterdam emphasises skills for employment.

Recently, the 'Low Literacy Action Plan, 2012-15' was published. This lifelong literacy plan is a continuation of previous action plans, albeit with significantly reduced budget. Drawing on extensive studies of England's Skills for Life strategy, including consultations with experts in England, the strategy has three main focuses: 1) promoting literacy among young people in order to prevent future problems; 2) promoting improved skills for low literacy adults, and 3) improving programme evaluation.

For the future, the Netherlands is working on a new law to combine the social welfare and adult education budgets into a budget for the 'social domain'. In principle, this should contribute to joined-up policymaking and programme development. In practice, however, stakeholders fear that, with rising unemployment, funds that are not ring-fenced for basic skills will be used for employment programmes or social benefits.

Norway

In Norway, adult learning is a statutory right. This includes the right to free primary education for adults who need it, including guidance to assess the individual's needs. Adults over the age of 25 who have not already completed their upper secondary education have the right to complete upper secondary education in accordance with the national curriculum. However, one Norwegian expert argued that while the supply of basic skills education is guaranteed as a statutory right, and while this statutory right can help to stimulate learner demand, the quality of the education available is not always sufficiently high.

Validation of prior learning is a right for those with a right to primary or secondary education. The length and scope of adult education and training is then adapted to this prior learning as well as the participants' specific needs (OECD, 2014). All adults have the right to get their working experience and knowledge acquired through non-formal and informal learning evaluated and validated. The validation process often leads to a partial or complete certificate of upper secondary education.

Providing equal access to lifelong learning for all adults in the country is an important principle of Norwegian educational policy, and there is a strong focus on adults with low levels of education. Their involvement in lifelong learning activities is promoted with a threefold objective: (1) to enhance the quality of life of the individual; (2) to benefit society by ensuring active citizenship, and (3) to serve the interests of the country's economy by increasing adults' employability.

Although the central government in Norway sets the goals and framework for the educational system in compulsory and further education, responsibility for provision sits with the municipalities. In terms of coherence and coordination, the adult learning sector is complex:

- Primary and secondary education fall under the remit of the Ministry of Education and Research and the Directorate of Education:
  - secondary education is administered by the county council
  - primary and lower-secondary education are administered by the municipality,
- Re-skilling and employment activation training falls under the remit of the Ministry of Labour and the Norwegian Labour and Welfare Administration (NAV) ,
- Norwegian language training for migrants falls within the remit of the Ministry of Children, Equality and Social Inclusion and the Directorate for Integration and Diversity, and
- The Agency for Lifelong Learning (Vox) has the administrative responsibility for the Programme for Basic Competence in Working Life (BKA). The agency also coordinates career guidance and is in charge of curricular and pedagogical issues relating to the teaching of Norwegian and socio-cultural orientation to adult immigrants (OECD, 2014, p. 138-139).

Norway has a well-developed programme for providing workplace basic skills training for employees. The Basic Competence in Working Life (*Basiskompetanse i arbeidslivet* [BKA]) programme seeks to give adults the opportunity to acquire the basic skills they need to keep up with the demands and changes in modern working life and civil society.

The BKA is funded by the National Budget via the Ministry of Education and Research, and is administered by Vox, the Norwegian Agency for Lifelong Learning, which is part of the Norwegian Ministry of Education and Research. Funding and participation in the BKA programme have increased every year since the programme was established in 2006, with the number of participants now exceeding 30,000. Special efforts are made to include small to medium sized enterprises (SMEs) in the programme and to encourage applications from industries which employ people with relatively low formal skills. The programme concentrates on reading, writing, numeracy, and digital skills. Beginning in 2014 the BKA also includes oral communication in combination with other skills. Any enterprise in Norway, private and public, can apply for funding. The programme emphasises the following criteria:

- Learning activities should be combined with work, and basic skills training should preferably be linked to other job-relevant training, and
- The courses should increase participants' motivation to participate in additional learning.

The BKA is seen as one of Norway's key mechanisms for stimulating demand for improved basic skills, both from employers and employees. The BKA is viewed as expensive but successful, and as an example of Norway's typically collaborative approach to policy and programme development. Firms work with providers to create tailored programmes for literacy, numeracy and digital skills which are specific to the needs of the employees in that company. The BKA places great emphasis on the relevance of basic skills training to the specific, situated practices of individual workplaces. This means that courses are of varying length, time of day, and focus.

Tripartite cooperation between social partners and government is strong in Norway, and has been a key driver of reforms in adult education, including basic skills. In addition to providing adults with the right to education, these reforms have led to higher programme funding, employees' right to educational leave from work, and tax exemption when education is paid for by the employer. Throughout the Norwegian education system, the emphasis is on trust and 'soft accountability' rather than quantitative measures of accountability. Adult basic skills programmes, whether in the classroom or workplace, are assessed not on the basis of skills gains or qualifications gain for participants, but with regard to other metrics, such as participation, satisfaction, and impact on factors such as confidence and everyday practices.

Korea

Following Japanese occupation and the Korean War, a large percentage of the Korean adult population was illiterate. The Korean government expanded the education system rapidly in the 1950s and 1960s, and provided a large amount of adult literacy training (Byun et al., 2011). After this initial focus on improving national literacy levels, the Korean government largely withdrew from the sector, leaving it primarily to private providers. At the start of this century, however, the Korean government began to take a renewed interest in adult literacy education. A primary objective of central government policy and funding is to encourage local and regional collaboration across the full range of stakeholders, including local government, NGOs and private providers. The National Institute for Lifelong Education (NILE) is the key body in terms of planning, executing and evaluating adult literacy programmes.

Key recent policies include the Second National Lifelong Learning Promotion Plan, which contained two major priorities with regard to adult literacy: (1) to systematise and improve adult basic skills education and (2) to 'establish a lifelong learning safety net for newly increasing underprivileged groups including married immigrant women, migrant workers, and North Korean defectors' (Unesco, 2009, p. 100). To improve adult literacy provision, the Plan proposed a number of strategies including:

- Expanded learning opportunities for low-educated adults,
- Improved quality of literacy education programmes, and
- Certification of participation in adult literacy programmes, through the conferral of elementary and middle school degrees[15].

Despite these policy developments, adult literacy remains a marginal field in Korea. Since 2011 government funding for adult literacy has decreased. Korea's education system is very much concentrated on compulsory and higher education, with few learning opportunities for working-age adults. Although Korea has the OECD's highest university enrolment rate amongst 16-24-year-olds, the rate of participation in adult education is among the lowest in the OECD. In 2009, the rate for 25-64 year olds was 28% in formal and non-formal education combined, and 4% in formal education only (Bae et al., p. 185). Looking beyond the education system, Korea has one of the lowest female labour participation rates (55%) across OECD countries (OECD, 2014). This is driven by a range of factors, including labour market policy, childcare and support policy, social and cultural values, and some of the world's longest working hours, which make it difficult to combine employment with family responsibilities.

The lifelong learning opportunities that do exist are heavily biased towards the more highly skilled: Korea has large adult education participation gaps based on qualifications, age, employment status and gender. There are fewer lifelong education opportunities for low-skilled, older people and women. Experts interviewed for this study argued that there is therefore a need to increase the participation rates of these disadvantaged groups – and these are the groups that the Ministry of Education has promised to target following PIAAC.

Adult literacy policies and programmes in Korea typically target specific groups. Efforts to stimulate demand have focused almost exclusively on women. Some outreach efforts have focused on older women with limited formal schooling, while other efforts have focused on younger women, such as immigrants (Byun et al., 2011). There have thus far been few efforts to stimulate demand from men, or from employers. Key programmes include the:

- Information Education Project for the Illiterate, which focuses on adults who have difficulties using ICT,

[15] This approach is in line with a more general Korean cultural valorisation of educational credentials and success. It is also seen as addressing an unfavourable imbalance in the education system: while a student attending a primary or middle school could acquire the requisite diploma without passing a graduation examination, adults were required to pass examinations in order to achieve the equivalent diplomas.

- Literacy Education for Married Immigrant Women, which is targeted at foreign women living in Korea but who are married to Korean men. The project helps to fund Korean language textbooks, teachers, job skill development training and ICT training, and
- Korean Language Education through Social Integration Credit System, which is aimed at foreigners who want to become naturalised Koreans. It provides basic education in the Korean language, Korean culture and Korean society. Foreigners who complete this programme are exempt from a written examination normally required to acquire citizenship.

Each of these three programmes is run by a different government ministry. As noted in Appendix A4, neither the literature review nor consultation with Korean policy experts revealed examples of rigorous evaluations of these or other programmes.

4.1.2 Other high-performing and improving countries

Of the four other countries examined during the REA stage of this project, only Germany has well-developed and documented adult basic skills policies and programmes. In the cases of Japan and Poland, no English-language literature describing or evaluating adult basic skills programmes was identified during the REA.

Estonia

In Estonia, the educational offer has, in recent years, become more flexible and diverse – for example, through the introduction of shorter training programmes and through an influx into the sector of private education providers (Saar et al., 2013). Many of these private providers offer their services, including compensatory education, to disadvantaged adults. According to Saar et al., adult gymnasiums (that is, special schools for adults) tend to be supportive, with a high focus on facilitating persistence amongst learners who might otherwise drop out. In contrast to the 'conveyor belt' system that Saar and colleagues conclude characterises compulsory education, adult gymnasiums typically offer a more individualised, slower-paced approach to learning.

Saar et al. (2013) argue that although Estonia has an efficient and effective compulsory education system, with outcomes above the EU15 average, the adult learning system is underdeveloped, with 'a lack of education and training provision' (p. 372). Within this context, however, adults with poor skills can study at adult gymnasiums free of charge. According to Saar et al., a large percentage of individuals enrolled in adult secondary schools come from disadvantaged backgrounds, and many are in the 18-25 age group. One English-language study of adult literacy programmes in Estonia was identified in the REA, an assessment of the literacy skills of young people (18-25) studying in adult gymnasia, but this study was of a poor methodological quality (Varik, 2013).

Germany

Germany was one of five countries where literacy scores were lower in the Survey of Adult Skills (PIAAC) than in IALS. (The others were Denmark, the Netherlands, Norway and Sweden.) In 2012, the Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung*, [BMBF]), along with the Conference of Ministers of Education and Cultural Affairs, announced a joint 'National Strategy for Literacy and Basic Education of Adults'. (As with the new Skills for Life strategy in the Netherlands, this programme was launched too late to influence PIAAC results.) The BMBF also launched a new initiative on

workplace-oriented research and development in the area of literacy and basic education, with funding of approximately €20 million for the period 2012 to 2015. The aim is to develop more effective adult literacy programmes. The funding priority is split into three areas:

1) Workplace-oriented literacy and basic education,
2) Counselling and training for key stakeholders in the working world and in the daily life of those concerned, and
3) Training and professional development for tutors in education programmes.

Japan

The research team was unable to find English-language literature providing information on adult basic skills delivery in Japan. A number of requests for information from Japan's PIAAC expert, including a request from BIS, yielded no response.

Poland

The research team was unable to find English-language literature addressing adult basic skills delivery in Poland. This was despite very helpful support from a number of in-country lifelong learning experts in Poland. These experts were able to provide the research team with material on general adult education, but confirmed the REA's conclusion that there is, as yet, no English-language research or policy literature addressing adult basic skills in Poland.

4.2 Is high-level or improving basic skills performance linked to higher use of technology?

Logistic regression found that **computer experience in everyday life** was a significant predictor of literacy performance in Australia, the Netherlands, Japan, Sweden, Finland, Czech Republic and Canada (although interestingly, it was not a predictor for the fast improving countries of Korea or Poland). In addition, it was a significant predictor of numeracy performance in Flanders (Belgium), Denmark, Estonia, Sweden, Finland, Japan and the Slovak Republic, as well as England (see Chapter 3). It was a universal predictor for proficiency in PS-TRE.

The OECD's own analysis of ISAS data found that (with the exception of Japan) there is a link between high individual performance in literacy and numeracy, and high proficiency in problem solving in technology-rich environments (OECD Skills Outlook 2013, p 94):

> *On average, individuals scoring at Level 3 on the problem solving in technology-rich environments scale score at Level 4 on the literacy and numeracy scales. Those who score at Level 2 on the problem-solving scale score at Level 3 on the literacy and numeracy scales; and those who score at or below Level 1 on the problem-solving scale score at Level 2 in literacy and numeracy.*

The **proportion of adults with access to a computer** was significantly higher than average among most high-performing countries in problem-solving in a technology-rich environment, typically at 95% or above. This compared with relatively low proportions in Italy (75%), the Slovak Republic (78%), Poland (81%) and Spain (83%).

There is a positive relationship between the frequency of carrying out ICT practices in everyday life and at work, and literacy and numeracy proficiency (for example, OECD Skills Outlook shows that the frequency of using ICT skills at home and at work is related to higher scores across all the domains[16]). However this pattern cuts across both high and low-performing countries, so it is difficult to draw any conclusions on the association with high performance overall.

Although countries that were high-performing in PIAAC tend to have higher than OECD average proportions of households with access to computers, there was no research in the REA evidence base exploring the associations between levels of technology use and adult skills, and national experts were unable to point to any relevant research findings. Although all the countries under review have experienced large increases in technology use over the last two decades, no country has attempted a broad-scale use or imposition of ICT in adult basic skills classrooms (see 4.4 below), so the impact of technology on adult learners remains untested. Korea has been a world leader in the introduction of technology into primary and secondary school classrooms (EU-HLG, 2012), but this has been too recent a phenomenon to impact on adult skills levels.

As in England, in the case-study countries there have been a number of policy initiatives in recent years focusing on: 1) increasing digital access; 2) ensuring the population is equipped with basic digital skills; and 3) digitising public services. For example, the federal government in Canada is looking to deliver services online, and the Netherlands has a commitment to digitise public services by 2017, in strategies that have much in common with the 'digital by default' strategy that was launched by the Westminster government in 2013[17]. In Norway, public services are also being digitised, but there is concern that the very elderly (80 years and older) are being excluded by these initiatives.

4.3 How are technologies used in high-performing or improving countries?

Although Canadian performance in literacy and numeracy was around the OECD average, performance in PS-TRE was higher than average, and markedly so for the youngest cohorts. This performance was unsurprising and consistent with measures on improving access to technology. Canada is a wealthy country where digital technologies are readily available, costs have substantially reduced, and Canadians are early adopters – the social rewards to digital literacy are high. According to the 2013 Canadian Internet Registration Authority (CIRA) Factbook[18] Canada has one of the highest Internet penetration rates in the world, and Canadians spend more time online than anybody else in the world (an average of 45 hours/week), although levels of digital literacy vary between populations and provinces. Like other countries, Canada has instituted policies to encourage more widespread internet connectivity, particularly in rural and remote communities. It is unclear how effective these policies have been relative to those in other countries. In fact, some commentators have criticised the Canadian government in recent years for not doing

[16] OECD (2013), *Skills Outlook 2013: First Results from the Survey of Adult Skills*. http://skills.oecd.org/OECD_Skills_Outlook_2013.pdf
[17] See https://www.gov.uk/government/publications/government-digital-strategy/government-digital-strategy#executive-summary
[18] See http://www.cira.ca/factbook/2013/canada-online.html

enough, especially relative to other countries[19]. In education, there have been a range of policies designed to increase access, for example by bringing broadband to all schools and libraries, and significant efforts have been made to adapt school curricula to include technologies.

One Norwegian expert suggested that ICT is under-utilised in the Norwegian education system, despite the fact that Norway is a wealthy, digitally-advanced country. The 'Knowledge Promotion Reform' (*Utdanningsdirektoratet)*, a comprehensive school reform, was introduced in 2006 and covers learning across all ages and levels, including adult basic skills. Through this, digital competence was integrated as a basic skill in all formal education in Norway, and an expectation was set that ICT-based educational tools would be used at all levels and in all subjects. The Norwegian Centre for ICT in Education was established in January of 2010, to contribute to the realisation and the development of ICT policy at all levels of education and for all target groups.

Korea is seen as a global leader in high-speed broadband access: one expert cited a Korea Internet Security Agency report (2010) showing that 96.5% of Koreans aged 15-49 were using high-speed internet. In the fifth annual report from the International Telecommunication Union (2013) on Measuring the Information Society, which ranks countries' performance with regard to ICT infrastructure and uptake (ICT Development Index [IDI]) and the cost and affordability of ICT services (ICT Price Basket [IPB] metric), the Republic of Korea topped the IDI 2012 for the third consecutive year[20]. In the Republic of Korea, over 97% of households have access to the Internet (in the Netherlands this is 94%, and 93% in Norway).

Korea is also a leader in the incorporation of digital technologies into compulsory education. Korea has a relatively strong ICT infrastructure, and is considered a world leader in the digitalisation of education. In 2013, digital textbooks for social studies and science were adopted in 144 schools (78 elementary schools, 54 middle schools, 12 high schools) and will be expanded gradually into other schools. At home, the government implemented a 'cyber home learning system'. This programme aimed to reduce the very high level of household expenditure on private tutoring and, as a corollary, reduce inequities in educational opportunities.

4.4 Are there any innovative delivery methods using technology which could be applied in an English context?

Neither the REA nor the in-depth case studies revealed broad-scale technology-based basic skills delivery methods. While all countries can point to examples of blended learning – where online learning is combined with face-to-face teaching in adult basic skills classrooms – there were no apparent examples of major policy initiatives. For example, a senior civil servant reported that although federally there will have been niche efforts

[19] See for example, Lack Of Rural Broadband Access Creating Divide Among Canadians (http://www.huffingtonpost.ca/2013/12/09/broadband-internet-rural-_n_4412618.html) and Status of Broadband Connectivity in Canada: The Need for a National Strategy and Clear Standards of Service (http://www.nordicity.com/media/20131212emvdujek.pdf).

[20] Korea was closely followed by Nordic countries (including Norway at 6) and the Netherlands (7) and the United Kingdom (8) were also in the top ten: 157 countries are included in the IDI for 2012. Canada was ranked at 20.

targeted at particular segments of the population (e.g. by geography or characteristics or occupation) nothing very broad or wide scale had been implemented in Canada. Although there are now more municipalities supporting adult basic skills in their local area through 'lifelong learning cities', the Korean government has not applied either large-scale resources or technological support to delivering basic skills programmes.

This lack of evidence is in keeping with findings from an NRDC-led review of evidence on the value of learning technology to adult basic skills delivery (BIS, forthcoming). Although examples of good practice in innovative delivery using ICT in this sector exist, very little high-quality evidence was found from which to draw conclusions on the relative effectiveness of various ICT approaches. In addition to its methodological limits (small, non-representative populations; over-reliance on qualitative self-report data; few control/comparison groups in research design), the evidence base was characterised by studies that examined very specific learner cohorts (for example, adults with learning disabilities) and/or outcomes related to very specific skills (for example, increases in fluency) in interventions taking placed at a very local level (for example, a prison).

Evidence on the effectiveness of learning technologies on learning gains was very limited and stronger for English for Speakers of Other Languages (ESOL) than either literacy or numeracy. Evidence was more encouraging on the effectiveness of ICT in engaging and motivating adult learners. In the research literature, and also in policy, there is a general, consensus that learning through technology can appeal to adults who have had negative experiences in formal education, and that blended learning is more effective with low skilled adults than purely online learning, but these assertions are seldom evidence based.

In Norway, work is beginning on designing flexible learning platforms that will prove attractive to adults who have had negative experiences with traditional forms of learning, but there has been relatively little exploitation of technology in learning given how digitally advanced Norway is as a society. For example, the BKA programme does include elements combine basic skills education with ICT skills, which is perceived as motivational because less stigma is attached to adults who enrol on ICT courses than courses to improve their reading, writing or number skills. Such courses are very practical, focusing on everyday practices, but the ICT skills fostered in these courses tend to be very basic skills. A Norwegian Parliament white paper (Norwegian Storting, 2013) established the current government policy regarding ICT in the education sector. Use of digital tools is one of the basic skills adults will learn as part of their basic education, and is an integral component in competence aims in all subjects.

In the Netherlands, an evaluation of the online learning platform 'Practice' (www.oefenen.nl[21]) reported that although this open system resulted in a large number of accounts being opened, 75% of those that registered did not persist with learning (Smit & Camo, 2013). With funding from the BMBF, the German Adult Education Association (DVV) developed the e-learning portal 'I want to learn' (www.ich-will-lernen.de). Since its launch in 2004, this portal has grown from providing free learning materials and exercises for adults wanting to improve their literacy and numeracy skills to now also include content on basic financial education ('Life and Money'/ 'Leben und Geld') and a social networking

[21] This platform was run by a consortium of regional centers for vocational training and adult education, Stichting Etv.nl, www.etv.nl.

service, AlphaVZ. A German-language learning portal aimed at immigrants, 'I want to learn German' (www.ich-will-deutsch-lernen.de), was launched in 2013. Both portals can be used by individuals working independently or as part of blended learning programmes offered by adult education providers. Since 2004 nearly 450,000 individuals have been given access keys for the learning portal. However, the DVV portal only records the registration of learners and no further information about the number and profile of active learners is collected. There have been some evaluations of the portal's use by small groups of users which have returned positive data on the impact of technology on learner engagement and autonomy; no statistically significant returns to learning have been recorded[22].

Given the evidence presented in sections 4.3 and 4.4, it seems fair to conclude that efforts to promote the use of technology in adult basic skills education in the case study countries may lag behind similar measures in England, where there is wide cross-sector policy interest in the Department for Business, Innovation and Skills (BIS), the Department for Work and Pensions (DWP) and the Department for Education (DfE) in the use of technology in learning provision. The Further Education Learning Technology Action Group (FELTAG), for example, reporting to Matthew Hancock, then the Skills Minister, in March 2014, made a number of practical recommendations aimed at ensuring the effective use of digital technology in learning, teaching and assessment in Further Education and Skills. FELTAG's report emphasised the importance of enhancing knowledge in the sector of the potential of learning technology. Published in June 2014, the Westminster government's response to this report set out the government's strategy for removing obstacles that have impeded the ability of providers in the sector to take full advantage of learning technologies[23].

The English government is currently developing a number of initiatives in this area, including pilots and demonstration projects. One aim is to target initiatives at specific cohorts within the diverse body of adult learners. For example, in February 2014, the Deputy Prime Minister announced a pilot project for young job-seekers (aged 18-21) in which mandatory training using predominantly online learning and assessment will be offered to those who lack a GCSE grade C in English and in Maths[24].

[22] BIS (2014). Learning Technology in Adult English, Maths and ESOL / ELT Provision: An Evidence Review, Research Paper 196. https://www.gov.uk/government/publications/learning-technology-review-of-english-maths-english-for-speakers-of-other-languages-and-english-language-training

[23] See https://www.gov.uk/government/publications/further-education-learning-technology-action-group-feltag-recommendations-government-response

[24] Nick Clegg, speech at Southfields Academy: Better Choices, Better Prospects: Helping All of Our Young People Succeed. Available at: https://www.gov.uk/government/speeches/better-choices-better-prospects-helping-young-people-succeed

5. The age dimension

Key findings

England differs most starkly from the high-performing and improving countries in terms of the skills performance of younger cohorts at lower levels. The proportion of 16-18 and 19-24 year olds who attained PIAAC Level 4 or 5 in literacy and numeracy was lower in England than in many high-performing countries, although it was not significantly different to Norway. Although Norway's overall performance in PIAAC was higher than average in all three dimensions, young Norwegians (aged 16-24) scored at only an average level in numeracy and below average in literacy.

Compared with England, most high-performing or improving countries generally have *either* a much higher proportion of young people who are still in education only or they have a much higher than average proportion of young people who are in both education and work. The proportion of 16-24s who are 'not in education, employment or training' (NEET) is fairly uniform across the majority of high-performing and improving countries, at between 8% and 11%, but in England it is significantly higher, at 18%.

Whether performance of young people was poor or strong, national experts attributed this primarily to factors within the compulsory education sector. In the Netherlands, experts pointed to the high quality of the Dutch compulsory education system, with its strong focus on information processing skills. Korea, too, places a high premium on basic skills in primary and secondary education, and formal schooling is supplemented by the world's highest rate of private tutoring. In contrast, evidence from Norway points to low levels of pupil engagement and high drop out rates at upper secondary level.

The issue of early school leaving emerged as key in terms of policies to improve young people's basic skills. Tactics to reduce drop-out rates from upper secondary education include: rethinking school streaming; early identification of those at risk; tracking young people through an individual educational identification number; and in turn, using these data to develop targeted programmes. Far less evidence emerged on how case study countries were tackling young people's low skills though adult basic skills programmes. Apprenticeships were viewed as a way of reducing skills inequalities.

Norway was a high performer overall because the performance of older adults held up the relatively low performance of young people. Korean scores were below average overall because older people performed poorly. This highlights the lifecourse aspect to adult skills and how a strong adult education system (as in Norway) can lead to skills improving with age. In Estonia and Japan, the school system (and in the case of Japan and Korea, the tutor system) is far stronger than further education, and there is more evidence of skills decline over the lifecourse.

This chapter focuses specifically on examining the performance of younger people and older people in high-performing and improving countries and comparing this with the results from England. Drawing on the case studies, supported by the rapid evidence assessment, it then examine whether there are any particular features of the basic skills offer to young people in high-performing and improving countries that England could learn from.

5.1 Are there any high-performing and improving countries with a similar age / skills profile of relatively highly-skilled older adults?

Analysis across all of the three skills domains suggests that, among high-performing and improving countries, England shares most in common with Norway. Both countries face the similar issue of poor-performing young people relative to older age groups (see Sections 5.1.1 to 5.1.3 below).

5.1.1 Literacy

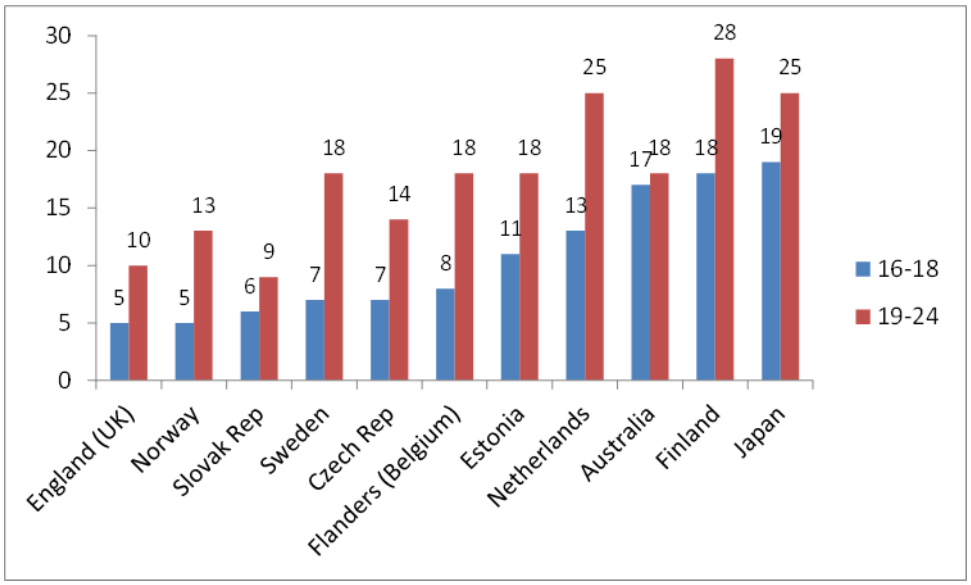
Looking at the distribution of literacy attainment by age, the proportion of highest-achievers (PIAAC Levels 4 or 5) peaks in the 25-34 age bracket for all high-performing countries except Australia (where there is no significant difference between 25-34s and 35-44s). England is no exception, but the proportion of 25-34 year olds attaining Level 4 or 5 is lower than all high-performing countries except Estonia, the Czech Republic and the Slovak Republic.

England has a particular issue with the performance of young people aged 16-18 and 19-24. In every country except England, Northern Ireland and Norway, the mean attainment score of young people is significantly better than that for 55-65 year olds. Although the mean score for 16-18s in England is lower than that among 55-65s, the difference is not statistically significant.

Figure 5.1 shows the proportion of young people attaining PIAAC Level 4 or 5 in literacy, within high-performing countries and in England. The proportion of 16-18s who attained PIAAC Level 4 or 5 was lower in England than in many high-performing countries, but it was not significantly different to Norway, the Slovak Republic, the Czech Republic, or Sweden.

Among 19-24 year olds, there was a similar pattern, with the proportion in England below the majority of high-performing countries except the Slovak Republic, the Czech Republic, and Norway.

Figure 5.1 – Proportion of young people attaining PIAAC Levels 4 or 5 in literacy, England and high-performing literacy countries



Source: Survey of Adult Skills (PIAAC), 2012

5.1.2 Numeracy

In common with some high-performing countries (the Czech Republic, Denmark, Japan, Norway and Sweden), the difference in mean scores for numeracy between the youngest (16-18s) and oldest (55-65s) adults was not statistically significant in England.

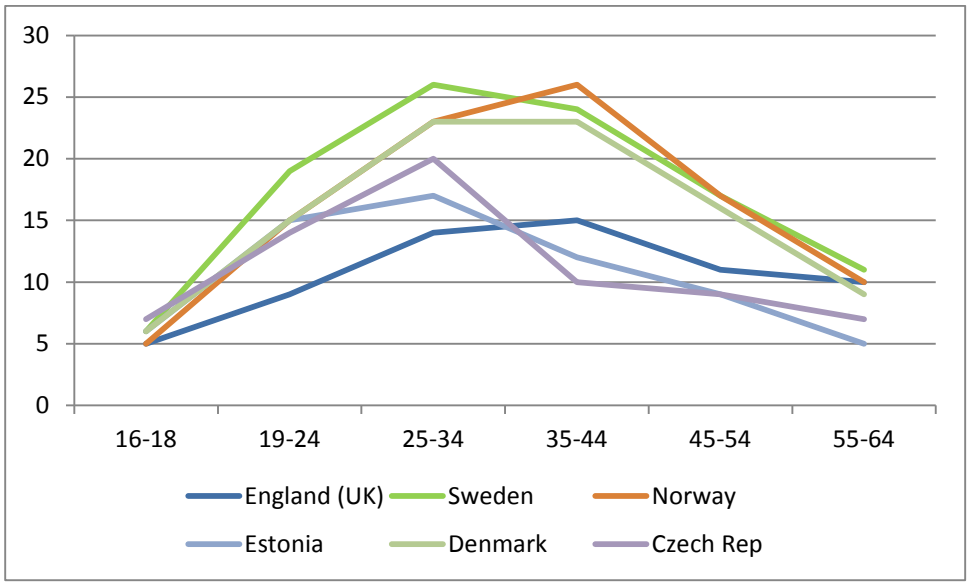
Overall, the numeracy scores for England increase with age, but unlike literacy only the oldest group perform better than average of the OECD countries who participated in the survey. A similar pattern occurred in Norway, Sweden and Denmark but, in contrast to England, it was only the youngest age group who scored below average in these countries.

Figure 5.2 shows the proportion attaining PIAAC Level 4 or 5 in numeracy in each age group, within a selection of high-performing countries and in England. The comparator countries have been selected because they have similar proportions of 16-18s attaining PIAAC Levels 4 and 5 to England.

Among 16-18s, the proportion of high performers in England was low at just 5%, but this was in line with many other high-performing countries including Norway, Sweden, Denmark, Estonia and the Czech Republic.

Among 19-24 year olds, the difference in the spread of performance becomes starker, with just 9% reaching Levels 4 or 5 in England compared with 15% or higher in the majority of high-performing nations. The opening of this gap relative to other countries with similar performance among 16-18 year olds may be related to the fact that in England, maths is not compulsory after the age of 16, whereas in other countries more young people continue in compulsory education and study maths to the age of 18.

Figure 5.2 – Proportion of adults attaining PIAAC Levels 4 or 5 in numeracy, England and a selection of high-performing numeracy comparators



Source: Survey of Adult Skills (PIAAC), 2012

5.1.3 Problem-solving in a technology-rich environment

Like all other countries there was a significant difference in the PS-TRE mean scores of the youngest and oldest age groups in England, in favour of young people. Notably, this difference was one of the smallest of all the participating countries and much less than that found among some high-performing and improving countries, indicating that the spread of attainment was narrower in England.

Eighteen per cent of adults aged 55-65 and 29% of those aged 45-54 in England scored at Levels 2 or 3, both of which were higher than average (24% and 11% respectively). Among 55-65s, the proportion reaching Levels 2 or 3 was higher than that found in some high-performing countries (Finland, Japan and Norway). In contrast, young people in England performed below average: 42% attaining Levels 2 or 3 compared with 51% of young people overall.

5.2 What are the characteristics of young people in high-performing and improving countries?

In this section we explore the profile characteristics of young people (aged 16-24) in high-performing and improving countries on a range of key variables.

5.2.1 Demographic characteristics

In terms of social background (proxied by **parental education**), there was a diverse profile among young people in high-performing and improving countries. The proportion whose mother and father had attained tertiary level education was highest in Sweden and Japan and lowest in the Czech and Slovak Republics and Poland. Young people in the Netherlands and Australia were more likely than others to have parents whose highest level of education was below upper secondary level.

The highest proportion of **foreign-born** young people among 16-18s was in Sweden (16%) and Australia (12%); among 19-24s it was in Australia (18%), Denmark (13%) and Sweden (11%). The majority of other countries were very homogenous, in particular Japan and Korea, and the Eastern European countries of Poland, the Slovak Republic and Estonia. England had a comparatively high proportion of foreign-born young people, particularly among 19-24s (14%). England also had a higher proportion of young people who had not been domestically educated (11%) than any of the comparator countries.

5.2.2 Education, training and employment characteristics

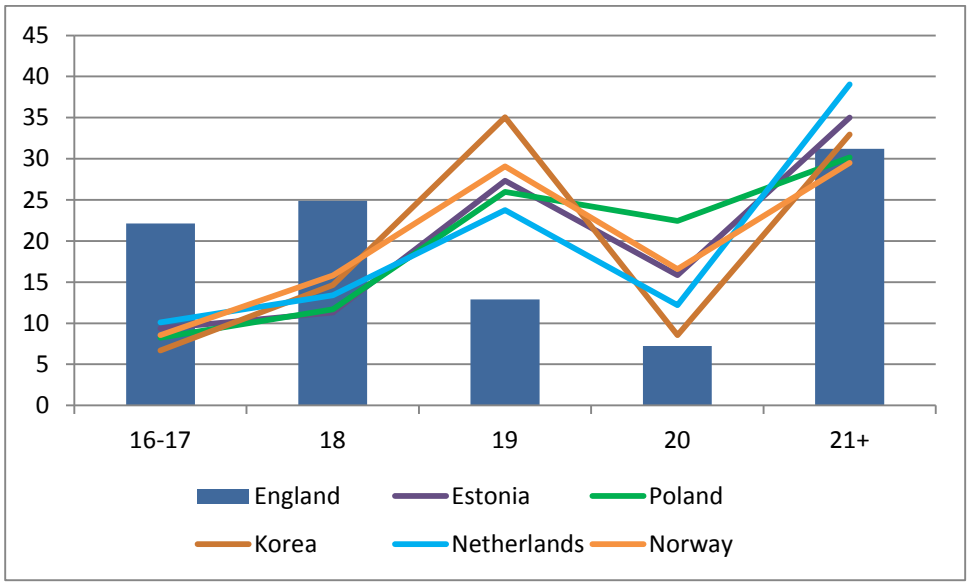
Focusing on 19-24s[25] there is no clear pattern among high-performing countries in terms of the highest level of **educational attainment**. Around a quarter in Japan, Australia and Flanders (Belgium) have attained degree-level qualifications (similar to England) but this compares with below 10% in other countries including Finland, Denmark, Sweden and the Czech Republic. This may be because a higher proportion of young people in that age group are still participating in education in those countries. Indeed, as other reports have pointed out[26], it is important to note that in England young people attain upper secondary qualifications at an earlier age than in many of the other countries who took part in the survey (as defined by ISCED, this includes GCSEs, which most young people in England take at age 16).

For example, when we look at **age left education** among 19-24s, we find that in most high-performing and improving countries, between a quarter and a third leave at age 19 (this rises to half in Finland and Sweden) and more leave education *after* this age than before it. The pattern in Japan is different because the highest proportion of young people leaving education peaks at age 18. Comparatively, England had a significantly higher proportion of 19-24s who leave *before* the age of 18 (22%) – in particular 11% who left at age 16 (compared with between one and five per cent in high-performing and improving countries). This will change in coming years with the raising of the participation age.

[25] We have presented findings on 19-24 year olds for two reasons. Firstly, some countries did not include 16-18s in the survey and therefore there is only limited comparative information for this age group. Secondly, if we examine educational attainment among 16-18s the results are impacted much more heavily by the fact that many young people in this age group are still participating in education.

[26] See BIS (2014), Young Adults' Skills Gain in the International Survey of Adult Skills 2012, Research Paper 182 (https://www.gov.uk/government/publications/adult-skills-international-survey-2012-young-adults-improvements-over-time) which points out that upper secondary qualifications (as defined under ISCED, which include GCSEs) are gained at an earlier age in the UK (age 16) than most of the other countries participating in the study (where upper secondary qualifications are attained at age 17-18).

Figure 5.3 – Age left full-time education among 19-24s in England and a range of high-performing and improving comparators in literacy



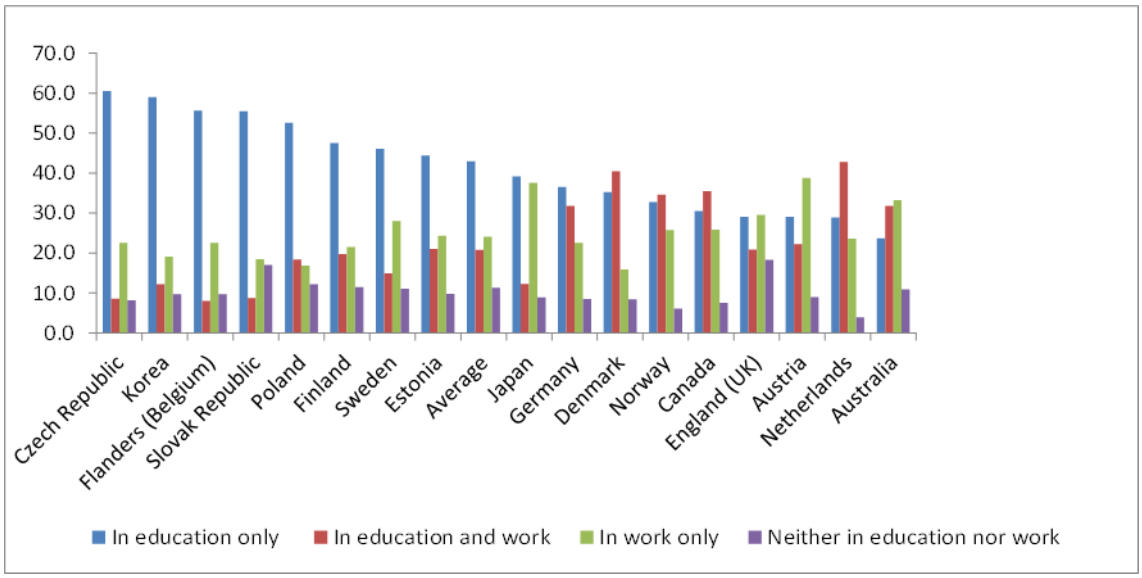
Source: Survey of Adult Skills (PIAAC), 2012

Very few young people in high-performing and improving countries leave education ***without*** completing at least upper secondary (ISCED level 3) qualifications[27]. The highest proportions of 16-18s who leave without achieving this level are in Denmark, Norway and Slovakia (at around 7%) – this compares with 13% in England. Similarly, among 19-24s, most high-performing and improving countries have less than 10% who left education without achieving this level – compared with 16% in England. Among high performing countries, the highest equivalent is in Norway (14%). Poland (6%) and Korea (2%) – both improving countries – are particularly low.

Looking at employment and education status among 16-24s as a whole, we find a clear pattern emerges in high-performing and improving countries. Most high-performers or improvers generally have *either* a much higher proportion of young people who are still in education only (for example, 61% in the Czech Republic; 59% in Korea; 56% in Flanders (Belgium), compared with the average of 43% among all OECD countries participating in the survey), or they have a much higher than average proportion of young people who are in both education and work (for example, 43% in the Netherlands; 40% in Denmark; 36% in Canada; 35% in Norway and 32% in Germany, compared with an average of 21%). The exceptions are Austria and Japan (which both have significantly higher proportions of young people in work only, at 39% and 38% respectively).

[27] ISCED level 3 qualifications are defined as: "More specialised education typically beginning at age 15 or 16 years and/or completes secondary education in preparation for tertiary education, or to provide skills relevant to employment, or both." Examples in England include A-levels and Apprenticeships. GCSEs achieved at grades A*-C (which are usually taken at age 16) are also included within this category, although in England they are not equivalent to A-level, being at a lower level on the National Qualifications Framework (NQF).

Figure 5.4 – Young people aged 16-24's employment/education status in high-performing/ improving countries and England



Source: Survey of Adult Skills (PIAAC), 2012

The proportion of young people who are 'not in education, employment or training' is fairly uniform across the majority of high-performing and improving countries, at between 8% and 11% (the average of OECD countries participating in the survey). The Netherlands stands out as an exception, at just four per cent.

The situation in England is very different to the majority of these countries. At 18%, the 'not in education, employment and training' rate among 16-24s is significantly above the average of OECD countries participating in the survey and indeed is higher than any other country apart from Spain.

Compared to the Netherlands, which has the same proportion of young people in education only, significantly fewer young people in England are combining education and work[28] (43%) and significantly more are in work only (30%).

5.3 Lessons from comparing young people's performance and the basic skills offer to young people in high-performing and improving countries

5.3.1 Factors behind young people's performance

Across the case study countries, the rather unsurprising conclusion of experts was that the performance of young adults in the Survey of Adult Skills was primarily driven by the compulsory education system.

[28] For example, engaged in work-based training.

In Canada, the relatively poor results for the youngest cohort were regarded as disappointing, but not surprising: this cohort had performed poorly on earlier assessments, including PISA. None of the experts we spoke to were able to offer a conclusive explanation for this poor performance; nor did the research and policy literature. However, one theory was that Canadians of this generation experienced 'test fatigue'. Having taken a relatively large number of high stakes assessments over the course of their school careers, this generation, it was posited, may feel limited motivation for non-high stakes assessments such as PIAAC. There was also speculation from civil servants that declining performance may be linked to changes within the school population over the last decade which mean that young people who may once have been selected out of assessment exercises now participate. For example, considerable efforts have been made to integrate people with disabilities (included physical, mental and cognitive impairments) into mainstream education.

In Norway, too, PIAAC results were in keeping with PISA 2012, which saw the country fall below the average in terms of the share of top performers in mathematics; this was regarded as a mediocre performance given the comparatively high levels of spending on education (at 7.6% of GDP, representing the third highest spend in the OECD). Underachievement in PIAAC is associated with underachievement in formal education: more than half the 16-24 year olds assessed in the Survey of Adult Skills had not completed upper secondary school and a further 16% of 25-34 year olds had not achieved this education level (OECD, 2014). Unpicking attainment data by age, Norway appears to be making little progress in upper secondary attainment. At 90%, upper secondary graduation rates (including through 'second chance' education) are above the OECD average (83%) but fall far short of those in Korea, Germany, Sweden, Finland, Japan, the Netherlands and the United Kingdom. Completion rates (those who will achieve within the expected time period) are below 57%.

An OECD 'Skills Diagnostic' report on Norway (OECD, 2014) identified a number of challenges related to this disappointing performance. The report pointed to a relatively low level of student engagement in Norway: in focus groups, the drop in educational attainment was linked by stakeholders to a large drop-out rate from secondary education and lower completion rates of students on vocational courses. Although overall Norway has low youth unemployment and a low share of NEETS, these rates vary across the cohort, and those who do not complete upper secondary school are almost four times more likely to be unemployed than those who have completed tertiary education.

Poor PIAAC results for the youngest cohort were linked by one Norwegian policy expert to another problem Norway faces: high drop-out rates at the upper secondary school level. In Norway, progression to the upper secondary level is a cultural norm, even for pupils who, in other countries, might leave school after completion of lower secondary. A relatively large subset of the young people progressing to upper secondary have substantial literacy and numeracy gaps, and these gaps are seen to contribute to high drop-out rates, particularly for pupils on vocational tracks. While all of these pupils have learned to read, many struggle to 'read to learn', making it difficult to meet the requirements of their training. That is, they are able to read at a basic level, but do not read well enough to successfully process complex documents of the type characterising upper secondary education, whether vocational or academic.

By contrast, the youngest cohorts in the Netherlands performed very strongly in PIAAC. Interviewees in the Netherlands referred to the staggering differences between English and Dutch scores in literacy that emerged in PISA, with Dutch young people being the equivalent of three or four years ahead of their English peers. Policy experts emphasised the quality of the Dutch compulsory education system, which has a strong focus on information processing skills. In addition, the Dutch education system has a particularly strong concentration on primary and secondary education as compared to tertiary.

In contrast to the Canadian 'test fatigue' theory, a Korean expert pointed to young Koreans' extensive experience of high stakes testing as one possible reason for their success in PIAAC. However, Korean experts we interviewed pointed to other, more structural factors for young people's success. In particular, these experts highlighted the excellent educational opportunities available to younger Koreans, and compared these to the very limited education received by older generations. The Korean education system has a strong concentration on basic skills, and formal schooling is supplemented by the world's highest rate of participation in private tutoring.

An Estonian adult education expert consulted for this study offered the following informal views, which, while based on the expert's experience, are observational. According to this expert, Estonia's relatively strong PIAAC performance, including the comparatively high performance of younger age cohorts, should be attributed to long-term developments in Estonia's education system rather than to shorter-term, specific programmes. In particular, the Estonian compulsory education system is characterised by:

- High rates of participation through the compulsory minimum age of 17 (although this covers only the first nine years of compulsory education),
- High levels of educational equity – there are very few private schools, for example, and little streaming by ability,
- The strong dominance of general education over vocational education – for every pupil who goes to a vocational secondary school, three go to an upper secondary general [*gymnasium*] school, and
- The 'second chance' opportunities provided by adult *gymnasiums* for those who have not successfully completed compulsory education.

Ishikura (2014) suggested that Japan's PIAAC outcomes could be stronger if there were greater public expenditure on educational institutions – in 2010, Japan spent only 3.6% of GDP on formal educational institutions, the lowest among OECD countries, which averaged 5.4%. However as is well known, Japan's formal expenditure on education is heavily supplemented by a large amount of private spending, in the form of special tutors and classes for children and young people. With regard to younger PIAAC cohorts, Ishikura argued that, in Japanese policymaking, 'continuing education is not a priority' (p. 79), suggesting that young people do not continue to develop their skills sufficiently outside of university. This may be a particular problem for adults in their 20s. In Japan, the ratio of higher education students who are over 25 years of age is extremely low: only 2% compared with an OECD average of 21%. This may imply limited skills development in the third decade of life.

5.3.2 Improving young people's basic skills – compulsory education

Given the concentration on compulsory schooling, solutions to improving young people's basic skills also focused on schools. A key theme across countries was the need for closer policy and programme attention to basic skills development throughout all stages of the lifelong learning system. For example, many young people in Norway appear to suffer from a lack of ongoing basic skills development throughout secondary school. As various researchers have documented (see e.g. EU High Level Group of Experts on Literacy 2012; Garbe et al., 2009), education strategies and systems frequently underestimate the need for ongoing attention to basic skills development. 'Adolescent struggling readers' (Garbe et al., 2009) have learned to read, but do not read well enough to continue learning effectively throughout secondary education. Because of poor literacy and/or numeracy skills, these adolescents are frequently unable to fulfil their academic or vocational ambitions. Addressing this issue is a challenge, as curricula in all countries tend to be overloaded, and subject specialist teachers, whether in academic or vocational tracks, typically have neither the time nor the pedagogy training to focus on adolescents' literacy and numeracy skills (EU High Level Group of Experts on Literacy, 2012). One effort to overcome this is the European *Baculit* programme (Garbe et al., 2013), which sought to develop standards for the systematic inclusion of literacy instruction across the secondary curriculum, with a strong focus on in-service teacher training.

One interviewee from the Netherlands associated the high performance of younger Dutch cohorts in PIAAC with a drive to reduce Early School Leaving in a programme that has been running for the past decade (far longer than similar initiatives usually last.) The OECD Skills Diagnostic report on Norway (2014) also highlighted this scheme as an example the country could learn from, through more effective tracking and earlier identification of risk. In the Netherlands, a Personal Identification Number – or education number – has been issued to every child in the country over the age of 3½ years. Similar to a social insurance number, the Personal Identification Number enables better monitoring of pupils' school careers. All secondary schools are expected to monitor and register absenteeism, disengagement and drop-out, and a monthly report is available to municipalities and schools, helping them to give priority to pupils who appear to be at risk of drop-out or other forms of school failure. In addition, these data are linked to socio-economic data (including demographics, native Dutch citizens, ethnic minorities, unemployment, people entitled to benefits, etc.) by region, city and district, providing a wealth of information that can be drawn on for policy and programme development.

The drop-out rate from upper secondary education has been high in Norway for many years. To cope with this, the national programme New Possibilities (*Ny Giv*) was launched in 2010, with the aim of encouraging more young people to complete and pass upper secondary education (OECD, 2014a). One of the measures is an intensified follow-up of those pupils who have the poorest school results. Another measure is more relevant and practice oriented vocational education via the Certificate of Practice and the Training Candidature. The Certificate of Practice is a new 2 year VET education programme that has been developed to offer a lower level craft certificate, while the Training Candidature is an individually adapted education and training scheme based on a reduced package of competence objectives, offering both workplace and school based training.

5.3.3 Improving young people's skills – further education

Green et al. (2014) produced an insightful analysis of skills inequality in a number of OECD countries, including Germany and England. By skills inequality, these authors referred to the gap between the basic skills scores of a country's highest and lowest achievers, e.g. the top and bottom quintiles. In order to approximate a measure of change over time, Green et al. looked at the skills inequality in each country when a pseudo-cohort was age 15 (i.e. on PISA 2000) and at age 26-27 (PIAAC). Countries were then put into rank order position based on the level of skills inequality at each of these two time points. In this analysis, Green et al. found that England's skills inequality relative to other countries was worse (i.e. larger) when this pseudo-cohort was older than when it was 15. Other countries showed an improvement in relative position. In particular, Germany's literacy inequality moved from a relatively high ranking at age 15 (meaning there was a relatively high level of inequality compared to other countries) to a low-middle rank at age 26-27). In numeracy, Germany moved from a high inequality ranking at 15 to a relatively low inequality ranking at 26-27. According to Green et al.:

> *What these comparisons across the two surveys suggest is that some countries manage to mitigate relative inequality through initial further and higher education while others do not. Skills in England become more unequally distributed during this [young adult] phase, relative to other countries at least, and may well become more unequal in absolute terms. By comparison, in some other countries, such as Austria, Flanders and Germany, skills become more equally distributed, relative to other countries, and probably more equal in absolute terms* (pp. 51-52).

According to Green et al., there is insufficient data for researchers or policymakers to draw causal conclusions about this finding. In particular, it is impossible to 'be sure which parts of [the] systems [in Germany and other countries] ... mitigate or exacerbate skills inequalities' (p. 52) in young adulthood. The authors conclude that participation in higher education is unlikely to be a primary factor, as England is more inclusive in this regard than Germany. A more likely influence, Green et al. argue, is the relatively high rates of participation in 'high quality apprenticeship systems' in Germany (as in Austria and Flanders):

> *This may be because the literacy and numeracy skills of the lower achieving groups are substantially improved through the continuing learning of maths and the national language for three to four years which typically occurs with Dual System apprenticeships in these countries* (p. 52).

Although experts in all case study countries spoke primarily of addressing young people's low skills through changes to school education, further education was seen to play a role in exacerbating or mitigating the impacts of compulsory schooling. For example, a vocational education system that does not offer high-quality, pedagogically appropriate basic skills education will compound rather than remedy the failures of compulsory education. This is seen as one of Norway's problems. Likewise, Korean experts fear that the country's limited adult education system militates against skills development and retention over the life course. This is also a problem highlighted in Japan. In contrast, Norway appears to benefit from extremely well developed adult education system and high levels of everyday literacy practices amongst the population.

Norwegian literacy levels do increase with age, perhaps because Norway has PIAAC's highest score in the 'everyday reading practices' index. Compared to other Nordic countries, mean literacy in Norway lags behind at 16 years, but literacy levels increase rapidly with age, and the skills disparity between 35 year olds in Norway and those in Sweden and Finland is substantially less than the disparity among the younger cohort. 65-year-olds in Norway have among the highest literacy skills in the region. In Norway, the difference in literacy proficiency between adults with tertiary and those without upper-secondary is among the lowest of those surveyed in ISAS. It is likely that the emphasis placed on adult learning systems, Norway's strong performance in targeting training to those who are less qualified, and the high participation rate, all play a role in explaining the relatively solid performance of adults with a low level of educational attainment.

A recent Canadian federal policy announcement has emphasised targeted support for apprentices to bring their literacy levels to Grade 12, so they can pass their certification exams. Currently, many apprentices are unable to successfully complete their training because of poor basic skills.

One worry expressed by Korean experts was that the country's limited opportunities for lifelong learning might contribute to skills decline as this youngest cohort aged. The as yet unpublished OECD Skills Strategy diagnostic report for Korea (OECD, forthcoming) argues that the educational attainment of younger people and relatively low scores of older people in the ISAS assessment highlight the need for a Korean skills strategy which would improve the employment rates of women, youths and older workers, while also improving their wages and the overall quality of their jobs. With regard to youths, educational attainment has increased much more rapidly in Korea during recent decades than in the rest of the OECD area. For example, 98% of Korean 25-34-year-olds have completed upper-secondary school and 65% have a university-level tertiary degree. The large differences in the qualifications profiles of the Korean workers who are now retiring and the cohorts who are beginning their working lives suggests a possibly serious mismatch between the skills profile of labour market entrants and the skills needs of the employers. This mismatch, due to the possible over-emphasis on higher education among youth generations, raises the risk of a sharp fall in the returns to their large investments in tertiary education. Such a mismatch is suggested by data which show that the share of NEETs among Korean youth with a tertiary education is about double the OECD average (24% versus 13%), while the rate among all youth is only moderately above average (19% versus 16%). By contrast, only 6% of the least educated out-of-school youth in Korea (i.e. those not having finished upper-secondary schooling) are NEETs, well below the OECD average of 16%. This pattern is consistent with the widespread belief in Korea that the labour market is characterised by an over-supply of highly educated workers, with employers unable to offer all of university graduates jobs which match their qualifications. (The NEET figure is controversial, however, and may be closer to 15% of those with tertiary education.)

For decades the Korean government has attempted to encourage young people to enter the workplace instead of going directly to college, partly because of the skills mismatch between college education and workplace performance, and also due to an over-heated demand for college places. One expert interviewed for this research commented that none of these policies had been successful. The issue has been exacerbated by Asian financial crisis and changes to the Korean labour market impacting on the number of appropriate job opportunities for young Koreans with only high school education.

6. Policies to improve performance: lessons from the case studies

Key findings

Analysis of PIAAC data in the four-countries is ongoing and so it is too soon for policy change to be effected. However, PIAAC results *have* focused policy attention on cohorts of interest. In Norway, as in England, the focus has been on young people, and all countries – even Korea where the immigrant population is very low – have a focus on immigrant skills.

Experts in the case study countries emphasised that the success of efforts to increase adult basic skills is linked to improving understanding of low-skilled people, skills use and literacy, both within lifelong learning, and across government, particularly where there is joint-responsibility between ministries. Instead of being a 'crisis' low basic skills is more accurately understood as a societal condition that requires a comprehensive, lifelong and life-wide strategy that addresses concerns of supply and demand, and brings together a range of policy stakeholders to address these issues.

Drawing lessons on basic skills delivery across high-performing/ improving countries is complex, especially where evidence is lacking or is not comparable. In particular there is very little robust evaluation evidence which could be used to identify programmes where success had been proved. The following 'lessons' have emerged from this research:

- Policy-makers should give as much attention to implementation as to policy development. For example, the impact of the current policy commitment to fund free training for any adult who wants to improve their literacy and numeracy up to Level 2 may be limited by lack of awareness/ take-up and limited guidance for those who do seek provision.

- Policy makers should ensure synergy between, and coordination across, the government departments with an interest in improving literacy and numeracy.

- Understanding the nature of the low-skilled population is vital if policy makers are to be able to allocate limited funds to maximum effect. For example, policy makers should seek to understand the nature of the skills of the immigrant population in order to be able to develop appropriate provision and consider whether the current relationship in policy between language proficiency and immigration status is helpful.

- Policy makers should ensure that funding is as long-term as possible to allow providers to understand local need, develop appropriate provision and build capacity. Funding also needs to be invested in rigorous

evaluations of literacy and numeracy initiatives which take a long-term view of outcomes.

- Workplace programmes should be tailored to the needs of the workplaces in which they are situated, in terms of the relevance of the content of the training to the literacy and numeracy demands on the workforce, and should ensure that they cause minimum disruption to the smooth running of the business.

Adult literacy and numeracy provision in England is cited as a model by some experts in the case study countries, with particular praise for our approach to teacher training and for the coherence of our research in this area. However, there is a danger that we will fail to build on the gains made through the Skills for Life programme in building capacity in the sector and that future policy makers will be faced with the task of rebuilding that capacity at a future date as practitioners leave the provision and contraction of funding means that newly qualified teachers struggle to find enough work to sustain a career.

This final chapter focuses on the response to the OECD's Survey of Adult Skills (PIAAC) in the four case study countries and identifies the lessons that England might learn from the policy and programme approaches these countries employ to improve adult basic skills.

6.1 Government and media responses to PIAAC

Across the four case study countries, the publication of the results of the Survey of Adult Skills was greeted by as muted a response from government, the media and other commentators as was the case in England.

In the Netherlands, where national performance was high across the three dimensions, and younger cohorts did particularly well, experts interviewed for this study described the overall reaction as one of 'happy complacency'. In other words, high performance was expected given Dutch rankings in previous international literacy assessments. PIAAC data were collected too early to reflect any impact of the new Dutch Skills for Life programme, Literacy for Living (*Taal voor het Leven*). To date, in-depth analysis of the Dutch PIAAC data has not been extensive, a situation one interviewee contrasted with that in Germany, where considerable funding has been provided by government for further data analysis. This said, Dutch experts highlighted an area of concern that was beginning to generate attention from policy makers, namely the increase in Level 1 performers between IALS and PIAAC among older people (significant for those aged 45 and over), women (especially women over the age of 35), and immigrants.

In the Republic of Korea there was little response from either of the two government ministries with educational responsibility to the PIAAC results beyond a pledge to expand lifelong learning opportunities for cohorts which had performed poorly (older people and low-skilled workers). Considerably more attention was given by the Korean government to PISA results. Although younger people in Korea performed extremely well (as they did in PISA), PIAAC results confirmed concerns about the over qualification of this cohort with regard to finding employment. Norwegian reaction was similarly low key, which probably

stems, as in the Netherlands, from the strong results. The Norwegian government did commission a broader skills analysis report from the OECD (2014). In Canada the lack of strong government response was contrasted by interviewees both with the previous response to assessment exercises such as IALS and the contemporaneous response to PISA and to provincial SATs. In general, the results were viewed as a vindication of a well-functioning public education system, and in keeping with high levels of participation in post-secondary education in Canada. It was also stressed by one Canadian interviewee that the government agencies attached to PIAAC are located in a different part of Employment and Social Development Canada to the Office for Literacy and Essential Skills, undermining any joint-approach.

Overall, it is too soon for the OECD's Survey of Adult Skills to have had a substantive impact on government policy in the four case-study countries and analysis of the survey's results is ongoing (although in Canada this work is substantially delayed). Developments in adult basic skills policy are happening in the case study countries largely independently of PIAAC. So, for example, neither this year's de-funding of literacy organisations in Canada, nor the current collaborative process underway in Norway to produce a basic skills-related White Paper by 2015, are linked to PIAAC. There was no expectation in any of the countries under investigation that explicit responses to the Survey of Adult Skills would include fundamental changes to adult basic skills policy.

6.2 Understanding the low skilled population and adult basic skills: lessons for England

Three important themes emerge from the case studies interviews and the literature review that overarch the effectiveness of the strategies with which policy makers think about improving adult skills: these are 1) understanding the characteristics of the low-skilled population; 2) understanding skills use, and 3) understanding the concept of literacy.

6.2.1 Understanding the low skilled population

The size of the low skilled population differs between the countries reviewed in this study and across the OECD. However, all countries have a significant low-skilled population, regardless of overall performance in the Survey of Adult Skills. The evidence gathered for this study strongly suggests that policymakers should be less concerned with the size of their low-skilled population and instead focus on the characteristics of their particular low-skilled population, which differs significantly between countries.

Policy makers should also avoid pathologising the low-skilled population. While they are more likely than the rest of the adult population to exhibit certain characteristics, of more relevance is that the majority of them do not. The low-skilled population is not a homogenous group – we all share characteristics with them. Thus while it is legitimate to target provision at say, the unemployed, as those with poor literacy and numeracy skills are more likely to be unemployed than those with good skills, in fact only 10% of the low-skilled population in England is unemployed[29].

[29] 55% are employed and a further 35% are out of the labour force.

6.2.2 Skills use

A recurrent theme in the interview data and in the literature was the relationship between skills level and skills use. Although policy tends to focus on increasing skills levels, experts argued that it might be smarter to ensure that people use the skills that they have, increasing their skills informally through use of those skills rather than through formal programmes.

An expert from the Netherlands pointed out that while the Dutch performance in PIAAC was very high, rates of unemployment and of youth unemployment are higher in the Netherlands than in countries that performed less well but which have a stronger economy, such as Germany or the United States.

6.2.3 Conceptualising basic skills

Experts from the three of the four case study countries discussed the need for a broader, more moderate conceptualisation of basic skills. Only in the Netherlands, where PIAAC scores are particularly high and basic skills are reportedly strongly embedded throughout the curriculum, was this not raised as a concern. Experts from other countries emphasised that where policy is framed by an understanding of literacy as a binary concept – that is, that people are either 'literate' or 'illiterate' – efforts to improve adult basic skills would be impeded. Such policy assumes that once an adult has achieved a basic level of literacy skills, once they can 'read and write', the problem has been solved. In reality the demands on adults' skills are far greater and to progress in education or in work frequently requires higher levels of literacy.

One Canadian expert agreed that policy makers without sufficient understanding of the field tend to see basic skills in simplistic, reductionist terms. Even if they have moved beyond seeing literacy as a binary concept, there is still a very strong tendency to see the problem of poor basic skills as a 'crisis' that can be fairly quickly solved with a 'magic bullet' policy. Instead it can be more accurately understood as a chronic societal condition that requires a comprehensive, lifelong and life-wide strategy that addresses concerns of supply and demand, and brings together a range of policy stakeholders to address these issues. Such a comprehensive strategy should also acknowledge that adult skills are not static, but rather that they change over the lifecourse, and skills that are not used can be lost.

An insufficiently sophisticated understanding of adult basic skills can encourage a view of literacy education as *compensatory* – often described in Europe as 'second chance education' – rather than functional, involving supporting adults to respond to the literacy demands of the workplace and their everyday lives. The data on adults' skills use in the Survey of Adult Skills is a good starting point here, but we need to know far more about the demand for literacy skills in the twenty-first century.

A focus on functional literacy permeates current Norwegian educational policy at all levels. Literacy is no longer perceived in binary terms – literate or illiterate – nor as a set of autonomous skills to be mastered, but as the core component of communication in the twenty-first century. However, according to a senior basic skills NGO representative, the compulsory education system still tends to conceptualise literacy as either/or, with teachers believing that once children are able to read, literacy teaching is no longer required. However, many pupils who can read do not develop their literacy skills well

enough to progress in education and employment. For this interviewee, continuing to develop a more nuanced conception of literacy development, and embedding this conception in the compulsory and further education systems, will be a key challenge..

Turning to Korea, Byun et al. (2011) also called for an expanded conceptualisation of literacy, which would move beyond the needs of poorly educated older people seeking to learn basic reading and writing, and take greater account of the needs of various population groups to function successfully in a modern knowledge economy. A Korean adult literacy expert concurred strongly with this recommendation, arguing that the traditional model of adult literacy as a form of compensatory education is no longer appropriate for a world in which good basic skills are increasingly a requirement of employment. This expert also argued that there is a basic misperception on the part of many policymakers with regard to what literacy is. Courses typically seek to help participants with almost no written or spoken Korean develop very basic skills, but there are few courses helping individuals move from having low literacy skills to having good skills. One Korean expert argued that literacy must be viewed more expansively in her country – for example, policies and programmes should aim to help low-skilled employed men improve their literacy and numeracy, and thus their employment opportunities. She also argued that this would require much greater funding than is currently available.

6.3 Policy strengths and weaknesses

As noted above, basic skills policy in each of the countries under review differs in a number of intrinsic respects that make it difficult to draw clear-cut lessons for England, and there no specific messages emerged about policies to improve adult maths (research question 7).

Given that the focus of this study was on learning from other countries – specifically on the lessons that England might be learned from high performing and improving countries with regard to the delivery of basic skills education to adults – interviews asked national experts to consider where they found exemplars. In both the Netherlands and Canada, England was cited as an exemplar; comments on England emphasised not only the quality of English adult basic skills education, but also the scope for it offers to provide practical solutions to improving skills. Other countries that were being looked at were developed Commonwealth countries (Australia and New Zealand, described as natural centres policy makers gravitate towards) and Scandinavian countries.

6.3.1 Legislative frameworks

In terms of positives, overall basic skills levels in the Netherlands are very high, and basic skills have been included in the government's core legislative programme for the next four years, focusing attention on the issue and giving organisations such as the Reading and Writing Foundation a mandate to approach ministries and urge them to include measures on increasing basic skills in their programmes, across a broad range of policy areas.

Norway is a world leader in terms of legislation regarding the right to basic skills. However, these rights, while enshrined in policy, are not always translated into effective programmes and practices. For example, central government declarations are not always accompanied by sufficient funding to enable municipalities to translate 'policy in intent' to 'policy in practice'. In seeking to improve the system, three ministries – Education and Research,

Work and Employment, and Equality – are collaborating on a lifelong learning and exclusion White Paper scheduled to be completed at the end of 2015; this paper will have a strong emphasis on basic skills and cooperation between ministries in order to improve those skills.

More generally, there is the feeling that although literacy and numeracy are formally at the core of the curriculum (for children and adults), and while there is an external perception that Norway is a leader in basic skills provision, there is in truth a significant gap between what has been achieved from a legislative point of view and what happens in practice. This is reflected in a take-up of basic skills provision that is lower than might be expected: in 2011/12 only 6,000 adults participated in adult education at the primary/lower secondary level and the large majority of participants were foreign-born individuals, whose skills needs may not be addressed by the primary/lower secondary curriculum on offer (see OECD, 2014). In Norway, adults are more likely to participate in workplace basic skills programmes (27,000 participants in the most recent year for which figures are available). Norwegians also lead the OECD in the variety and frequency of everyday literacy practices.

Lessons for England

Policy-makers should give as much attention to implementation as to policy development. For example, the impact of the current policy commitment to fund for free training for any adult who wants to improve their literacy and numeracy up to Level 2 may be limited by lack of awareness among adults that this support is available and limited guidance for those who do seek provision. One expert from Norway emphasised the vital role of guidance in helping adults to persist with learning.

6.3.2 Government ministries

A perceived weakness of the Dutch system comes with the fact that responsibility for literacy and numeracy has been given to the Ministry of Education, with the consequence that the Ministry of Social Affairs is not linked into this work, and the monopolisation by the Department of Education means that other departments are lacking in awareness of basic skills issues. There was an indication in interviews that this situation was changing and that the learning paths of labour market and employability skills may be brought together with paths aimed at increasing social inclusion. The Ministry for Social Affairs has responsibility for Youth Unemployment in the Netherlands, but neither the Task Force set up to address this, nor the policy paper, on the subject, refer to literacy issues – this is partly because education is dealt with by a separate ministry but may also be connected to the high youth performance in PIAAC.

Others in the last decade include combined policy on drop-outs or reintegration to labour force – money could be drawn down from vocational training budget and used to create special programmes which, for example, combined working skills and basic skills. But now that education lies within the remit of the Ministry of Education social skills within that of the Ministry of Social Affairs, programmes are proving less attractive to adults as they are less flexible and involve lots of attendance hours (1000+) at school.

Norway too has a system that is marked by split ministries. Here however, the feedback from experts was more positive on joined up government. Experience on the BKA programme shows tripartite cooperation working well; and it is perceived as one of the

strengths of the Norwegian system that four ministries are now working together on the White paper for 2015, and a sign of a drive towards the meaningful inclusion of all stakeholders in national policy making. The underlying philosophy is that cooperation between ministries is necessary to improve the access of individuals to education and skills training and increase take-up. One Norwegian interviewee pointed out, however, that cooperation may work in Norway because there is a strong tradition of including employers, NGOs and social partners in the government's endeavours – this tradition of inclusion has established a culture of trust.

Lessons for England

A number of English Government departments have an interest in adult literacy and numeracy: the Department for Business, Innovation and Skills, the Department for Education, the Department for Work and Pensions, the Department for Communities and Local Government, the Ministry of Justice, and the Ministry of Defence. Policy makers should ensure that there is synergy between, and coordination across. It is also important that there is a shared understanding of the problem and approaches to address it across government.

6.3.3 Budgets and funding

According to Veeman (2004), the federal allocation of funds to adult literacy in Canada during the years 1999-2002 equated to approximately 1 Canadian dollar per Canadian (approximately 78 cents, in 2011 terms); in contrast, she points to Sweden, where spending per capita on adult education was 56 times that amount (i.e. just under 44 euros per person, in 2011 terms), on top of already existing high levels of infrastructure funding for Swedish adult education.

Canadian funding for literacy initiatives has been primarily project-based; this tends to encourage, whether accidentally or on purpose, a short-term approach to literacy provision, in part because it has traditionally made it easier to fund new projects than to continue funding currently existing ones. This has had the unfortunate outcome of meaning that successful projects have often not been eligible for refunding – perhaps based on the theory that project success would attract ongoing funds from different sources (Veeman, 2004). As Veeman observes, this means that Canadian programmes tend to devote a high percentage of staff resources to fundraising, writing grant proposals, and fulfilling auditing requirements, to the detriment of teaching and learning.

According to Dutch interviewees, lack of funding is the primary barrier to better policy and programmes. Recent years have seen large funding cuts for all areas of adult basic skills. With regard to the citizenship aspect of Dutch language policy, there was previously a budget to finance provision for migrants, but this has now almost totally disappeared. Immigrants have to finance courses themselves, but they can get student loan to do this from a central body, with a 70% refund if they pass. This is lost if they fail. Almost half the annual adult education budget goes towards funding for programmes for Early School Leavers; almost 10% of the adult basic skills budget is allocated to the 'Literacy for Living'. The budget covers only standardised courses, meaning that there is hardly any numeracy courses as funding in cities is directed to migrants (e.g. in Amsterdam).

Lessons for England

Understanding the nature of the English low-skilled population is vital if policy makers are to be able to allocate limited funds to maximum effect. Policy makers should also ensure that funding is long-term in nature to allow providers to understand local need, develop appropriate provision and build capacity.

6.3.4 Decentralisation

In some respects, the federated structure in Canada could be a strength of its basic skills system; it should, in theory, provide a natural laboratory for experimentation and innovation, and offer the scope to compare programme effectiveness. (The situation is similar in the Netherlands, where in theory the different municipal programmes could be compared, but where in practice this does not happen.) However, one interviewee stressed that in practice having 13 separate adult basic education systems means that it takes considerable time and effort to apply successful measures from one province to the rest of the country, especially in the absence of pan-Canadian voice. The United States, in contrast, has a strong national voice for adult basic education within the federated structure.

One key lesson to be learned from Canada is the importance of policy coherence and coordination. It is possible for provincial and territorial education systems to perform well and even excellently in the absence of central government funding and oversight: witness the excellent PISA results of some Canadian provinces. However, in all provinces, Canada's basic skills offer is characterised by its, 'hodgepodge' nature – it is neither coherent, nor systematic (Shohet 2001; NRDC 2011). As the Movement for Canadian Literacy concluded (2003, p. 6):

> *The lack of consistent and adequate funding, vision, strategy, and coordination has meant that literacy [and other basic skills] needs have tended to 'fall through the cracks.*

According to Canadian policy experts, this decade-old observation is still true in 2014.

The absence of policy is itself a policy. In lieu of coherent national and/or provincial/territorial policies, adult literacy in Canada remains fractured and piecemeal. Literacy education in Canada tends to be community-driven, and provision is largely provided by volunteer agencies. These agencies are *'numerous and fragmented'* and *'rarely have core funding for operations, more typically relying on private donations and short-term project grants'* (Veeman, 2004, p. 172).

One Canadian interviewee contrasted the Canadian experience of the federated structure with that of the United States: the difference being that in the US there is a strong national voice within the federated structure.

In the Netherlands, where responsibility for basic skills programming is devolved to the municipalities, the scope is there to tailor provision to the specific needs within that locality – although this system requires a level of knowledge and understanding.

6.4 Programme strengths and weaknesses

6.4.1 Programme evaluation

Available evaluation evidence was very limited and there is more coverage of policy than of programmes in the literature, with the consequence that the lessons that can be drawn about specific programmes are often very high level.

Given the piecemeal nature of the Canadian adult literacy 'system', it is little surprise that evaluations of policy impact or effectiveness are unavailable. There do appear to be evaluations of some programmes or initiatives – for example, the Upskill workplace literacy and essential skills programme discussed in Sections 4.1 and Appendix 1. However, such evaluations have focused on the impacts of programmes on learners and firms during the discrete life of a demonstration project. There appears to have been little integration of such projects into broader policy objectives. Other major initiatives, such as the Job Grant scheme (see Section 4.1 and Appendix 1), have been monitored but not rigorously evaluated. There is no evidence in Canada of the rollout and evaluation of large-scale policies such as Sweden's 'Knowledge Lift' (Ministry of Education and Science Sweden, 1999; Albrecht et al 2005; Rubenson, 2006; Sternberg, 2008) and Finland's *Noste* initiative (Ministry of Education and Culture Finland, 2010). Nor is there evidence of the impact of policy on provincial or national skills levels. One interviewee praised the good work that had been carried out in Canada in the funding of large demonstration projects, and in world-leading research in workplaces and identifying the returns on investment, but pointed out that these efforts have not been sustained.

The Netherlands has had some success in increasing adult basic skills participation rates over the last decade. In particular, the 2006-2010 Illiteracy Action Plan (*Aanvalsplan Laaggeletterdheid)* was much more successful than the preceding 2002-2006 Literacy Action Plan (*Actieplan Alfabetisering)* at stimulating participation. This is attributed to the far greater resources afforded the later policy initiative, which had far greater funding (European Commission, 2008). While participation figures have been monitored using administrative data, there do not appear to be rigorous evaluations of these or other national-level policy initiatives. There has been at least one effort to measure the cost of adult basic skills programmes (Kok and Scholte, 2013), but no rigorous efforts to evaluate the impacts of provision on earnings, employment, health, well-being or other important outcome measures.

In terms of evaluations, there have been small-scale efforts – for example, a study assessing the impacts of workplace basic skills courses (e.g. Hansen et al., 2011). However, the focus of Norwegian programme evaluation work is on outcome measures such as learner satisfaction and firm satisfaction. These focuses are in keeping with the Norwegian emphasis on participation in adult learning as good in and of itself, and with a reluctance to evaluate policies and programmes on the basis of impacts on skills. One Norwegian interviewee emphasised that there was a danger that the need for accountability to government for spending could work against programme efficiency and argued for more trust between government and programme implementers.

Analysing the Korean adult literacy system, Byun et al. (2011) highlighted a number of successes. These include decreasing the once very high illiteracy rate, an accomplishment primarily driven by expanded and improved compulsory education. Adult literacy programmes have played a role in providing compensatory education for poorly educated

adults, particularly older people. More than nine in 10 participants in Korean adult literacy programmes are female. In terms of policy successes, Byun et al. also point to the high levels of cooperation between central government, local government, NGOs and private providers in Korea.

Neither the literature review nor consultation with in-country experts revealed examples of rigorous policy evaluations. Byun et al. (2011) document enrolment figures for various literacy programmes over the years, but these figures are not, for example compared against baselines or against targets. Both Korean experts felt that the country had had some success in increasing participation amongst some groups of women, but had failed to – and indeed had not even tried to – increase participation amongst other groups. There is no known evidence about the impact of Korean basic skills policy on skills levels, employment or other outcomes.

Lessons for England

Policy makers in England should ensure that funding is made available for rigorous evaluations of literacy and numeracy initiatives. Such evaluations should take a broad view of the possible impact of provision rather than focusing on short-term, more easily measured outcomes.

6.4.2 Workplace programmes

Norway has had great success with their Basic Competencies of Work Life programme, which has been running for since 2006 and is a good example of training in basic skills that is responsive to adults needs. It was felt by interviewees to be expensive, but effective. This programme has allowed policy makers to reach a target group that was not previously motivated to learn.

In the programme, employers get together with providers to create a tailored programme for literacy, numeracy and digital skills that is specific to the needs of the employees in that company. The learning is situated in the particular practices of the workplace (e.g. reading reports, or health and safety forms, not just any old texts).

Employers are centrally active in the programme having been convinced that the programme will increase the efficiency of the workplace. As 100% of the costs are covered by the government employers only have to release staff and provide a learning space. The courses are short, with some classes in work time and others in the employees' own time. The programmes are not accountable in terms of short-term improvements in skills, as measured in exams or standardised tests, but rather in terms of soft outcomes such as self-confidence and so forth. It should be noted that in Norway targets are not so important – there is more trust.

Lessons for England

Workplace programmes should be tailored to the needs of the workplaces in which they are situated in terms of the relevance of the content of the training to the literacy and numeracy demands on the workforce and should ensure that they cause minimum disruption to the smooth running of the business.

6.4.3 Programmes for immigrants

Regardless of the overall national performance in PIAAC, concerns over the performance of immigrant populations – and measures that were being taken to improve it – emerged as a central theme in discussions with national experts. While the number of migrants to Korea is still very low, Canada, Norway and the Netherlands all have large migrant populations. In all three countries these populations performed poorly on PIAAC relative to the native-born population, especially in literacy. In the Netherlands, first generation migrants were more than four times as likely as the native born Dutch population to perform poorly in this domain. However, this is likely to be a generational effect: second generation migrants were only slightly more likely than ethnic Dutch to have Level 1 literacy. As in Norway, the gap in literacy performance between the native born Dutch population and foreign-language immigrants is roughly equal to the OECD average. Though Canada has a reputation for 'cherry picking' high skilled immigrants, the literacy performance of recent foreign-language arrivals to the country was relatively poor. Canada is currently undertaking further investigation of PIAAC data in order to better understand this phenomenon and how to address it.

Canada, Norway and the Netherlands all have extensive language policies and programmes targeted at migrant populations. In Canada, this is one of the few substantial areas of basic skills controlled by the federal government. In the Netherlands, where anti-immigrant sentiment makes it difficult to have rational policy discussions about language policy, this is closely – and, according to experts, negatively – intertwined with migration policy.

Norway is less hampered by broader political debates and has a well-developed, language policy with a legally enshrined 'Introduction Scheme', which gives rights and obligations to many migrants and to the government. The former are required to take Norwegian language and social studies courses, while the latter is required to offer these courses for free. The aim is successful learning of the language and adaptation to the culture. However, in this emphasis on language and civic education, the basic skills needs of immigrants can be overlooked.

Lessons for England

Immigrants often need support in developing their literacy as well as their numeracy skills. Policy makers should seek to understand the nature of the skills of the immigrant population in order to be able to develop appropriate provision. Policy makers should also consider whether the current relationship in policy between language proficiency and immigration status is helpful.

6.4.4 Programme quality

Not surprisingly given the lack of funding, volunteers deliver much of the literacy instruction available in Canada. There is no general agreement nationwide regarding how adult literacy teachers should be trained and assessed (McKenna and Fitzpatrick, 2004). The Movement for Canadian Literacy has long encouraged the professionalisation of the sector, but with little success. Lack of professionalisation may have significant impacts on quality, suggests the National Literacy Secretariat (NRDC, 2011). For example, volunteer, minimally trained teachers are unlikely to utilise new teaching methods, e.g. with regard to ICT.

Policy experts suggested that the Netherlands government does not engage in sufficient regulation or oversight of the quality of teaching and the quality of provision and seems to lack a vision about what is good quality in adult education. This is in contrast to other sectors of the education system, which have higher levels of quality assurance. The quality of provision in the private sector is very variable, and there is no system of quality measurement. There is a skills framework that sets out what adults should be able to do at certain levels – so there are standards for learning outcomes. Although there is an inspection system for public sector providers, in practice no literacy courses have been visited, and the inspectors have no remit to inspect private providers.

Although, in principle, literacy and numeracy are embedded into all vocational learning for young adults in Norway, the quality of the teaching is not sufficient to solve this problem. Vox, the Norwegian Agency for Lifelong Learning, is advocating for better training in teaching of literacy to adults. According to one interviewee, teachers in Norway do not understand that if young people have gone through ten years of compulsory school and not had their literacy issues addressed, then the same teaching approach is not going to work in upper secondary. Vocational schooling in Norway is quite theoretical; teachers have had training in teaching children, but no training in how to deal with 17 year olds.

Lessons for England

Literacy and numeracy provision in England is often cited as a model to follow, with particular praise for our approach to teacher training and for the coherence of our research in this area. However, there is a danger that we will fail to build on the gains made through the Skills for Life programme in building capacity in the sector and that future policy makers will be faced with the task of rebuilding that capacity at a future date as practitioners leave the provision and contraction of funding means that newly qualified teachers struggle to find enough work to sustain a career[30].

[30] House of Commons BIS Select Committee Report, 5th Report of Session 2014-15: Adult Literacy and Numeracy; http://www.publications.parliament.uk/pa/cm201415/cmselect/cmbis/557/557.pdf (last accessed 28 September 2014)

Appendix 1: Case studies

A1: Canada

Canada's performance in ISAS 2012 does not differ markedly to England's. Canada was ranked 11/23 in literacy and 14/23 in numeracy; performance in PS-TRE was higher, at 7/19. Although it met neither the high-performing nor improving criterion, Canada was selected as a case study for this report for three reasons: 1) the similarity to the English context (in age and skills profile; in social, culture and economic characteristics; 2) the availability of robust evaluation evidence on workplace skills, where Canada is a world leader, and 3) the Department's interest in another Anglophone country. Two expert interviews were conducted: one with two senior civil servants, and one with a senior figure in a Canadian literacy organisation. In place of a native language review, an in-depth look at the Canada Job Grant and other training policies was commissioned from the Centre for Literacy in Quebec. A total of 17 sources were examined, including the national PIAAC report and an RCT of a workplace demonstration projects. All sources are listed in Appendix 3; an anonymised list of interviewees is included in Appendix 2 iii).

A. Adult basic skills in Canada

Overview

In Canada's federal structure, constitutional responsibility for education and training is held by the 13 provinces and territories. Nevertheless in 1988, the federal government involved itself in adult literacy and created the National Literacy Secretariat (NLS), through which it supported the 'creation of an infrastructure of provincial/territorial coalitions of literacy organizations, of resource centres and of electronic links' (Shohet, 2001) as well as funding research and teaching publications. In 2007, the NLS was replaced by the Office of Literacy and Essential Skills (OLES), which played a similar role within a narrower focus: the federal government gradually became focused almost exclusively on literacy and essential skills (LES) for workplaces. In relative terms, the total federal budget of LES programming is small. (The current total LES budget at OLES is pegged at $25 million annually until 2017.) Although the bulk of LES programming is funded, directed and evaluated at provincial level, the federal government is responsible for some policy areas throughout the country – for example, language acquisition programmes for migrants/newcomers. The government also funds Labour Market and Training development on a large scale for Aboriginal Canada – and these programmes primarily focus on skills gains. Rather than practices, the focus here is on workforce development/preparation for workforce participation; skills gain is measured as a function of preparing individuals for labour market participation.

At provincial level, there is an additional 'system' (or, more accurately, sector or sub-sector) for adult LES programmes and projects. These are funded in hundreds of different ways through hundreds of different organisations. Some provincial provision is sophisticated and some is not; some is organised from a community participation perspective, some from a social justice perspective and some from a labour force development perspective. Funding is drawn in a number of ways: provinces can draw federal funds, can raise funds themselves, and there are philanthropic initiatives.

At the time of writing, important policy developments were happening in Canada, with potentially significant implications for a range of policy stakeholders (Centre for Literacy, 2014). These changes are not explicitly connected to PIAAC, but driven by broader policy trends associated with the economic crisis and the policy direction of the current Conservative government, which has been in office since 2006, and majority government since 2011. Changes include a de-funding of much research – even in areas of particular policy interest, such as workplace LES, and even in light of promising findings regarding the potential impacts of such programmes – and de-funding of national bodies seeking to link policy, practice and research across provinces. Similar research de-funding has occurred in other policy areas, including environment, citizenship, and science; for example, Statistics Canada has had its funding cut and no longer carries out a long form census.

Despite the country's well-deserved reputation for research excellence in the field of adult literacy, language and numeracy (see e.g. the Upskill workplace basic skills programme evaluation (Gyarmati et al 2014), Canada lacks anything that could be considered a cohesive, coherent or systematic policy approach to adult basic skills. As Veeman argued in 2004, 'There has been a lot of talk but little concrete action' on policy (p. 178). While there are national literacy organisations in Canada, the country lacks a formal basic framework for adult education policies, and adult literacy education is provided largely through the volunteer sector (Veeman, 2004).

These criticisms continue to be accurate in 2014, as do others levelled in the interim. Even at the provincial level, approaches to adult literacy tend to be project-based rather than systematic and well-integrated into policy. For example, according to Belanger and Tuijnman (1997), 'Adult education is provided by a bewildering array of sponsors […] Most of them depend heavily on user fees for support' (pp. 18-19). As the Movement for Canadian Literacy (2003) observed, 'The lack of consistent and adequate funding, vision, strategy, and coordination has meant that [basic skills] needs have tended to "fall through the cracks"' (p. 6).

Similarities and differences with England

Canada has a similar age and skills profile to England and also shares similar traits in terms of parental education (an important predictor of performance across all domains) and labour market measures. Despite Canada's federal structure, the country has many social, cultural and economic similarities to England. However, with respect to making comparisons, it is important to note that rural northern Canada has a social and economic fragility that makes it that are unlike anything in Europe. Although the large metropolitan centres, and the small towns that orbit these in Canada's heartland, are characterised by good infrastructure and capacity, the north is marked by isolation and distance.

B. PIAAC results and their reception

Canada's performance in PIAAC

Canada is an average performer in literacy. However, there is wide variation around the mean: Canada has a larger than average proportion of its population at both the highest and lowest levels of literacy (Statistics Canada, 2013). Canada ranks below the OECD average in numeracy, and the proportion of Canadians at the lower level is greater than the OECD average. In PS-TRE, Canada ranks above the OECD average. Only Sweden

exceeds Canada in the proportion of its population at the highest level of PS-TRE proficiency. However, once differences in educational attainment are taken into account, Canadians' performance on PS-TRE looks less impressive: a relatively high proportion of Canadians have post-secondary educational credentials, and those who do score higher on average in PS-TRE than the general population. 2014 reports from Essential Skills Ontario and Canada 2020 note that young Canadians with post-secondary education credentials were actually below average in PS-TRE compared to their OECD peers[31].

A snapshot of literacy and numeracy skills in 2003 and 2012 shows differences in scores and proficiency levels. In 2012, a lower proportion of Canadians were at Level 4 or 5 and a higher proportion at Level 1 or below, as compared to 2003.

Factors potentially influencing PIAAC results

Any consideration of the adult education landscape in Canada has to take note of the huge variation across the provinces and territories – probably the only country that is comparable in the OECD is Australia. This variation is evident in the PIAAC results. In general, Canadians living in western provinces scored more highly. Nunavet, the newest territory in the confederation (joined 1999), is also the most geographically vast, but due to a small and almost entirely Inuit population is ranked very low. In contrast, the Yukon, while also geographically remote, scores very near the top in PIAAC measures, due to much higher levels of human capital. Yukon's population is transported from the south, and is highly educated, working in mining, oil and gas; or in government. These LES outcomes are generally seen as being driven not by significant cross-province differences in education policies or programmes, but by differences in socio-economic status, access to resources, geography and other factors that may be beyond the control of educationalists. For example, Aboriginal People in urban areas typically out-perform their rural counterparts on PIAAC.

Canada is a nation of immigrants, and has relatively high proportions of foreign-born and foreign-language speaking immigrants compared with other OECD countries. Belying the country's reputation for 'cherry picking' high skilled immigrants, immigrants to Canada are less likely than high performing countries to have at least one parent who had completed upper secondary education or higher (OECD, 2013).

A higher proportion of Canadians engage with information and computer technologies than the OECD average. This was attributed by a senior civil servant to Canada's early and relatively comprehensive adoption of policies aimed at encouraging access to and use of ICT – e.g. policy seeking to make high-speed broadband available to all Canadians. However, such policies have as yet been able to address issues related to Canada's vast geography and the isolation of some remote populations.

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[31] Essential Skills Ontario. (2014, April). Young adults in PIAAC: What will the future skills distribution look like? The Essential Skills Bulletin. Available at: http://www.essentialskillsontario.ca/sites/www.essentialskillsontario.ca/files/Essential%20Skills%20Bulletin%204%202014_Young%20Adults%20in%20PIAAC.pdf and Munro, Daniel. (2014). Skills and higher education in Canada: Towards excellence and equity. Canada 2020. Available at http://canada2020.ca/policy-papers/skills-and-higher-education-in-canada/

Canadian reaction to PIAAC

Experts interviewed for this study described reactions the Canadian reaction to the PIAAC results as 'muted'. They contrasted the lack of strong response from government to the reactions from Statistics Canada and the media to previous international assessments. In late 2005, when results from IALS were released, both the Statistics Canada release and media reports noted the 'lack of progress' since IALS 1994 and the large proportion of adult Canadians scoring less than Level 3, which at that time was held to be the 'minimum' level for functioning well in today's economy and society. Even though the PIAAC results were very similar, Level 3 was no longer being presented as a benchmark and no comparisons were made with these other surveys. In presenting the results, both Statistics Canada and the Council of Ministers of Education were relatively upbeat, focusing on Canada's 'above average' performance in PS-TRE .

Although it was not as pronounced as in England, the performance of younger Canadians in PIAAC declined compared to previous studies. Unlike in England, there was little political or media response to this with more attention given to PISA results and provincial SATs results, both of which were released in the same time window as the Survey of Adult Skills. In large part, the slightly poor results for the younger cohort were expected given the performance of some of this cohort in PISA.

In general, the results were viewed as a vindication of a well-functioning public education system, and in keeping with high levels of participation in post-secondary education in Canada. In other words, the provincial governments, which make major outlays in public education, could see from PIAAC that this investment results in a largely literate population. At the federal level, work on analysing the results is ongoing, with reporting, including six thematic reports, expected in the next 12 months. Expert interviewees did note that the PIAAC results were used to vindicate the federal government's decision in 2012 to establish numeracy as a priority for schools in Canada. There is no anticipation that the federal government will take a radical policy steps as a result of PIAAC. Instead there will likely be evolutionary change to existing policy and programme strategies, with these changes driven primarily by broader policy trends.

C. Cohort-specific performance in PIAAC

There are notable variations in scores across provinces and territories, in all three domains. Of note in analysing Canadian results is that Canada took by far the largest PIAAC sample, including oversamples for every province and territory[32], for Aboriginal peoples off-reserve, for immigrants, and linguistic minorities, therefore rich data is available for these sub-sets of the Canadian population[33].

There are two groups where Canadian policy experts saw special cause for concern: immigrants and Aboriginal peoples.

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[32] Although in Canada PIAAC was undertaken principally by the federal government, there were unprecedented levels of participation from other levels of government and provincial governments provided money to increase sample size and brought their research and analysis capacity to the table to interpret the results.

[33] The Centre for Literacy, Quebec, has compiled early reactions to and analyses of the PIAAC results for Canada: http://www.centreforliteracy.qc.ca/news/early-analyses-responses-piaac#cda

Migrants

The relatively poor performance of new arrivals to Canada was concerning. According to senior civil servants, more needs to be understood what is driving these results. For example, are they primarily a factor of relatively poor levels of human capital amongst some migrant groups? Canada is currently undertaking further analysis of the data to investigate this issue.

Aboriginal Peoples

The low performance of Aboriginal populations was not surprising and was consistent with what is known about a range of pre-existing factors. This said, results indicate that in some areas gaps between the aboriginal and mainstream populations are closing. This may be the result from differences in performance between urban Aboriginal populations and rural populations living on reserves.

Age cohorts

With regard to age cohorts, literacy and numeracy scores are highest at ages 25 to 34, and are lower among the older age groups. Individuals aged 16 to 34 are found to be the most proficient, in PS-TRE. Despite higher levels of proficiency in PS-TRE among youth (16 to 24), 9% display proficiency at the lowest level in PS-TRE.

In contrast to the gradual decline in skills across age cohorts that is typical of most countries, Canada saw a bell arch, with younger people performing relatively poorly compared to their peers in other OECD countries. This was also the pattern found in England. Although there was some surprise in Canada at this, these results for young people were in keeping with the most recent PISA results. Canada's first PISA (2000) results were high – but since then Canada has been both getting surpassed in the rankings by countries which are new participants in the exercise and there has been a clear slight downward trend – which became significant at 95% confidence intervals in the latest PISA round. The 15 year olds who scored so well in PISA 2000 are too old for the youngest age cohort in PIAAC.

In interviewees there was speculation from civil servants that declining performance may be linked to changes within the school population that have taken place over the last decade and which may have diversified the survey population to now include young people who may once have been selected out of assessment exercises. For example, considerable efforts have been made to integrate people with disabilities (included physical, mental and cognitive impairments) into mainstream education. One senior civil servant also speculated that the trend may reflect 'test fatigue': the introduction into formal education of a number of test that are similar in form to PIAAC but which have far more importance to test takers: it should be noted that the interviewee acknowledged that many people were not persuaded by this argument.)

Similarities and differences with England

As in England, younger cohorts performed less strongly than older people.

D. Basic skills provision

Policy and programmes

While the provincial nature of Canadian education and training provision make it difficult to provide a brief overview of adult basic skills policies and programmes, there are some consistencies at federal level. In terms of the purposes of LES in Canada, the federal government emphasises labour market preparedness and outcomes. Central government provides little support for family and community literacy initiatives – all of which used to be important policy interests (Shohet, 2001). The same holds true for health literacy initiatives: at one time these were integrated under one federal policy frame, but since 2007 health is no longer supported under the framework unless there was a labour market related outcome.

The largest LES-related policy shift in recent years has been the introduction of the Canada Job Grant, which has sought to shift policy emphasis from the suppliers of training to potential demanders of training, particularly employers. Currently, employers invest very little in adult basic skills training as compared to other kinds of learning (Gyarmati et al., 2014). Government would like to increase employer interests in basic skills, and sees this as a potential means for lessening lifecourse-related skills decline. Under current policy, central government will match employer investment in basic skills training, and funding goes to employers rather than providers. This means that employers are responsible for buying in training, rather than providers being responsible for finding learners. At the moment, employers still lack in knowledge of how to use the funding, and so the change has had a limited impact so far.

As noted in Section 4.1, research in this area has recently been de-funded, with potential negative impacts on policy and programme development.

The new minister has been on visits to Germany and the UK to learn about skills training systems and innovative approaches.

Strengths, weaknesses, challenges and barriers

According to a senior civil servant, Canada's biggest lever is its public education system and the biggest impact will come in the decisions provincial ministries make about preparing students for entry to the workforce.

All case study interviewees felt that Canada’s strengths and weaknesses were closely related. In particular, the federal system means that there are 13 separate adult basic skills systems. This presents the opportunity for cross-province research, as well as local responses to local needs. However, limited funding and lack of policy coherence means that in most and perhaps all provinces and territories, the adult basic skills sector is underdeveloped. Successful policies, programmes and research streams struggle for sustainability in the absence of extensive federal commitment (Veeman, 2004).

A senior literacy NGO figure expressed the opinion that politicians’ limited conceptual understanding of literacy is the primary barrier to improved policy making. This figure argued that the current government has taken a simplistic, reductivist perspective on literacy, seeing it in binary terms, wherein individuals either can or cannot read and write, and either can or cannot function in society because of their literacy levels. This is seen as

a step backwards and as evidence of ignorance of large bodies of quantitative and qualitative research, much of which has been conducted in Canada. There are worries that low literacy and numeracy are seen by the current government as an individualised *crisis* which can be fixed by a 'magic bullet' approach, as opposed to a societal *condition* which will only be meaningfully improved by a multi-pronged, long-term strategy. Using a public health analogy, this NGO leader worries that politicians with insufficient experience in and understanding of the field view basic skills as a problem more akin to cholera than to obesity. Nineteenth century problems such as cholera proved highly amenable to relatively straightforward dose-response policy levers – e.g. cleaning up the water supply. More modern health problems such as obesity have proven far less 'fixable', because they are far more complex. In terms of literacy, this interviewee argued that current policy messages, while appealing to politicians at a macro (e.g. national economy) level, do not take sufficient account of individuals' experiences and objectives at the micro level. This makes it difficult to move a broad agenda forward.

This stakeholder argued that Canada requires a cross-departmental, pan-Canadian policy approach recognising the numerous factors (and thus policy department) influencing adult basic skills, and the numerous departments that stand to gain from improvements in such skills. This would require a high degree of joined-up policymaking, as well as a broader conceptualisation of LES: a conceptualisation that took account of the importance of basic skills to the labour market, but that also recognise that a focus on literacy practices was required in order to produce sustainable improvements in literacy proficiency.

For the senior civil servants we interviewed, skills demand is a key policy challenge. Governments seek to increase the supply of basic skills, but perhaps do not do enough to ensure that those skills are in demand in the workplaces. While higher-level jobs require increasingly complex skill sets, many lower-level jobs have been 'dumbed down' by technological advances. This may contribute to skills atrophy, even in the employed population. For this civil servant, there is a need for policy to find ways to increase demand for and uptake of skills, particularly in the labour market, where there is a danger of a low skills equilibrium.

Targeted programmes

Because of the provincial, project-based nature of most adult basic skills provision in Canada, there are a number of very small targeted programmes. However, the vast majority of these are outside of central government control or influence. In terms of targeted federal government programmes, these are primarily directed at Aboriginal populations. The Federal Government has also signed billion dollar agreements with the provinces to provide employment benefit and support measures including programmes to make it easier for unemployed people to get back quickly into the labour market. Provinces run a myriad of interventions through this: at one level the federal government sets broad guidelines and the agreements require a certain level of reporting.

Evaluation evidence

Given the piecemeal nature of the Canadian adult literacy 'system', it is little surprise that evaluations of policy impact or effectiveness are unavailable. There do appear to be evaluations of some programmes or initiatives – for example, the Upskill workplace literacy and essential skills programme discussed in Sections 4.1 and Appendix 1. However, such evaluations have focused on the impacts of programmes on learners and firms during the

discrete life of a demonstration project. There appears to have been little integration of such projects into broader policy objectives. Other major initiatives, such as the Job Grant scheme (see Section 4.1 and Appendix 1), have been monitored but not rigorously evaluated. There is no evidence in Canada of the rollout and evaluation of large-scale policies such as Sweden's 'Knowledge Lift' (Ministry of Education and Science Sweden, 1999; Albrecht et al 2005; Rubenson, 2006; Sternberg, 2008) and Finland's *Noste* initiative (Ministry of Education and Culture Finland, 2010). Nor is there evidence of the impact of policy on provincial or national skills levels.

It has not yet proven possible to compare spending on adult LES programming across provinces because they do not use a common framework or policy objectives; by extension, it is impossible to calculate aggregate spending on this sector. Most spending happens in provinces and territories.

However, Canada has been a world leader in the study of the impacts of workplace literacy and essential skills programmes. Such studies include Measures of Success evaluation, which focused on measuring Return on Expectations (Social Research and Demonstration Corporation, 2011). A more recent study focused on workplace programmes' Return on Investment (ROI). The 'Upskill: Essentials to Excel' programme was a pan-Canadian research study measuring the impacts of and returns on workplace literacy training. The programme was implemented in eight provinces at 110 firms, involving nearly 1500 workers. In addition to measuring workplace basic skills programmes' impacts, the study sought to understand the conditions through which training could be most successful and ROI could be maximised. The intervention involved an average of roughly 20 hours of training per employee. In contrast to a number of large-scale workplace literacy programme studies in other countries (Vorhaus et al., 2011), the Upskill study found significant financial return on investment (Gyarmati et al., 2014). While this return was only 25% when employers bore the full cost of the programme (approximately £1275 per employee), the return was 130% when employers took advantage of the federal Job Grant.

A2: The Netherlands

The Netherlands was a high-performing country in all three dimensions in ISAS 2012, ranking ranked 3/23 in literacy, 4/23 in numeracy, and 3/19 in PS-TRE. In addition to meeting these criteria, the Netherlands was also selected as a case study for two reasons: 1) lessons were likely to be applicable to the English context; 2) the influence of the English Skills for Life programme on current Dutch basic skills policy. Three national experts were interviewed in two interviews: one with both an expert on international assessment and a specialist in international adult education and basic skills and one with a Director of a campaigning organisation. Four native language sources were translated. A total of six sources were examined, including an evaluation of the economic returns of investing in basic skills programmes. All sources are listed in Appendix 3; an anonymised list of interviewees is included in Appendix 2 iii).

A. Adult basic skills in The Netherlands

Overview

The Netherlands' Ministry of Education, Science and Culture is responsible for adult basic skills provision, including language courses for adults learning Dutch as a second language. Numeracy is included in basic skills; since 2012 the definition of 'literacy' in the Netherlands includes language, numeracy and literacy skills (before 2012 the skills were treated separately). Under recent Dutch law, new immigrants have to pass a Dutch language exam within three years, and leave to remain in the country is linked to passing the exam. This aspect of adult language courses is explicitly linked to immigration and naturalisation policy, and thus comes under the oversight of the Ministry for Social Affairs.

Basic skills provision used to be organised at a national level, but have recently been devolved to the countries' 400-plus municipalities, who receive funding from central government to purchase and provide education services, in whatever mix is deemed appropriate by the municipality. This devolution is part of larger devolutionary trends across a range of policy areas. The Netherlands is currently crafting approximately 35 regional partnerships which will make basic skills decisions. Municipalities – many of which lack expertise in this area – are being advised by NGOs with regard to what to look for when purchasing provision.

Private providers play a central role in provision: about 10-15% of adult education programmes are provided by regional education centres and the rest by private companies. Recent years have seen large funding cuts: according to an interview working in the sector, the budget has fallen from around 400+ million Euros per year down to 53 million per annum.

The objectives of adult literacy and numeracy provision differ across municipalities. Some municipalities favour a focus on teaching which emphasises literacy practices and learner engagement, while other municipalities' provision focuses more on skills for employment. Differences across municipalities tend to be driven by political values. For example, provision in Amsterdam tends to focus on more 'left-wing' values, such as social inclusion and family literacy practices, or provision in Rotterdam emphasises skills for employment, and links participation to the receipt of welfare benefits.

With regard to the citizenship aspect of Dutch language policy, there was previously a budget to finance provision for migrants, but this has now almost totally disappeared. Immigrants have to finance courses themselves, but they can get student loan to do this from a central body, with a 70% refund if they pass. This is lost if they fail. The money must be put towards officially recognised courses.

Similarities and differences with England

While markedly smaller than England in terms of population, and notably different in terms of economic inequality, the Netherlands wrestles with many of the same policy challenges as England, including high levels of immigration. Immigration is a highly visible political issue in both countries, and the Netherlands has had interesting and contentious language policy developments. In recent years, the Netherlands has sought to learn lessons from England, and to build on England's earlier experiences, e.g. Skills for Life.

B. PIAAC results and their reception.

The Netherlands' performance in PIAAC

Adults in the Netherlands show above average proficiency in all three PIAAC domains. Nearly one in five adults (18%) in the Netherlands (aged 16-65) attain the two highest levels of proficiency in literacy (Level 4 or 5) compared to the OECD average of 12%. Seventeen percent of adults in the Netherlands attain Level 4 or 5 in numeracy compared with the OECD average of 12%. In PS-TRE, 7% of Dutch adults are proficient at Level 3, compared to an OECD average of 6%. Young adults (16-24 years old) in the Netherlands score highly in all three domains.

At the lower end of the scale, 12% of Netherlands adults achieved only Level 1 or below in literacy proficiency (compared with the OECD average of 16%). Thirteen per cent of Netherlands adults attain Level 1 or below in numeracy (compared with the OECD average of 19%). 45% score at or below Level 1 in problem solving in technology-rich environments. Amongst poor literacy performers in the Netherlands, about 3% have very poor literacy skills while 9% have poor (but somewhat better) skills (Buisman et al., 2013). Low literate adults tend to be older (22% of the 55-65 age group) and to have lower levels of education.

The low skilled population in literacy is very diverse. Adults with low literacy tend to be older (22% of the 55-65 age group) and have lower levels of education (42%). A higher proportion of those with low literacy are first generation migrants (37%) compared to second generation migrants (9%) and native Dutch adults (8%). Overall, about 65% of low literate adults are native-born and 35% are migrants (mainly first generation). Although most low literate people work (57%), there is a strong relationship between literacy skills and unemployment; especially when the duration of unemployment is taken into account. Nine per cent of employed working adults and 11% of those who have been unemployed for less than 12 months have low skills, compared to 22% of those who have been unemployed for more than a year (Clement & Buisman, 2014).

Factors potentially influencing PIAAC results

The Netherlands has relatively low levels of income inequality and unemployment. Compared to other OECD countries, the Netherlands has a higher than average proportion

of managerial and professional occupations, and a higher than average proportion of the workforce employed in the public administration, education and health sectors. Dutch working hours are, on average, amongst the shortest in the developed world.

The Netherlands has relatively high levels of immigration. Compared to migrants to the UK, migrants to the Netherlands are less likely to have familiarity with the host country language. The Netherlands performs at roughly the OECD average for at least one parent attaining tertiary level education, but has higher than average levels of participation in adult education, both formal and informal.

The proportion of young people who are not in education, employment or training (NEETs) is strikingly low, at only 4%. Most other high-performing and improving countries have NEET rates of between 8% and 11% (the OECD average).

In the Dutch school system, the split between general and vocational education occurs at age 12.

Reaction to PIAAC

In the Netherlands, the government reaction to the PIAAC results was largely one of 'happy complacency'. The PIAAC results contained few surprises as results from previous assessments such as IALS and ALL were very good; if anything, the PIAAC results were better than anticipated.

This said, there were some unwanted surprises, e.g. an indication that the gaps between those at the lowest levels and highest levels in literacy are growing, for good reasons and bad: both the proportion scoring excellently (levels 4 and 5) and the proportion scoring at Level 1 increased. This result is seen to stem from a lower performance of immigrants and rising immigration (the proportion of native-born Dutch people scoring at Level 1 has not increased) and the lower performance of older age cohorts compared to younger. There are two likely policy impacts of this result:

1) The rise in the numbers performing at Level 1 may bring greater attention to the problem of low literacy, and
2) Poor results for many immigrants may stimulate policies aimed at addressing first and second generation immigrants – their low results are particularly stark given the exceedingly high performance of the native born population.

Despite the Netherlands' generally strong results in the OECD's Survey of Adult Skills, it was one of only five countries that performed worse in literacy on PIAAC than on IALS. (The others being Germany, Denmark, Sweden and Norway.) Between IALS and PIAAC there was growth of literacy Level 1 in three groups: older people (significant for those aged 45 and over), women (especially women over the age of 35), and those who do not speak Dutch as their home language. The increase in Level 1 performers for these three groups, may be linked to the lack of policy attention (at least on older people and women) resulting in fewer programmes and less funding. In the wake of PIAAC, a new project targeted at women learners only, is being developed by the Reading and Writing Foundation.

Experts in the Netherlands said that they did not yet have a clear explanation for this decline, but were considering a number of possible influencing factors. These include a marked decline in funding for adult literacy and language provision over the last decade. There are hopes that the new Dutch Skills for Life programme, *Taal voor het Leven,* will have a positive impact. However, this programme did not start until the end of 2012.

Despite some ongoing studies, analysis of the Netherland's PIAAC data has not been as extensive as that in Germany, for example. This is attributed to a lack of funding, and the general sense that the country is doing well.

C. Cohort-specific performance

Migrants

Immigrants to the Netherlands have much lower levels of proficiency in the Dutch language than native-born adults whose first language is Dutch. For example, 37% of first generation migrants scored at Level 1 or below in literacy, compared to the 9% of second generation migrants, who were barely more likely than ethnic Dutch adults to score at this level (8%) (Buisman et al., 2013). Overall, about 65% of low literate adults are native-born and 35% are migrants (mainly first generation). However, the average literacy proficiency of foreign-language immigrants to the Netherlands is close to the average among foreign-language immigrants across all participating countries and higher than that observed in a number of European countries with large immigrant populations.

An important difference between the Netherlands and England is that there is less of a language barrier in England – first generation immigrants are more likely to have had some exposure to English than to Dutch and to do better in the UK than in the Netherlands. The immigrant groups with the poorest PIAAC performances are the hardest to reach.

The unemployed

Although most low literate people work (57%), there is a strong relationship between literacy skills and unemployment, especially when the duration of unemployment is taken into account. 9% of working adults and 11% of the short term unemployed (shorter than 12 months) have poor literacy skills, compared to 22% of the long term unemployed (Buisman et al., 2013).

Age cohorts

The youngest cohorts in the Netherlands performed very strongly in PIAAC. Interviewees emphasised the quality of the Dutch school education; and also the bearing on results that the school curriculum in the Netherlands may have. The skills being investigated in PIAAC – modern skills – are really about information processing and being able to use it, not literacy and numeracy in the traditional sense. The Dutch education system is geared towards these skills. Although there is a minority that disagrees with the approach and argues for a return to classical subjects, the curriculum is orientated towards these modern skills. This ties in with a general policy orientation in Dutch education where investment has been concentrated on primary and secondary levels rather than tertiary - e.g. special measures for schools who have pupils with certain demographic characteristics (like high

proportion of immigrants), which means extra money for these schools, amounting twice the normal amount per pupil sometimes (like the pupil premium).

Although PIAAC data show that 1 in 9 Dutch adults had problems with literacy and numeracy, for older people, this figure was 1 in 5. The difference in literacy proficiency between 16-24 year-olds and 55-65 year-olds is close to 34 score points, compared to the OECD average of 24 score points. This difference partly reflects the very high literacy proficiency among Dutch youth. It might also indicate skills decline over the life course – use it or lose it – and the fact that the compulsory education system has improved with time, with emphasis increasingly placed on the importance of good literacy and numeracy skills.

Similarities and differences to England

Although the language skills of immigrants are a concern to policy makers in the Netherlands and England, and there are important differences stemming from the higher language barrier to learning Dutch, the countries share the politicisation of area.

The main difference between the two countries lies in the performance of young people.

D. Basic skills provision

Policy and programmes

In 2002, the Dutch Ministry of Education Culture and Science launched the 2002-2006 Action Plan Illiteracy *(Actieplan Alfabetisering*) with the aim of reducing low literacy for a target group of 250,000 native- born Dutch people. Under this action plan, the central government provided the municipalities with a budget of €400,000, which was to be used to increase the number of adults participating in basic skills courses at Regional Training Centres *(regionale opleidingencentra* or *ROC*). With such limited funding available, the Action Plan was generally regarded as unsuccessful and participation rates increased only by a small percentage.

A more aggressive strategy was launched at the end of 2005 for the years 2006-2010 with the Illiteracy Action Plan (*Aanvalsplan Laaggeletterdheid)*. This new plan focused on media campaigns to highlight literacy problems, and efforts to encourage everyday literacy practices, e.g. through reading for pleasure and visiting local libraries, which provided special collections for low skilled adults. This plan received funding of more than €4m per year and included a central role for the Reading and Writing Foundation *(Stichting Lezen en Schrijven*) chaired by Princess Laurentien of The Netherlands. The revised strategy also included a television/multimedia project, *Lees en Schrijf!,* based on the *Read Write Now* TV series that ran in Ireland from 2000-2004.

A third action plan – the 'Low literacy action plan 2012-15' is now in place. This lifelong literacy plan is seen by government as a continuation of the previous action plan, albeit with significantly reduced budget. Drawing on extensive studies of England's Skills for Life strategy, including consultations with English experts, the strategy has three main aims: 1) to promote literacy among young people in order to prevent future problems, 2) to promote improved skills for adults with low literacy, and 3) to improve programme evaluation.

The Netherlands is working on a new law on participation, wherein the budget on social welfare and budget on adult education will be combined, into a budget for the social domain. In principle, this should contribute to joined-up policy making and programme development. In practice, however, stakeholders fear that, with higher unemployment, funds that are not ring-fenced for basic skills will be used for employment programmes or social benefits.

Strengths, weaknesses, challenges and barriers

Compulsory teacher quality is perceived as a weakness in the Dutch system: training programmes are perceived to be of a low quality, and trainees are themselves often lacking in literacy and numeracy skills, particularly at the primary school level. Teaching status in the Netherlands is low, so it is not an aspirational career. These factors are seen as having long term negative impacts on literacy and numeracy skills; however, the Netherlands' strong results would seem to suggest that these fears are exaggerated.

In adult learning, anyone with an education degree can become a teacher. Policy stakeholders have advised the government to create training programme that would require subject expertise and training in adult pedagogy. However, the Dutch government has proven reluctant to invest in this area. Potential teachers can receive this high level of training, but it is not subsidised. Given the insecure nature of employment in the adult basic skills field (e.g. reductions in budgets and changes to funding), it is difficult to encourage would-be teachers to invest in this training. This makes universities withdraw courses because they don't have enough students.

For the Reading and Writing Foundation a key weakness of the delivery of basic skills provision in the Netherlands is the quality of provision, and particularly the quality of teaching. Basic skills teachers in the Netherlands tend to be older people, and as they reach retirement they are not being replaced. There is no government intervention in teacher training and quality; there are no courses or qualifications in teaching literacy and numeracy to adults – instead it is expected that basic skills teachers will learn by being basic skills teachers. The private sector providers find it easier to ensure teacher quality; public providers however, are financially insecure and not making investments in basic skills education.

Stakeholder suggested that the Netherlands government does not engage in sufficient regulation or oversight of the quality of teaching and the quality of provision. This is in contrast to other sectors of the education system, which have higher levels of quality assurance. One interviewee suggested that, in comparison to England, compulsory education is better in the Netherlands, but England is better at providing basic skills provision to adults.

Politics impact negatively on basic skills provision and budget cuts affect quality. A weakness of the Dutch system comes with the fact that responsibility for literacy and numeracy has been given to the Ministry of Education, with the consequence that the Ministry of Social Affairs is not linked into this work, and the monopolisation by the Department of Education means that other departments are lacking in awareness of basic skills issues. For example, there are issues with benefits not going to migrants with low Dutch language skills, because Social Affairs doesn't understand about literacy.

Dutch language policy is highly politicised, making it difficult to address issues from an educational standpoint. Basic skills experts feel that the current Dutch language test, which is involves very high stakes for migrants who need to pass, encourages teaching to the test. The introduction of a formal test marked a shift in policy: previously language support for immigrants was very learner-centred, offering functional skills programmes individualised to learner needs.

In terms of positives, the Netherlands has a fairly strong tradition of joined-up policy-making, which basic skills may benefit from. Basic skills have been included in the government's core legislative programme for the next four years, focusing attention on the issue and giving organisations such as the Reading and Writing Foundation a mandate to approach ministries and urge them to include measures on increasing basic skills in their programmes, across a broad range of policy areas.

According to interviewees, lack of funding is the primary barrier to better policy and programmes. Before the government decided to make a new law (effective in 2015) there was an investigation that found the combined budget for adult education and immigrant education had fallen from €252 million per year in 2002 to €52 million. The budget does currently stand at €125 million per year for adult education, but only €52 million goes to basic skills.

Looking at other challenges, PIAAC highlighted important issues regarding skills use. The Netherlands performed highly in the three tested skills, but also has higher rates of unemployment and youth unemployment than, for example, Germany or the US, where skills levels are lower but the national economies are stronger. The UK was seen by one interviewee as being good at using the skills people have, the Netherlands as less good.

For all interviewees, a key issue is motivation to participate in courses. Most adults with low skills do not feel that they have a problem. Some stakeholders feel that, because of this, there should be a link between benefits receipt and attendance at courses. However, as another interviewee observed, people with poor basic skills are often in employment, and are not marginalised. Policy has to acknowledge that many people at Level 1 think there are skills are fine. Improving these people's skills will take a more than the offer of literacy or numeracy courses. It may require expanded emphases on everyday practices or other applications, e.g. computers.

Targeted programmes

One interviewee said that despite the lower performance of older adults in PIAAC, there is very little in place to address their needs. Older people are not a skills policy focus in the Netherlands; instead attention is focused on immigrants and on cohorts of the population who are still in the labour market; and on populations who are easy to reach through the existing education and training system, and especially through employers and businesses (which can be brought on board to co-fund any provision).

While Dutch education policy has not traditionally favoured targeted provision for particular groups, municipalities may ask for programmes for at risk groups. These groups, and the objectives of the programmes, may differ across municipalities.

The government dos not have specific target groups, although the Ministry of Education has just announced an initiative aimed at women, whose scores were behind in literacy and numeracy compared to men.

The Ministry for Social Affairs has responsibility for Youth Unemployment in the Netherlands, but neither the Task Force set up to address this, nor the policy paper, on the subject, refer to literacy issues – this is partly because education is dealt with by a separate ministry but may also be connected to the high youth performance in PIAAC.

Because educational budgets and decision making are devolved to local authorities, there is no national targeted programme or policy towards specific cohorts. In the case of provision to increase the literacy and numeracy skills of unemployed people, in Rotterdam unemployed people who fail a Dutch literacy/language test are required to attend provision (where they learn alongside adults learning voluntarily) or have their benefits reduced (Coalition Agreement, 2014-18). In Amsterdam, a more liberal city, there is no such requirement and attendance at provision is voluntary. The perception is that those attending mandatory provision in Rotterdam have learning outcomes as good as those attending voluntarily – although some people really don't want to go and won't. Rotterdam lobbied to get this made a national policy – that benefits would be given in return for something (for example voluntary work) but this failed and every city council has the right to decide for themselves. This rejection reflects a wider view that the receipt of benefits as a right – although this attitude might be changing, with the general public at least. But left wing cities are opposed.

There is basic skills provision for apprentices, but this is not organised at a national or even a regional level; it consists of small, local initiatives.

Evaluation evidence

Policy experts in the Netherlands drew attention to one recent cost-benefit analysis of adult basic skills programmes. This study, entitled ‘Return on courses for illiterate people’ (*Rendement van cursussen voor laaggeletterden*), calculated the financial costs of Regional Training Centre (ROC) provision, and estimated the potential returns to society (Kok & Scholte, 2013). However, as these were speculative estimates, and not based on longitudinal data on programme impact, it is impossible to judge their accuracy.

The study estimated that half-year literacy courses (69 hours) cost €2,000 to deliver (taking into account of those who drop out, around 40% of learners) and produce returns to society of €3,000 – a net return of €1,000 per student. These benefits were projected over a range of areas, including increased productivity in the workplace (higher wages), lower social support benefits, improved health and an increase in civic participation through volunteering. It is calculated from this that, with rates of 10,000 people embarking on with literacy courses annually, 6,000 completing the course, and an increase in literacy scores of 3.4%, the net benefit for the country as a whole would be €6 million. If all the 1.1 million illiterate people between 15 and 65 were to follow a course, this would generate arevenue of €700 million for society.

This aside, there are few robust evaluations of basic skills policies or programmes in the Netherlands. The evaluation above cited research by de Greef et al. (2012) on other basic

skills programmes delivered by ROCs, but noted that their conclusions on programme effectiveness were based on self-report evidence from learners and not on objective tests.

A3: Norway

Norway was a high-performing country in all three dimensions in ISAS 2012, ranking ranked 6/23 in literacy, 5/23 in numeracy; and 4/19 in PS-TRE. In addition to meeting these criteria, Norway was selected as a case study for two reasons: 1) as in England, the performance of young age cohorts was poorer than older cohorts; 2) Norway's strengths in adult learning and research. Two expert interviews were conducted: one with a senior government adviser and one with a senior figure at the Norwegian Agency for Lifelong Learning, Vox. A review of Norwegian language sources was conducted by a researcher at Vox. A total of 12 sources were examined, including a recent Skills Diagnostic report from the OECD. All sources are listed in Appendix 3; an anonymised list of interviewees is included in Appendix 2 iii).

A. Adult basic skills in Norway

Overview

Although the central government in Norway sets the goals and framework for the educational system in compulsory and further education, responsibility for provision sits with the municipalities. In terms of coherence and coordination, the adult learning sector is complex:

- Primary and secondary education fall under the remit of the Ministry of Education and Research and the Directorate of Education:
    - secondary education is administered by the county council
    - primary and lower-secondary education are administered by the municipality
- Re-skilling and employment activation training falls under the remit of the Ministry of Labour and the Norwegian Labour and Welfare Administration (NAV)
- Norwegian language training for migrants falls within the remit of the Ministry of Children, Equality and Social Inclusion and the Directorate for Integration and Diversity
- The Agency for Adult Learning (Vox) has the administrative responsibility for the Programme for Basic Competence in Working Life (BKA). The agency also coordinates career guidance and is in charge of curricular and pedagogical issues relating to the teaching of Norwegian and socio-cultural orientation to adult Immigrants (OECD 2014, p. 138-139).

A focus on functional literacy permeates current Norwegian educational policy at all levels. Literacy is no longer perceived in binary terms – literate or illiterate – nor as a set of autonomous skills to be mastered, but as the core component of communication in the 21st century. However, according to a senior basic skills NGO representative, the compulsory education system still tends to conceptualise literacy as either/or, with teachers believing that once children are able to read, literacy teaching is no longer required. However, many pupils who can read do not develop their literacy skills well enough to progress in education and employment. For this interviewee, continuing to develop a more nuanced conception of literacy development, and embedding this conception in the compulsory and further education systems, will be a key challenge for 21st century Norway. Although, in

principle, literacy and numeracy are embedded into all vocational learning for young adults, the quality of the teaching is not sufficient to solve this problem.

Norway has a strong focus on workplace basic skills programmes and on improving the literacy and language skills of immigrants. Throughout the Norwegian education system, the emphasis is on trust and 'soft accountability' rather than quantitative measures of accountability. Adult basic skills programmes, whether in the classroom or workplace, are assessed not on the basis of skills gains or qualifications gain for participants, but with regard to other metrics, such as participation, satisfaction, and impact on factors such as confidence and everyday practices.

Tri-partite cooperation between social partners and government is strong in Norway, and has been a key driver of reforms in adult education, including basic skills. In addition to providing adults with the right to education, these reforms have led to higher programme funding, employees' right to educational leave from work, and tax exemption when education is paid for by the employer.

Similarities and differences to England

England and Norway share similar characteristics in terms of the performance of their young people. Overall, there are similarities in terms of socio-economic background, immigration levels, and some labour market measures. Norway has a well-developed adult basic skills policy system, one which seeks to address many of the same policy concerns faced by England.

B. PIAAC results and their reception

Norway's performance in PIAAC

Adults in Norway show above-average proficiency in literacy and numeracy (ranking 6 of 21 countries in both domains) and PS-TRE (4/18). In Norway, 14% of working age adults attained the Levels 4 or 5 in literacy, compared with the OECD average of 12%. 17% of Norway residents achieved Level 4 or 5 in numeracy, compared to the OECD average of 12%. In PS-TRE, 6% of Norwegians attained Level 3, which was just slightly above the OECD average. 35% attained proficiency Level 2 in PS-TRE, compared with 28 of the broader OECD population.

At the bottom end of the scale, 12% of adults in Norway were at Level 1 or below in literacy, compared with the OECD average of 16%, and 15% attained Level 1 or below in numeracy (OECD average 19%).

Factors potentially influencing PIAAC results

Norway is one of the world's wealthiest countries in per capita terms, and, in terms of income distribution, is a more equal society than England. Only about 5% of Norwegian students are privately educated and all public education is free of charge until the age of 19 (OECD, 2014). Ninety-six percent of tertiary education is funded from public sources (OECD, 2014).

While the impact of socio-economic status on basic skills is comparatively low in Norway, some groups – particularly those characterised by low educational or immigrant

backgrounds –struggle to narrow the gap in attainment from one generation to the next. For example, in numeracy, second generation migrants in Norway perform relatively poorly and below the OECD average (OECD, 2014).

While the impact of socio-economic status on basic skills is comparatively low in Norway, some groups – particularly those characterised by low educational or immigrant backgrounds –struggle to narrow the gap in attainment from one generation to the next. For example, in mathematics, second generation migrants in Norway perform relatively poorly and below the OECD average (OECD 2014).

In Norway, adult learning is a statutory right. This includes the right to free primary education for adults who need it, including guidance to assess the individual's needs. Adults over the age of 25 who have not already completed their upper secondary education have the right to complete upper secondary education in accordance with the national curriculum. Validation of prior learning is a right for those who have a right to primary or secondary education. The length and scope of adult education and training is then adapted to this prior learning as well as the participants' specific needs (OECD, 2014). All adults have the right to get their working experience and knowledge acquired through non-formal and informal learning evaluated and validated. The validation process often leads to a partial or complete certificate of upper secondary education.

Providing equal access to lifelong learning for all adults in the country is an important principle of Norwegian educational policy, and there is a strong focus on adults with low levels of education. Their involvement in lifelong learning activities is promoted with a threefold objective: to enhance the quality of life of the individual, to benefit society by ensuring active citizenship, and to serve the interests of the country's economy by increasing adults' employability.

Norway's reaction to PIAAC

There has been no particular Norwegian government reaction to PIAAC. The Norwegian government, in collaboration with social partners, is currently undertaking a long-term process of collaborative working to produce a basic skills-related White Paper at the end of 2015, but this process is taking place independently of PIAAC. However, the Norwegian government did commission a broader skills analysis report from the OECD (2014).

C. Cohort-specific performance

The difference in numeracy scores between men and women in Norway is one of the largest – in favour of men – among all countries. Other important cohort effects are seen for migrants and young adults.

Migrants

Foreign-language immigrants to Norway have low levels of literacy proficiency in the Norwegian language, although the gap between this group and native-born, native-language population is no greater than the OECD average across other countries.

Age cohorts

Compared with their peers in other countries, Norway's young adults are below average in literacy and are average in numeracy.

Similarities and differences to England

As noted above, and throughout this report, the performance of the youngest age group relative to the oldest age group was very similar in Norway and England (although young Norwegians performed more highly).

D. Basic skills provision

Policy and programmes

In addition to classroom-based programmes, Norway has a well developed programme for providing basic skills training for their employees. The Basic Competence in Working Life (*Basiskompetanse i arbeidslivet*; BKA) programme is seeks to give adults the opportunity to acquire the basic skills they need to keep up with the demands and changes in modern working life and civil society. The BKA is funded by the National Budget via the Ministry of Education and Research, and is administered by Vox, the Norwegian Agency for Lifelong Learning, which is part of the Norwegian Ministry of Education and Research. Funding and participation in the BKA programme have increased every year since the programme was established in 2006, with the number of participants now exceeding 30,000. Special efforts are made to include small to medium-sized enterprises (SMEs) in the programme and to encourage applications from industries which employ people with relatively low formal skills. The programme concentrates on reading, writing, numeracy, and digital skills. Beginning in 2014 the BKA also includes oral communication in combination with other skills. Any enterprise in Norway, private and public, can apply for funding. The programme emphasises the following criteria:

- Learning activities should be combined with work, and basic skills training should preferably be linked to other job-relevant training, and
- The courses should increase participants' motivation to participate in additional learning.

All training in the BKA programme must be based on Norway's Framework for Basic Skills, which contains competence goals (national standards) for reading and writing, mathematics, digital competence and oral communication, teacher guidelines, systems and structures professional development systems, tests and tools. The descriptions of levels of competence for each of the basic skills are divided into three levels. The template is identical for all skills and all levels, and each level is described in detail in the form of intended learning outcomes. All the sets of competence goals are approved by the Ministry of Education and Research.

The BKA is viewed as expensive but successful, and as an example of Norway's typically collaborative approach to policy and programme development. Firms work with providers to create tailored programmes for literacy, numeracy and digital skills which are specific to the needs of the employees in that company. In the BKA, Norway places great emphasis on the relevance of basic skills training to the specific, situated practices of individual workplaces. This means that courses are of varying length, time of day, and focus.

Strengths, weaknesses, challenges and barriers

Norway is a world leader in terms of legislation regarding the right to basic skills. However, these rights, while enshrined in policy, are not always translated into effective programmes and practices. For example, central government declarations are not always accompanied by sufficient funding to enable municipalities to translate 'policy in intent' to 'policy in practice'. In seeking to improve the system, three ministries – Education and Research, Work and Employment, and Equality – are collaborating on a lifelong learning and exclusion White Paper scheduled to be completed at the end of 2015; this paper will have a strong emphasis on basic skills and cooperation between ministries in order to improve those skills.

There is a strong cultural tradition of adult education participation in Norway, and the country's adult education system is generally seen as strong. In part, this is attributed to national wealth. Norway has the comparative luxury of a well funded lifelong learning system. However, young adults did perform at or below average in PIAAC, and there is great concern in Norway about a potentially related factor, the drop out rate from upper secondary education. One interviewee explained the complexity of the drop-out issue in Norway, where progression to the upper secondary level is a cultural norm, even for pupils who, in other countries, might leave school after completion of lower secondary. A relatively large subset of young people progressing to upper secondary have substantial literacy and numeracy gaps, and these gaps are seen to contribute to high drop out rates at upper secondary level, particularly for pupils on vocational tracks. (Those who do not complete upper secondary school are almost four times more likely to be unemployed than those who had completed tertiary education (OECD, 2014).) While they are perfectly able to read, many upper secondary pupils struggle to 'read to learn', making it difficult to meet the requirements of their training. According to a senior basic skills NGO representative, this highlights a key challenge for Norway: understanding that literacy and numeracy are continuums rather than binary concepts. For example, the compulsory education system tends to conceptualise literacy as either/or, with teachers believing that once children are able to read, literacy teaching is no longer required. However, many pupils who can read do not develop their literacy skills enough to progress in education and employment. For this NGO interviewee, developing a more nuanced conception of literacy development, and embedding this conception in the compulsory and further education systems, is a key challenge for twenty-first century Norway. Although, in principle, literacy and numeracy are embedded into all vocational learning for young adults, the quality of the teaching is not sufficient to solve this problem.

The OECD's Norway diagnostic (2014) report contrasts the approach to drop outs in Norway with the Finnish approach, highlighting that the Finnish school system is more focused on identifying and addressing Special Educational Needs and learning difficulties in early years and primary settings. This is an issue that has spanned addressed previously – see for example, Välijärvi and Sahlberg (2008).

Another perceived weakness is digital skills. This weakness is being addressed through a range of programmes. For example, one of the basic skills in the BKA programme is digital skills, and Vox has developed competence goals for basic skills, including Basic Job Skills Profiles. The Norwegian Centre for ICT in Education (*Senter for IKT i utdanningen*) was established in 2010. The main goals of the centre are to improve the quality of education and to improve learning outcomes and learning for children, pupils and students through use of ICT in education.

More generally, there is the feeling that although literacy and numeracy are formally at the core of the curriculum (for children and adults), and while there is an external perception that Norway is a leader in basic skills provision, there is in truth a significant gap between what has been achieved from a legislative point of view and what happens in practice. This is reflected in a take-up of basic skills provision that is lower than might be expected: in 2011/12 only 6,000 adults participated in adult education at the primary/lower secondary level and the large majority of participants were foreign-born individuals, whose skills needs may not be addressed by the primary/lower secondary curriculum on offer (see OECD 2014). In Norway, adults are more likely to participate in workplace basic skills programmes (27,000 participants in the most recent year for which figures are available; OECD, 2014). Survey of Adult Skills data show that Norwegians also lead the OECD in the variety and frequency of everyday literacy practices.

To a large extent, the same situation pertains in Norway as in the UK - people with higher levels of education are more likely to engage in further education. In addition to the BKA programme, strategies to encourage participation are being developed, but the gap between the large numbers with low skills needing provision and the numbers engaging in provision remains. The recent OECD report on skills strategies suggested some actions that might be taken in order to get more competences in working life (not just for low skilled people, but in general) and to improve guidance, especially for people with low skills.

Targeted programmes

Policies or programmes aimed at young adults with low skills

To address the high rate of drop-out from upper secondary education, the national programme New Possibilities (*Ny Giv*) was launched in 2010, with the aim of encouraging more young people to complete and pass upper secondary education (OECD, 2014). One of the measures is an intensified follow-up of those pupils who have the poorest school results. Another measure is more relevant and practice oriented vocational education via the Certificate of Practice and the Training Candidature. The Certificate of Practice is a new 2 year VET education programme that has been developed to offer a lower level craft certificate, while the Training Candidature is an individually adapted education and training scheme based on a reduced package of competence objectives, offering both workplace and school based training.

Policies or programmes aimed at the unemployed and/or people in insecure employment

All registered unemployed adults in Norway are entitled to labour market courses (*arbeidsmarkedsopplæring*, AMO), provided by the Norwegian Labour and Welfare Administration (NAV). In 2012, 75,166 people participated in some sort of training provided by NAV[34].

Adult basic skills for immigrants

According to a 2012 Norwegian Government White Paper, 'the most important goal for the Government's integration policy is to ensure that all people who live in Norway are able to

[34] Vox-speilet 2013, p. 109; see also the Vox StatBank (Statistikkbanken.)

utilize their resources and participate in the community'.[35] To achieve this goal it is essential to ensure oral mastery of the language of the host country, a measure of understanding of the host country's culture, and a good level of literacy. The Norwegian language and social studies programme is aimed at improving immigrants' chances of participating actively in employment and society at large. The Directorate of Integration and Diversity (*IMDi*) administers grants and other measures to municipalities who have responsibility for facilitating tuition. Immigrants' right and obligation to participate in Norwegian and social studies tuition was enshrined in law in 2005.

Different residency statuses are linked to different rights and obligations:

- For adults who hold a residence permit pursuant to the EEA regulations or are a national of one of the Nordic countries, tuition in the Norwegian language is neither compulsory nor free
- Newly arrived refugees and persons who have been granted family reunification with a Norwegian or Nordic citizen are entitled to classes free of charge, as a part of the Introduction Scheme
- Adults who are a national of a country outside the EU/EEA and are in Norway as a labour immigrant, may have an obligation to take tuition in the Norwegian language if they later wish to apply for permanent residence.

The Introduction Scheme

Refugees and their families who have been granted a residence permit in Norway have a right and a duty to complete an introductory programme. The Introduction Act entitles and obligates refugees to participate in a full-time introductory programme for up to two years. Participation in such programmes is compulsory for refugees. The programme aims at providing basic Norwegian language skills and insight into the Norwegian society, and aims to prepare refugees to enter into the labour force or education. Municipalities are responsible for offering introductory programme to refugees. The federal government has developed quality standards, which programmes have to meet. To offer refugees a programme which matches their background, work experience and qualifications, the municipality and the immigrant develop an individual integration plan. Within three months after settlement, the municipality has to offer the refugees a suitable programme, in line with the agreed plan. This programme consists of: Norwegian language tuition; Measures to attain skills for labour market entry; Career guidance; Measures to continue education; Social studies in the immigrant's native language (when feasible); and The receipt of economical support whilst participating in the introductory programme.

Evaluation evidence

As noted above, Norway's adult basic skills accountability mechanisms do not involve measures of skills gain, as is typical in England. Evaluation evidence from Norway is more typical of that found in Scotland, where programmes are judged on participation, learner satisfaction, and Programme impacts on non-cognitive characteristics such as self-confidence, self-concept and everyday literacy/numeracy practices. It is perhaps worth noting that in PIAAC, Norway scored higher than all other countries on the everyday literacy practices index.

[35] Communication to the Storting ("En helhetlig integreringspolitikk – mangfold og fellesskap"), nr 6, 2012-13.

A4: Republic of Korea

The Republic of Korea is regarded as an improving country, in that the performance of its young people is significantly higher than that of older people. Over Korea performed below average in all three dimensions of PIAAC, its young people (16-24) ranked 4/23 in literacy, 5/23 in numeracy, and 1/19 in PS-TRE when compared to their OECD peers. In addition to meeting the criterion of an improving country, Korea was selected as a case study because of Department interest in the adult basic skills policies of South East Asian countries. Three expert interviews were conducted by email: one with a senior university researcher with expertise in PIAAC, one with a senior civil servant and one with a professor of lifelong learning. It was not possible to commission a native language review, but a number of high-quality sources were available in English. A total of 4 sources were examined, including a Skills Diagnostic report from the OECD. All sources are listed in Appendix 3; an anonymised list of interviewees is included in Appendix 2 iii).

A Adult basic skills in Korea

Overview

Korean adult basic skills policy is closely interwoven with the country's history. Following Japanese occupation and the Korean War, a large percentage of the Korean adult population was illiterate. In response to this, the Korean government expanded the education system rapidly in the 1950s and 1960s, and provided a large amount of adult literacy training (Byun et al 2011). This established a very strong relationship between education and economic development in the country as it made the transition from an impoverished colony to a wealthy, knowledge-based economy. As one expert pointed out, the history of competence development in Korea mirrors the history of school expansion in the country over the last sixty years; Korea is heavily dependent on regular schools and colleges to provide skills and knowledge.

Following this initial focus on improving national literacy levels, the Korean government largely withdrew from the sector, leaving it primarily to private providers. There is a strong culture of supplementary private education in Korea, particularly for schoolchildren. According to figures provided by one case study interviewee, an expert on PIAAC and similar studies, Korea currently leads the world in per-pupil expenditure on private tutoring.

Beginning in the twenty-first century, however, the Korean government began taking a renewed interest in adult literacy education. One key factor in this process has been the rise in available data, from national and international research studies. These research studies highlighted a previously overlooked problem, help helping to move literacy somewhat up the Korean policy ladder (Unesco 2009). This renewed interest was also prompted by the rise of lifelong education organizations in the 1990s, many with strong civic focuses, which helped to spread the adult literacy movement. In the following decade, the Korean government began to provide greater support to adult literacy. This led to the expansion and systematisation of programmes and policies. However, according to both case study interviewees, the adult literacy sector is still underdeveloped, both in terms of the quantity of provision available and the appropriateness of that provision for the modern world.

Adult literacy policy in Korea is influenced by central government, local government, NGOs and private providers. The National Institute for Lifelong Education is the key body in terms of planning, executing and evaluating adult literacy programmes.

Local governments are charged with increasing awareness of available literacy programmes and ensuring the quality of those programmes (Byun et al., 2011). When policy was being developed in the mid-2000s, one debate was whether programmes should be implemented by individual literacy institutions or each local area. Policy development on this issue was hampered by a lack of data – for example, there was limited accurate information no accurate information on private institutions. In order to address this and other issues, and in concordance with its long-standing emphasis on public-private partnerships in adult literacy education, the national government decided that private institutions and local governments should form consortia. In these consortia, local governments use their own budgets and draw on national government subsidies in order to support adult literacy provision.

Institutions that had particularly good results and had been part of the programme for at least three years were given the opportunity to become local centres, which meant more support from central government so that they could expand and lead on literacy provision in their region. Each centre has its own curriculum and methods, both of which are directed towards local context and circumstances. Depending on needs assessments, centres may have different specialities. Centres also provide training for adult literacy teachers.

NGOs play an important role in Korean adult literacy policy. One NGO, the Korean Federation for Lifelong Education, is a ‘centre for exchanging ideas between experts in lifelong education and activists in literacy education’ (65). This is another apparent example of Korea's emphasis on across organisational coordination and collaboration. Another example is the ‘Information Education Programme for a Literate People’, a forum which enables NGOs to share various challenges, solutions and perspectives.

Non-governmental organisations are involved in planning, executing and evaluating national adult literacy policies, and work to contribute to the effectiveness of these policies. For the NGOs who helped launch the modern Korean adult literacy movement in the 1990s, the focus has tended to be on literacy as a social practice and critical skill. For critical literacy proponents, teaching adults to read and write is only one part of literacy education – such education should also improve adults' self-esteem, self-confidence, community participation, democratic involvement, and overall attitudes to lifelong education (Unesco, 2009).

Private providers also play an important role. According to statistics collected in 2004, in that year more than 400 institutions were providing literacy training to approximately 10,000 learners in Korea. These providers were filling a gap that government had left, when it withdrew from literacy provision in earlier years.

Similarities and differences to England

Korea has a strong tradition of attempting to use policy mechanisms that are familiar and indeed desirable in England. For example, there are numerous examples of cross-departmental initiatives. There are also numerous examples of public-private partnerships

and of governments seeking to incentivise a broad range of providers, both public and private. There are also numerous examples of partnership working between central and local governments.

B PIAAC results and their reception

Korea's performance in PIAAC

Korea's overall performance in literacy and numeracy is low compared to the OECD average (rank 12/23 for literacy and 15/23). Performance in PS-TRE is also significantly below the OECD average (15/19). In literacy, Korea shows relatively minimal variation between highest and lowest 5% of performers.

Factors potentially influencing PIAAC results

Education is extremely important in Korean culture, and is seen as the bedrock of societal meritocracy. However, the emphasis is very strongly on compulsory and higher education. As noted above, Korean families invest very heavily in supplementary private lessons for their children. The compulsory education system is highly competitive and characterised by a number of high stakes tests leading to meritocratic competition for university places. Korea has the OECD's highest university enrolment rate amongst 16-24-year-olds. Education at the primary, secondary and tertiary levels, is perceived of as universal. For the last decade, the participation rate in higher education has been over 70 percent, and this factor is critical to explaining the strong performance of Korean young people in PIAAC.

However, the rate of participation in adult education in Korea is among the lowest in the OECD. In 2009, the rate for 25-64 year olds was 28% in formal and non-formal education combined, and 4.3% in formal education only (Bae et al., p. 185). As this indicates, lifelong learning is in its infancy in Korea, and these figures in part reflect the limited supply of learning programmes and the need for new policies to promote them. The rate of participation in vocational training in Korea is also lower than the OECD average (14.3% compared to 18%) – most of these participants were not economically active: only 2.4% of employed people participate in formal education, indicating that there is little opportunity for Koreans to work and study at the same time.

Within the compulsory education system, Korea has a relatively strong ICT infrastructure, and is considered a world leader in the digitalisation of education. In 2013, digital textbooks for social studies and science were adopted in 144 schools (78 elementary schools, 54 middle schools, 12 high schools); this adoption will be gradually expanded to many more schools. Since 2004, the country has featured a 'Cyber home learning system'. This programme aims to reduce the very high level of household expenditure on private tutoring and, as a corollary, to reduce inequities in educational opportunities.

Amongst adults, Korea's Lifelong Learning City project was launched in 2001 in order to create networks of lifelong learning resources and activities within a broader range of areas throughout the country (Unesco, 2009). As part of the project, each local area developed a system to support adult literacy education. In 2001 there were three lifelong learning cities; this number has since increased to more than 80.

Looking beyond the education system, Korea has one of the lowest female labour participation rates (55%) across OECD countries (OECD, forthcoming). This is driven by a range of factors, including labour market policy, childcare and support policy, and its social and cultural values. In part, this reflects the inheritance of Korea's economic model of working very long hours, which makes it difficult to combine employment with family responsibilities. As a result, access of many women to mainstream jobs is limited. Female labour force participation rates are about the same now as 20 years ago (55% compared with an OECD average of 65%), with only 10% of all managerial positions being held by women compared with about one-third across the OECD. The overall gender pay gap among full-time workers (39%) is the highest among OECD countries. Low levels of employment for Korean women, coupled with the frequently poor quality of that employment, has implications for skills development and retention over the life course.

Korea has high levels of generational education inequality. The current cohort of older workers has a much lower skill level than the younger generation and has the highest relative poverty rate (almost 50%) across OECD countries. Older people in Korea have the highest income poverty rate of any OECD country.

PIAAC Korea's reaction to PIAAC

PIAAC was supported by two ministries: the Ministry of Education and the Ministry of Employment and Labour. While there was some press activity and a seminar to share PIAAC results, neither Ministry appeared to take much interest, according to one expert. Another expert pointed out that considerably more attention was given by the Korean government to PISA results. Overall, the primary subjects of interest from PIAAC were the apparent 'over education' of young adults in Korea, and the mismatch between higher education credentials and actual competencies in basic skills.

Although another expert we interviewed did note that the Ministry of Education has now promised to expand learning opportunities for low skilled adults, particularly older people, women and low skilled employees, it is generally true that the education of older adults, and remedial and second chance education, is not a government priority.

C. Cohort-specific performance

Age cohorts

Korea's primary strength in PIAAC is amongst its youngest cohort, who perform far better than older cohorts. Amongst the 16-24 age group, Korea ranks fourth of 21 OECD countries in literacy and fifth in numeracy, and first of 18 countries in PS-TRE. These results are concordant with Korea's recent high performance in PISA.

Similarities and differences to England

Korea differs widely from England in terms of its age and skills profile, with young people showing rapid improvement across all domains and a relatively low-performing older population.

D. Basic skills provision

Policy and programmes

In 2006 the Korean government launched its ‘Support Programme for Adult Literacy Education’ (Unesco, 2009). The aim of the programme was to improve ‘people’s basic skills capability and realise social integration by providing additional (educational opportunities) to adults with low academic backgrounds’ (p. 54). The programme had a relatively generous budget and in 2007 was given statutory grounds in the Lifelong Education Act. The development of policy at this time highlights the desire of the national government to work in partnership with local governments cooperation between central and local government was a key component of the policy. The support programme provided national government funding for programme operating costs, including teacher salaries, textbooks, teacher training, curriculum development, and recognition of learners' prior academic background. Central government encouraged good local practice and empowered successful practitioners by providing successful programmes with additional financial support in order to become ‘local centres’, with regional leadership roles. The adult literacy education support project focuses specifically on literacy, and has legally established local governments' responsibility for literacy education.

Cooperation between national and local governments is a central part of this project – for example through matching funds provided by central government. Local municipalities who want central government should port are required to pay at least 30% of project budget and to establish a ‘comprehensive literacy education promotion plan’. The support project subsidises programme operating expenses, textbooks, development costs, instructor training and other requirements. Central government subsidisation is seen as a major boost for small, local programmes.

In 2008, two major policy developments occurred: the revision of the Lifelong Education Act and the establishment of the National Institute for Lifelong Education (Unesco, 2009). The revised Lifelong Education Act established a definition of adult literacy education, the grounds for financial assistance for such education, and the grounds and procedures for recognising participants’ academic background. These actions made adult literacy a more important part of lifelong education. The Second National Lifelong Learning Promotion Plan ran from 2008 to 2012. With regard to adult literacy, the Plan had two major priorities. The first was to systematise and improve adult basic skills education. The second priority was to "establish a lifelong learning safety net for newly increasing underprivileged groups including married immigrant women, migrant workers, and North Korean defectors" (Unesco, 2009, p. 100).

With regard to improving adult literacy provision, the Plan proposed four primary strategies (Unesco, 2009). The first strategy was to expand learning opportunities for low-educated adults. This involved expanding the Adult Literacy Education Support Project. The second strategy was the certification of participation in adult literacy programmes, through the conferral of elementary and middle school degrees (Unesco, 2009). In addition to appealing to adult literacy programmes participants' desire for certification, this strategy was also seen as addressing and unfavourable imbalance in the education system: while a student attending a primary or middle school could acquire the requisite diploma without passing a graduation examination, adults were required to pass examinations in order to achieve the equivalent diplomas. Such an approach is seen as increasing the potential value of literacy participation for participants. This approach is also seen as concordant

with a more general Korean cultural valorisation of educational credentials and success. This expansion of the academic credential system to include adult literacy programmes is considered an important and innovative step in Korean lifelong learning policy.

The third strategy was to improve the management of literacy education facilities. The fourth strategy was to conduct a nationwide Korean literacy census on a regular basis. The rationale for such a census was that precise and reliable data would play an important role in improving Korean awareness of adult literacy issues, and would help to improve and focus education policies.

Strengths, weaknesses, challenges and barriers

Despite the aforementioned policy developments, adult literacy is a marginal field in Korea. Since 2011 government funding for adult literacy has decreased. Korea's education system is very much concentrated in initial education, with few learning opportunities for working age adults. The opportunities that do exist are heavily biased towards the more highly skilled: Korea has large adult education participation gaps based on qualifications, age, employment status and gender. In many regards, the higher education system is closed to anyone other than young age cohorts – there are no open admission policies for older adults, and the courses are not suitable for part-time returners. Scholarship and government financial support is mostly for young adults. There are fewer lifelong education opportunities for low-skilled, older people and women. There is therefore a need, argued experts, to increase the participation rates of these disadvantaged groups – and these are the groups that the Ministry of Education has promised to target.

The heavily frontloaded focus on success in compulsory and higher education has potentially created an oversupply of graduates, with some unexpected negative consequences. Amongst young Korean adults who have completed tertiary level education, the percentage neither in employment nor in education or training (NEET) is nearly double the OECD average: 24% in Korea compared to 13% in the OECD as a whole. In addition to current problems, this could also have longer term negative impacts, as young adults see their skills decline through lack of labour force participation. Experts also pointed to the difficulty that employed adults have in seeking out further learning, because of the long work hours typical of Korean employees.

Many adult literacy education organisations struggle financially. There are limited spots for adults and the quality of the education provided is not always as high as desired. To address this and other issues, Korea has sought greater coordination and coherence with the compulsory education system (Unesco, 2009). For example, there is a decreasing number of school age children in Korea – and in recent years local Offices of Education have been allowed to operate adult education programmes in local school facilities. This is a change from previous years, when compulsory school educational infrastructures were note accessible by adults seeking to improve their literacy. This change has been largely driven by central government (Byun et al., 2011).

Korean policy is seeking to respond to another change: rising immigration. Literacy programmes targeted at migrants include social and cultural dimensions. There is a call for adult literacy programmes to increase their emphasis on family literacy.

Analysing the Korean adult literacy system, Byun et al. (2011) highlighted a number of successes. These include decreasing the once very high illiteracy rate, an accomplishment that has been primarily driven by expanded and improved compulsory education. However, adult literacy programmes have played a role in providing compensatory education for poorly educated adults, particularly older people. In this context, it should be noted that more than nine in 10 participants in Korean adult literacy programmes are female. In terms of policy successes, Byun et al. also point to the high levels of cooperation between central government, local government, NGOs and private providers in Korea.

Byun et al. also make a number of recommendations for improvement. These include further promotion to drive awareness of adult literacy as an important policy issue. Alongside this, the authors call for an expanded conceptualisation of literacy, which would move beyond the needs of poorly educated older people seeking to learn basic reading and writing, and takes greater account of the needs of various population groups to function successfully in a modern knowledge economy. A Korean adult literacy expert concurred strongly with this recommendation, arguing that the traditional model of adult literacy as a form of compensatory education is no longer appropriate for a world in which good basic skills are increasingly a requirement of employment. This expert also argued that there is a basic misperception on the part of many policymakers with regard to what literacy is. As in other countries, many policymakers see literacy as a binary concept rather than as a continuum. This encourages a view of literacy education as compensatory rather than functionally focused. This expert argued that literacy must be viewed more expansively. She also argued that this would require much greater funding than is currently available.

Targeted programmes

Adult literacy policies and programmes in Korea typically target specific groups. This was not always the case: following Japanese domination and then the Korean War, low literacy and in literacy were widespread, and the government sponsored universal programmes aimed at improving national literacy levels (Byun et al 2011). Once these levels reached what was deemed a respectable level, government focus shifted to more general economic development. Nowadays, however programmes are targeted at a range of particular groups.

Key programmes include the:

- Information Education Project for the Illiterate, which focuses on adults who have difficulties using ICT,
- Literacy Education from Married Immigrant Women, which is targeted at foreign women living in Korea but who are married to Korean men. The project helps to fund Korean language textbooks, teachers, job skill development training and ICT training, and
- Korean Language Education through Social Integration Credit System, which is aimed at foreigners who want to become naturalised Koreans. It provides basic education in the Korean language, Korean culture and Korean society. Foreigners who complete this programme are exempted from a written examination normally required to acquire citizenship.

Each of these three programmes is run by a different government ministry.

Amongst young adults, students in secondary schools take Korean, English, Mathematics as mandatory course and these subjects have heavy weights on the College entrance exam

Evaluation evidence

No robust quantitative programme evaluations of Korean basic skills programmes for adults were found. It is a feature of adult basic education in Korea that initiatives tend to be small scale and until recently were mainly delivered by volunteers through NGOs. Although there are now more municipalities supporting adult basic skills in their local through ‘lifelong learning cities’, the government has not applied either large-scale resources or technological support to delivering basic skills programmes.

Appendix 2: Methodology

A2. i) ISAS data analysis: regression output tables for England

The regression approach has been taken to identify the correlation between a characteristic and high proficiency, holding other characteristics fixed. Regression is preferable to a series of binary cross-tabulations because it estimates the associations between high proficiency and all other characteristics in the model, simultaneously. Apparently large differences in some characteristics may be evident in binary cross-tabulations that are less marked in regression analysis because the difference in a regression is estimated with other factors also taken into account. Regression analyses were run on all the high-performing and improving countries included in the scope of this report, and England, for literacy, numeracy and PS-TRE.

Table A2.1: Characteristics associated with high literacy proficiency in England

Category	Reference category	Co-eff	SE	Prob_T	Odds	LOWER	UPPER
No computer experience in everyday life*	Has computer experience in everyday life	-1.150	0.369	0.003	0.317	0.149	0.670
Unemployed and seeking work	Employed or self-employed	-0.150	0.294	0.612	0.861	0.476	1.560
Retired		0.051	0.360	0.888	1.052	0.504	2.200
Full-time student		0.397	0.344	0.252	1.487	0.750	2.950
Doing unpaid household work		0.064	0.306	0.835	1.066	0.578	1.970
Other		-0.157	0.423	0.711	0.855	0.365	2.000
Semi-skilled white collar*	Skilled occupations	-0.596	0.197	0.003	0.551	0.368	0.820
Semi-skilled blue collar*		-0.801	0.240	0.001	0.449	0.278	0.730
Elementary*		-1.255	0.442	0.006	0.285	0.117	0.690
Not worked for 5+ years or unknown		-0.563	0.323	0.085	0.569	0.296	1.090
Age_19_24*	Age 35-44	-0.859	0.297	0.005	0.424	0.232	0.770
Age_25_34		-0.183	0.160	0.256	0.833	0.605	1.150
Age_45_54		-0.056	0.162	0.730	0.946	0.684	1.310
Age_less18*	Age 19-54	-1.760	0.640	0.007	0.172	0.047	0.630
Age_more55		-0.170	0.251	0.499	0.843	0.508	1.400
Not born in host country*	Born in host country	-0.759	0.262	0.005	0.468	0.275	0.800
Mother's education upper secondary*	Mother's education lower secondary or below	0.515	0.161	0.002	1.673	1.211	2.310
Mother's education tertiary*		1.011	0.211	0.000	2.747	1.797	4.200
Father's education upper secondary*	Father's education lower secondary or below	0.381	0.141	0.008	1.464	1.106	1.940
Father's education tertiary*		0.422	0.182	0.023	1.524	1.061	2.190
Own education upper secondary*	Own education at lower secondary or below	1.217	0.324	0.000	3.375	1.770	6.440
Own education tertiary*		1.622	0.331	0.000	5.062	2.617	9.790
Female*	Male	-0.273	0.131	0.041	0.761	0.585	0.990
Excellent health	Very good health	-0.006	0.144	0.965	0.994	0.745	1.320
Good health*		-0.294	0.141	0.041	0.745	0.562	0.990
Fair health		-0.383	0.254	0.136	0.682	0.408	1.140
Poor health		-0.853	0.668	0.205	0.426	0.108	1.690
Has children	Does not have children	-0.125	0.122	0.308	0.882	0.692	1.120

Table A2.2: Characteristics associated with high numeracy proficiency in England

Category	Reference category	Co-eff	SE	Prob_T	Odds	LOWER	UPPER
No computer experience in everyday life*	Has computer experience in everyday life	1.69203	0.49212	0.00094	0.1841	0.06832	0.5
Unemployed and seeking work	Employed or self-employed	-0.2957	0.32897	0.37146	0.744	0.38571	1.44
Retired		0.41312	0.50004	0.41119	0.6616	0.24159	1.81
Full-time student		0.38542	0.35143	0.2761	1.4702	0.72073	3
Doing unpaid household work		0.48854	0.4097	0.23665	1.6299	0.71938	3.69
Other		0.20469	0.44526	0.64698	0.8149	0.32979	2.01
Semi-skilled white collar*	Skilled occupations	0.61657	0.17341	0.00064	0.5398	0.38211	0.76
Semi-skilled blue collar		0.58307	0.2962	0.05252	0.5582	0.3063	1.02
Elementary*		1.26111	0.51459	0.01647	0.2833	0.10172	0.79
Not worked for 5+ years or unknown		0.60291	0.31413	0.05856	0.5472	0.29283	1.02
Age_19_24	Age 35-44	0.63648	0.33914	0.06425	0.5292	0.26647	1.05
Age_25_34		0.24762	0.19822	0.21528	0.7807	0.52311	1.17
Age_45_54		0.13937	0.18989	0.46515	0.8699	0.59368	1.27
Age_less18*	Age 19-54	1.38307	0.69201	0.04909	0.2508	0.06263	1
Age_more55		-0.0726	0.22574	0.74859	0.93	0.59338	1.46
Not born in host country*	Born in host country	1.11737	0.2925	0.00026	0.3271	0.18187	0.59
Mother's education upper secondary	Mother's education lower secondary or below	0.30998	0.185	0.09778	1.3634	0.93806	1.98
Mother's education tertiary*		0.56602	0.23035	0.01619	1.7612	1.10629	2.8
Father's education upper secondary*	Father's education lower secondary or below	0.45316	0.15497	0.00451	1.5733	1.15569	2.14
Father's education tertiary*		0.87102	0.21649	0.00013	2.3893	1.54144	3.7
Own education upper secondary*	Own education at lower secondary or below	1.41401	0.37455	0.00031	4.1124	1.94635	8.69
Own education tertiary*		2.07238	0.37139	0	7.9437	3.77357	16.72
Female*	Male	0.75493	0.14855	0	0.47	0.34949	0.63
Excellent health	Very good health	0.07325	0.15238	0.63206	1.076	0.79447	1.46
Good health		0.42942	0.2554	0.09664	0.6509	0.3915	1.08
Fair health		-0.2004	0.18457	0.28088	0.8184	0.56358	1.19
Poor health		0.37857	0.68736	0.58335	0.6848	0.16737	2.8
Has children	Does not have children	0.06924	0.15017	0.64603	1.0717	0.7937	1.45

Table A2.3: Characteristics associated with high PS-TRE proficiency in England

Category	Reference category	Co-eff	SE	Prob_T	Odds	LOWER	UPPER
No computer experience in everyday life*	Has computer experience in everyday life	1.73204	0.27975	0	0.17692	0.09979	0.31367
Unemployed and seeking work	Employed or self-employed	0.48949	0.21414	0.02494	0.61294	0.3967	0.94706
Retired		0.02684	0.26659	0.92006	1.02721	0.60423	1.74627
Full-time student		0.21122	0.25406	0.40828	0.8096	0.48544	1.35022
Doing unpaid household work		0.38518	0.26917	0.15637	1.46988	0.85759	2.51931
Other		0.21821	0.222	0.32865	0.80396	0.51488	1.25534
Semi-skilled white collar*	Skilled occupations	-0.6704	0.14313	0.00001	0.5115	0.38262	0.68379
Semi-skilled blue collar*		0.97579	0.20358	0.00001	0.37689	0.2494	0.56957
Elementary*		1.10569	0.2185	0	0.33098	0.21335	0.51346
Not worked for 5+ years or unknown*		0.98779	0.20755	0.00001	0.3724	0.24463	0.56689
Age_19_24	Age 35-44	0.05185	0.21524	0.81025	1.05322	0.68196	1.62659
Age_25_34		0.22778	0.16331	0.16699	1.2558	0.90196	1.74847
Age_45_54		0.29487	0.15311	0.05772	0.74463	0.54616	1.01523
Age_less18	Age 19-54	0.23508	0.38303	0.54114	0.7905	0.36108	1.73065
Age_more55*		-0.57389	0.20367	0.00611	0.56333	0.37173	0.85368
Not born in host country*	Born in host country	-0.7914	0.17068	0.00001	0.45321	0.32212	0.63765
Mother's education upper secondary*	Mother's education lower secondary or below	0.54305	0.12463	0.00004	1.72125	1.33796	2.21434
Mother's education tertiary*		0.7722	0.21371	0.00053	2.16451	1.40052	3.34527
Father's education upper secondary*	Father's education lower secondary or below	0.4972	0.10679	0.00001	1.64411	1.32716	2.03675
Father's education tertiary*		0.47506	0.18051	0.01021	1.60811	1.11719	2.31473
Own education upper secondary*	Own education at lower secondary or below	0.71489	0.13644	0	2.04395	1.55785	2.68173
Own education tertiary*		1.09581	0.14076	0	2.99161	2.26061	3.95898
Female*	Male	0.41962	0.11077	0.00029	0.65729	0.52543	0.82226
Excellent health	Very good health	0.06241	0.14475	0.66751	0.93949	0.70099	1.25914
Good health		0.05619	0.17441	0.74816	0.94536	0.66758	1.33872
Fair health		0.17815	0.12205	0.14836	0.83682	0.65518	1.06881
Poor health		0.45945	0.28381	0.10946	0.63163	0.35728	1.11665
Has children	Does not have children	0.30197	0.1133	0.00933	0.73936	0.58989	0.92671

A2. ii) Rapid Evidence Assessment: methodology, search terms, data extraction template, and results

Methodology

The rapid evidence assessment (REA) comprised of an English-language evidence review of eight countries that met the criterion of being either high-performing or improving in the OECD's Survey of Adult Skills (PIAAC). The eight were selected to provide a range that included some Asian and Anglophone countries, and to reflect current policy interests. Following discussions between researchers and the Steering Group at the project's inception meeting, Canada, Estonia, Germany, Japan, the Netherlands, Norway, the Republic of Korea and Poland, were selected.

The REA had three objectives:

- to identify lessons for policy development in England in three areas: adult basic skills policy; adult basic skills delivery; application of skills by adults,
- to inform the selection of the four countries which would be the subject of in-depth case studies, and
- to provide context for the Survey of Adult Skills data analysis.

The methodology for the REA was guided by the ten-step review process by Saul et al., (2013) in their Rapid Realist Review (RRR) methodology. This tool allows researchers to carry out a knowledge synthesis review that is true to core elements of a realist methodology, but also fits the demands of policy makers who are working to short time frames in order to make policy decisions.

Given the time and resources available, it was not possible to provide in-depth coverage of non-educational factors such as the socio-demographic, economic and educational factors examined in the data analysis. Instead, the REA drew on general principles (e.g. the association between high income inequality and high literacy inequality; the vicious cycle of the digital divide) and summarised those likely to be relevant to findings from the data analysis strand. Compulsory education was not a focus of the REA although some content was included as context.

Only English-language sources were included in the REA. Three categories of sources were searched:

- PIAAC background reports, conference reports (illustrating national preparations for and responses to PIAAC's October 2013 report launch); CEDEFOP's synthesis of European PIAAC findings; and national/cross-national briefing documents by and for NGOs and civil servants; relevant literature on PIAAC methodology,
- International assessment literature from 1996 onwards, including studies of IALS and the Adult Literacy and Life Skills Survey (ALL), with a particular focus on policy responses and impacts in the long list countries; relevant literature on PISA, and
- Other relevant academic literature, policy literature and other grey literature published from 1994 and identified from a range of education and policy-focused databases.

The search strategy adopted a flexible approach. In the first instance, trial searches were conducted in selected databases using the draft list of search terms, with these terms revised or adapted in line with the search results (e.g. made more general where too few documents were identified). Titles and abstracts of sources identified in all searches were screened for relevance to the research questions, pertinence to the lessons, and for quality. Grading took place to identify a short list for review, with only sources rated good or excellent taken forward to the review stage.

Search Terms

Database searches were conducted using search terms agreed between the NRDC research team and the Department. Seven sets of terms were used.

Adult skills set		
Adult basic skills	Functional literacy	Mathematics/math/maths
Adult literacy	Functional numeracy	Mathematics skills
Adult numeracy	Functional reading	Minimum competencies
Basic skills	ICT	Numeracy
Computer skills	ICT literacy	Numeracy skills
Employability skills	ICT skills	Problem solving skills
Financial capability	Key skills	Reading skills
Financial literacy	Literacy	Writing skills
Foundation skills	Literacy skills	

Population set		
Adults	Job applicants	Learning disabilities
Early school leavers	Job seekers	Unemployed
Employees	Learners	Young adults
Hard-to-reach learners	Learning difficulties	

Adult education		
Adult basic education	Further education	Preparatory adult education
Adult education	Lifelong learning	Second chance education
Adult education curriculum	Literacy education	Training
Adult learners	Literacy programs/ programmes	Vocational Education and Training/VET
Adult learning	Maths education	
Adult secondary education	Maths programs/ programmes	
Basic skills training	Numeracy education	
ICT training	Numeracy programs/ programmes	

Teaching and delivery		
Adult education teachers	Distance learning	On the job training
Adult educators	Educational methods	Pedagogy
Andragogy	Flexible learning	Teaching methods
Delivery models	Instructional design	Teaching process
Delivery systems	Non-formal education	Work-based learning
Distance education	Non-traditional education	Work-based training

Quality/effectiveness		
Cost	Educational economics	Evaluation
Cost analysis	Educational quality	Impact assessment
Cost benefit analysis	Effectiveness	Teacher effectiveness
Cost effectiveness	Effective approaches	Teacher / teaching quality

Technology		
Computer assisted learning	Interactive learning	M-learning/ Mobile learning
Computer assisted teaching	Internet	Online learning
Computer mediated communications	Internet learning	Virtual learning environment / VLE
E-learning	Learning technology	Web 2.0

Outcomes and impacts		
Competences/ competencies	Learner attainment	Returns
Educational benefits	Outcomes	Skills outcomes
Educational outcomes	Outcomes of education	Student attainment
Employability	Progression	Social return on investment
Impacts	Return on investment	

Data Extraction Template

The data extraction template was designed to allow researchers to focus more clearly on both the study's research questions and the need to assess each source for the contribution of its data to the case study selection criteria.

A1: Name of reviewer			
A2: Date of review			
B. About the Source	**B1: Source detail**	Citation	
		Publication details	
		Language	
	B2: Type of source	1. ISAS country report 2. Policy document 3. Academic article 4. Book chapter 5. Book 6. Evaluation report 7. [Other]	
	B3: Long-list country		
	B4: Methodological design		
	B5: Robustness		
	B6: Source quality assessment	1-3 score, where 3 denotes good or excellent	
	B7: Source relevance assessment	1-3 score	
C: Case study selection criteria	**C1: relevance of policy and evidence to England**		
	C2: replicability of policies in England		
	C3: availability of evidence on literacy, numeracy and ICT policy		
	C4: quality of information available (robustness)		
	C5: quality of information available (detail)		
D: Contexts	**D1: RQ1-3 Socio-demographic**		
	D2: RQ1-3 Economic		
	D3: RQ1-3 Educational		
	D4: RQ1-3 Wider background		
	D5: RQ4. High skilled older adults		
	D6: RQ5. Characteristics of young people		
E. Interventions, mechanisms and	**E1 Basic skills delivery**	General	
	E2: Maths	i. system ii. policy iii. effectiveness	

outcomes		(with sub-domains)
	E3: Literacy	i. system ii. policy iii. effectiveness (with sub-domains)
	E4: ICT	i. system ii. policy iii. effectiveness (with sub-domains)
F: RQ6 Technology	**G1: Use of technology, general**	
	G2: Use of technology, in basic skills delivery	

Database search results

Following informal preliminary investigations of a number of educational and social science databases, ERIC was chosen as the primary database for searching. A key factor in this choice was ERIC's breadth: in addition to being a particularly large educational database, it also contains a range of materials from a broad range of countries.

To take account of potential policy-related studies in the run-up to the launch of IALS, searches began with the year 1994. Following a trial search, the most generic, non-age-specific terms, such as 'literacy', were omitted, as these led to the return of a large number of documents relevant to children but not to adults. For the same reason, generic technology-related search terms such as 'Internet', 'Internet learning', and outcome-related terms such as 'educational benefits' were omitted.

Based on further exploration of various combinations of search terms and the number and relevance of their returns, the following ERIC search strand was used, and yielded 631 results:

('Adult basic skills' OR 'adult basic competencies' OR 'Adult literacy' OR 'Adult numeracy' OR 'Basic skills' OR 'Computer skills' OR 'Employability skills' OR 'Foundation skills' OR 'Problem-solving') AND (Poland OR Korea OR Japan OR Netherlands OR Canada OR Norway OR Germany OR Estonia).

The results of this search were supplemented by a range of strategies:

- Consultation with research and policy experts in each rapid review country. As part of these consultations, experts in each country were asked to recommend 3-6 particularly relevant or useful English-language documents,
- Analysis of reference lists in publications known to the research team.
- Use of the Google Scholar 'cited by' tool, and
- Investigation of adult basic skills-specific research and policy databases, such as that maintained by the National Center for the Study of Adult Learning and Literacy (NCSALL) in the US.

A2. iii) Case Study Selection Methodology

The four case study countries were selected from the eight country long list against six selection criteria:

- The similarity of each country's skills and age profile to that of England,
- Performance type in PIAAC – that is, whether the country is a high performer (and in which subject/s), or an improver,
- The potential replicability of each country's policies in England,
- The availability of relevant evidence (in any language) in each country,
- The quality of information available from each country, in terms of the robustness of the available evidence, and the level of detail available in policy documents and/or policy analyses, and
- The relevance of that information to the English context.

Interviews were conducted with at least two experts in adult basic skills policy and practice in each of the four countries. Interviews were arranged by email and each interviewee was emailed a summary version of the topic guide containing information on the broad headings for discussion in advance of the interview.

Interview mode depended on the case study country and the availability of the experts. Interviews in the Netherlands were conducted face-to-face and by telephone. Interviews with Norwegian and Canadian experts were conducted by telephone (Skype). Interviews with Korean experts were conducted via email. All interviews were conducted in English and lasted approximately 60 minutes. Face-to-face and telephone interviews were recorded and all data were inputted into an answer grid to facilitate analysis.

Case Study Topic Guide

The full topic guide for the case study interviews is provided below. Not all questions were asked to all interviewees; core questions asked in each interview are shaded in blue. Each interview also included probes specific to that country.

Introduction	
	Can I begin by asking you to briefly describe your current role and your experience in the area of adult basic skills?
PROBE	**How does the interviewee's role fit into their organisation?**

Section 1	Overall performance in PIAAC and Specific subject areas
	Interviewer to begin by summarising country's general performance using information on country-specific case study topic guide
•	**What do you think are the key factors influencing this performance?**
PROBE	**Here and elsewhere, interviewer will probe interviewee's own thoughts and not seek repetition of OECD's**
PROBE	**What, if anything, did the interviewee find surprising about the performance?**
•	**What do you see as the main factors influencing your country's performance in literacy?**
PROBE	**Here, and in other subject specific questions, we are interested in strengths and weaknesses.**
•	**What do you see as the main factors influencing your country's performance in numeracy?**
•	**What do you see as the main factors influencing your country's performance in PS-TRE?**
•	**In your opinion, why do these strengths and weaknesses exist?**
PROBE	**1) Adult basic skills policies; 2) Compulsory education system; 3) Broader policy factors, e.g. (in)equality, labour market, migration, cultural attitudes to education**
	How, if at all, has your government responded to the PIAAC results?
PROBE	**We are interested in the government and media responses, including initial policy responses (if any), and interviewee's thoughts on possible policy responses in future.**
•	**Is high/improving [as appropriate] performance in [insert subject(s)] linked to use of technology?**
PROBE	**We are interested in approaches to using technology**
•	**Are you aware of any large-scale approaches in your country to using technology in adult basic skills education?**

Section 2	Cohort-specific performance
•	Are there particular group or cohorts who do especially well in PIAAC in your country? Why?
PROBE	Probe cohorts identified in analysis if these are not raised by interviewee
•	Are there group or cohorts who do particularly poorly in PIAAC in your country (e.g. age groups, gender, NEETs, etc.)? Why?
PROBE	Probe cohorts identified in analysis if these are not raised by interviewee
•	What do you think are the factors behind the performance of young people in your country?
•	Are there policies or programmes aimed at the unemployed and/or people in insecure employment?
•	How if at all has your government responded to these cohort-specific results?

Section 3	Policy and Practice
	Could you give me an overview of adult basic skills policy and adult basic skills provision in your country?
PROBE	Probe separately for literacy, numeracy and ICT, if not addressed in the initial response
PROBE	Probe for the differences between policy design and implementation
PROBE	Probe on the funding of adult basic skills provision
PROBE	Probe on the aims & objectives of provision, e.g. re skills / practices, or stakeholder conflict, targets
•	Could you tell me about provision for young adults?
PROBE	Is there any special provision, e.g. within apprenticeships or targeted at NEETS (young people Not in Education, Employment or Training)?
•	In terms of basic skills policy and practice, what do you see as your country's strengths? Why do these strengths exist?
•	What do you see as your country's key policy and practice weaknesses? Why do these weaknesses exist?
•	Looking ahead, what do you see as your key challenges, – in terms of skills performance, policy and practice?
PROBE	How will success in these challenging areas be measured?
•	What are the primary barriers to improved adult basic skills in your country? How could those barriers potentially be overcome?
PROBE	What are the opportunities provided by your country's skills profile?
•	Thinking about the last decade or so, could you please talk me through the key policy developments that you feel have affected or attempted to affect adult literacy, numeracy and ICT?
PROBE	• Why these policies came about and their perceived impacts? • Policies potentially affecting PIAAC outcomes. • Policies initiated in response to earlier international assessments, or other performance measures.

	• **Policies aimed at improving skills for particular groups.** • **Classroom-based provision.** • **Workplace-focused strategies.** • **Community learning and peer-to-peer learning.**
•	**We are also interested in broader policies that may influence adult basic skills, e.g. socio-economic policy. Could you give me your thoughts on the impact of factors external to adult education policy?**
PROBE	• Inequality • Compulsory education system • Labour market • Other factors
•	**If you were a benevolent dictator and had carte blanche to change policy and/or in your country in order to improve adult basic skills, what would you do, and why?**
PROBE	• Policy/practice is specific to the adult basic skills sector • More general policies and factors
•	**Are there other countries that your own country looks to as an exemplar? Why / why not?**

Section 4	**Recommended reading**
•	**Thinking about the issues we have discussed today, could you recommend the key publications I should read in order to better understand the policies and issues shaping and responding to adult basic skills in your country (up to approximately 7 publications)? These could be any sort of publication, e.g. government policy reports; critiques of government policy by academics or NGOs; descriptions of policy changes over time; etc. We are particularly interested in policy evaluation or cost benefit analysis available on the adult skills policies identified. These publications do not have to be in English – we are particularly interested in native-language documents. We would be especially appreciative if you could send us publications, but would also be very happy with a bulleted list of suggested titles.**

Closing remarks	
	Thank you so much for taking part in this interview. Before we end I have a couple of things to ask you about this interview.
•	**Would you be happy to be named in the study report? We can anonymise your contribution if you would prefer this.**
•	**And lastly, are you happy to be recontacted with any follow-up queries that emerge during our analysis?**

International experts (anonymised description) interviewed for case studies

Country	Interviewee(s): Organisations and Roles
Canada 1	This interview was conducted with two civil servants in Employment and Social Development Canada, the government department with responsibility for Literacy and Essential Skills programming and for strategy and policy in LES and related areas.
Canada 2	This interview was conducted with a senior figure in one of Canada's pre-eminent literacy organisations, The Centre for Literacy, which supports best practices and informed policy development in literacy and essential skills by creating bridges between research, policy and practice.
Korea 1	This interview was conducted with a Senior Research Fellow at the Korea Research Institute for Vocational Education and Training. The interviewee is a PIAAC Korea expert.
Korea 2	This interview was conducted with a senior civil servant in the Office of Lifelong Vocational Education, within Korea's National Institute for Lifelong Education (NILE).
Korea 3	This interview was conducted with a professor of lifelong learning with considerable research experience in this field.
Netherlands 1	This interview was conducted with a Dutch expert on PIAAC, IALS and ALL.
Netherlands 2	This interview was conducted with a senior manager at a national and international consultancy, with expertise on the relationships between authorities, the labour market and education, across the educational spectrum from infant to adult education. The interviewee is a specialist in adult education and basic skills policies.
Netherlands 3	This interview was conducted with a Director of the Reading and Writing Foundation. This organisation has three aims: to campaign, lobby and raise awareness of adult literacy and numeracy issues in the Netherlands; to carry out research and campaigns on the international stage; to organise, through "language for life", informal and formal language courses in 6 Dutch cities. The Reading and Writing Foundation is financed by the Ministry for Education and a number of private and charitable organisations.
Norway 1	This interview was conducted with a senior figure at the Norwegian Agency for Lifelong Learning (Vox).
Norway 2	This interview was conducted with a Senior Adviser in the Norwegian Ministry of Education and Research.

Appendix 3: PIAAC skills definitions[36]

Table A3.1: Literacy proficiency levels and typical tasks

Level and score bands	Level description	Typical tasks
Below 1 (0-175)	Reading brief texts on familiar topics to locate a single piece of specific information. Understanding relies on basic vocabulary, with no need to use other text features. Requested information is identical in form to information in the question or directive. Tasks below level 1 do not make use of any features specific to digital texts.	Identifying a telephone number in a short piece of text, such as a flyer or advertisement; locating the name of a street in an address.
Level 1 (176-225)	Reading relatively short digital or print texts (continuous, non-continuous or mixed) to locate a single piece of information which is the same as the information given in the question. More than one piece of information may be presented in the text. Respondents are expected to recognise basic vocabulary, evaluate the meaning of sentences and be able to read paragraphs.	Entering personal information in a document; identifying the location of a named place in a short descriptive paragraph; finding the most popular holiday destination on a simple bar graph.
Level 2 (226 to 275)	More complex texts with tasks that require readers to paraphrase or make simple, low-level inferences. Not all information will relate to the task and respondents may have to: • read through or integrate two or more pieces of information based on given criteria; • compare and contrast or reason about information requested in the question; • navigate within digital texts to access and identify information from various parts of a	Identifying a particular part of a text for more information; making simple inferences in a narrative text, e.g. by inferring a contrasting situation or description; identifying the most important points in a short article; comparing information in a simple table.

[36] Tables A3.1 to A3.2 are reproduced from BIS (2013), The International Survey of Adult Skills 2012: Adult literacy, numeracy and problem solving skills in England, Research Paper 139: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/246534/bis-13-1221-international-survey-of-adult-skills-2012.pdf

Level and score bands	Level description	Typical tasks
	document.	
Level 3 (276 to 325)	Texts may be dense or lengthy, requiring an understanding of text and rhetorical structures, especially in complex digital texts. Tasks require the identification, interpretation or evaluation of information, with varying levels of inference. Respondents may have to: • construct meaning across larger chunks of text; • perform multi-step operations to identify and formulate responses (particularly in digital texts). Irrelevant or competing information may be present but it will not be more prominent than the correct information.	Identifying some of the main points of an argument; finding and collating information from several sources, such as different timetables.
Level 4 (326 to 375)	Tasks often require respondents to integrate, interpret or synthesise information from several complex or lengthy continuous texts. Respondents may have to: • make complex inferences and apply background knowledge; • identify and understand one or more specific, non-central ideas in the text in order to interpret or evaluate subtle evidence claims or relationships between different parts of texts; • understand conditional and competing information (which may be as prominent as correct information).	Making predictions in narrative text, e.g. what a character will do as the result of an event; understanding complex tables with multiple categories such as food labels; recognising when conditional information (if…?) is relevant to the task.
Level 5 (376 to 500)	Respondents may have to: • search for and integrate information across multiple texts; • construct syntheses of similar and contrasting ideas or points of view;	Extracting arguments from scientific papers; explaining and supporting different points of view; evaluating the reliability of web-based and other sources. Only one task was set at this level.

Level and score bands	Level description	Typical tasks
	• evaluate evidenced based arguments; • apply and evaluate logical and conceptual models or the reliability of evidence; • select key information. Respondents need to be aware of subtle, rhetorical cues and make high-level inferences or use specialised knowledge.	

Table A3.2: Numeracy proficiency levels and typical tasks

Level and score bands	Level description	Typical tasks
Below 1 (0-175)	Tasks are set in concrete, familiar contexts where the mathematical content is explicit with little or no text or distractors. Respondents will be expected to perform only simple processes such as counting; sorting; performing basic arithmetic operations with whole numbers or money; or recognising common spatial representations.	Calculating the number of cans in a plastic wrapper; adding the number of people present at three events; recognising simple geometric figures, e.g. a square; identifying date order.
Level 1 (176-225)	Tasks require respondents to carry out basic mathematical processes in common, concrete contexts where the mathematical content is explicit. There will be little text and minimal distractors. Respondents may have to carry out simple one-step or two-step processes.	Dividing simple prices or quantities; identifying large percentage reductions or increases (e.g. 50%) and multiplying or dividing for the full amount.
Level 2 (226 to 275)	Respondents need to identify and act on mathematical information and ideas embedded in a range of common contexts. The mathematical content is fairly explicit or visual with relatively few distractors. Tasks require the application of two or more steps or processes.	Relating a gauge to a quantity and working out how much one quarter is in volume; identifying departure times and calculating time remaining; multiplying numbers with up to two decimal places; using simple scales for conversions (e.g. lengths, temperatures); interpreting relatively simple data and statistics in texts, tables and graphs; simple addition and subtraction in a single task.
Level 3 (276 to 325)	Mathematical information may be less explicit, embedded in less familiar contexts and represented in more complex ways. Tasks have several steps and may involve choices about problem solving methods and relevant processes.	Working out the percentage of a discount; using a scale to convert between different temperatures and applying the result to other data beyond the scale; deriving and applying a formula; understanding and interpreting scale drawings; analysing basic data and statistics in tables and graphs.
Level 4 (326 to 375)	Respondents need to understand a broad range of mathematical information that may be complex, abstract or embedded in unfamiliar contexts. Tasks involve multiple steps and the choice of relevant problem solving strategies and processes. Tasks tend	Using a formula to work out a complex calculation; carrying out calculations to assess the veracity of a statement where background knowledge about relative sizes of countries (for example) must be

Level and score bands	Level description	Typical tasks
	to require analysis and more complex reasoning and may also require comprehending arguments or communicating well-reasoned explanations for answers or choices.	taken into account; understanding and using statistics and chance and spatial relationships.
Level 5 (376 to 500)	Tasks require respondents to understand complex representations and abstract and formal mathematical and statistical ideas, possibly embedded in complex texts. Respondents may have to integrate multiple types of mathematical information; draw inferences; develop or work with mathematical arguments or models; justify, evaluate and critically reflect upon solutions or choices.	No tasks were set specifically at this level. An individual would achieve Level 5 by successfully completing more of the items at lower levels and therefore accumulating a total score of 376 or above.

Table A3.3: PS-TRE proficiency levels and typical tasks

Level and score bands	Level description	Typical tasks
Below 1 (0-240)	Tasks are based on well-defined problems involving the use of only one function to meet one explicit criterion.	No tasks were set specifically at this level. An individual would be classed as below level 1 if he or she failed to score more than 240 points on level 1 tasks.
Level 1 (241-290)	Tasks are based on widely available and familiar technology applications, such as email software or web browser. Little or no navigation is required to access the information. The task involves few steps and a minimal number of operators. Task statements make goals easily understood, e.g. by the use of explicit criteria.	Locating a specific piece of information in a database; assigning emails to relevant folders.
Level 2 (291 to 340)	Tasks typically require the use of both generic and more specific technology applications (including some functions). Some navigation across pages and applications is required to solve the problem. Tasks may involve multiple steps and operators. Criteria for completion are specific but the route to solution may have to be defined. Evaluation, integration and inferential reasoning may be needed.	Using and completing online forms; setting up folders for email; applying criteria to e-commerce sites; evaluating different websites for reliability.
Level 3 (341 to 500)	Tasks typically require the use of both generic and more specific technology applications, including the use of tools (e.g. sort function). Respondents need to navigate across pages and applications to solve the problem. The goal may have to be defined by the respondent and criteria for completion may not be explicit. Evaluation, integration and inferential reasoning may be needed to a large extent.	Integrating online calendars with email and other information to create a work schedule; evaluating the source of web information in order to assess trustworthiness and value; sorting data to allow evaluation by category.

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