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ECONOMICS

**Department for Employment and Learning**

# **Study to identify how 'literacy' levels have developed over time**

**Final report**

**February 2010**

**Oxford Economics**

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## Acronyms

ALL: Adult Literacy and Life (Skills Survey)  
APS: Annual Population Survey  
BIS: Department for Innovation, Business and Skills  
BSA: Basic Skills Agency  
BSS: Basic Skills Standards  
CHS: Continuous Household Survey  
DE: Department of Education (NI)  
DEL: Department for Employment and Learning (NI)  
DfES: Department for Education and Skills (UK)  
ES: Essential Skills  
FE: Further Education  
HE: Higher Education  
IALS: International Adult Literacy Survey  
ISCED: International Standard Classification of Education  
LADB: Local Area Database  
LFS: Labour Force Survey  
NALA: National Adult Literacy Agency  
NI: Northern Ireland  
NISRA: Northern Ireland Statistics & Research Agency  
NOMIS: National Online Manpower Information System  
NQF: National Qualifications Framework  
OECD: Organisation for Economic Co-Operation and Development  
Ofqual: Office of the Qualifications and Examinations Regulator  
ONS: Office of National Statistics  
PfG: Programme for Government  
PIACC: Programme for the International Assessment of the Adult Competencies  
PISA: Programme for International Student Assessment  
PSA: Public Service Agreement  
QCA: Qualifications and Curriculum Authority  
ROI: Republic of Ireland  
STEM: Science, Technology, Engineering and Mathematics  
TfS: Training for Success  
UK: United Kingdom

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## Report highlights

Since the International Adult Literacy Survey (IALS) was undertaken in 1996, and furthermore since the Department for Employment and Learning (DEL) launched the Essential Skills Strategy in 2002, there has been little in the way of quantified evidence on the extent to which 'literacy' skills levels of the 16-65 population in Northern Ireland (NI) have progressed over the last decade and a half.

DEL's Essential Skill Research Steering Group made the decision in 2003 not to undertake any further in-depth research into measuring 'literacy' levels since IALS in 1996. It was decided not to take part in England's Skills for Life Survey, after consideration and on advice from Northern Ireland Statistics & Research Agency, who raised a number of concerns over the measuring instrument with the Skills for Life survey. The National Research & Development Centre (NRDC) also presented a paper which was highly critical of the survey method, analysis and robustness of the findings. Other reasons that NI did not take part in the Skills for Life survey was the fact that IALS and Skills for Life literacy levels did not map directly to the frameworks used in Essential Skills education; and because the then Department for Education and Skills (DfES) survey was a stand alone survey and at the time not likely to be re-run. The Research Steering Group also decided not to run an amended IALS Survey in NI, which other European countries undertook (known as the Adult Literacy and Life Skills Survey, ALL, 2003). It was recommended that the UK not take part in ALL at the time as it was perceived to offer little over and above what was already known from IALS. The ONS study took the view that the only major potential benefit of ALL participation was that it would provide the first international estimates for numeracy. In the version of ALL considered by the ONS in 1999, countries were required to sign up to all or none of the components and therefore it was felt to be too expensive when set against the benefits offered.

It is against this backdrop that Oxford Economics were commissioned by DEL in May 2009 to undertake a study to identify AND estimate how, using an interim methodology, 'literacy' skill levels have developed over time in NI, in advance of its participation in the OECD Programme for the International Assessment of the Adult Competencies (PIACC – the successor to IALS). The methodology developed in this project can be described as the education / qualification attainment 'risk ratio' approach using annual Labour Force Survey (LFS) / Annual Population Survey (APS) data on the stock of 16-65 population qualifications and NI IALS survey data on the association between education / qualification attainment and 'literacy' performance in NI. The term 'risk ratio', in this instance, refers to the share of persons 'at risk' of being at a particular IALS 'literacy' level as a percentage of all persons in each education / qualification attainment category. For the 'central trend' estimate series, we assume constant 'risk'-ratio' values from the IALS 1996 survey. This means that the trend in the stock (share and absolute number) of education attainment / qualifications of the 16-65 NI population is the only direct driver of 'literacy' trends.

The key observations from the trend analysis are:

- **Overall improvement in NI 'literacy' standards** – across all three IALS 'literacy' categories, the estimated trends indicate a rise, between 1996 and 2009, in the proportion of persons aged 16-65 performing at the highest standard IALS Level 4/5 (+4%) and a fall in the proportion at the lowest IALS Level 1 (-3%).
- **... and good relative improvement by UK standards** - our estimates indicate that 'literacy' standards have improved faster in NI than the other UK countries between 1996 and 2009, across each of the three IALS literacy categories – this is in terms of change in proportions performing at the highest IALS Level 4/5.

- **... the overall pace of improvement is slow** – however we estimated that roughly 4 in 5 persons aged 16-65 in 1996 in NI will still be in this cohort of interest in 2009. This means that unless a large share of this existing group is up-skilling and raising their 'literacy' standards (e.g. by participating in the Essential Skills Programme), the impact of more literate young persons coming through to the cohort and less literate older persons exiting is limited.
- **Internationally NI still lagging behind** – furthermore our estimates for NI 'literacy' standards in 2009 indicate that the province still lags behind the best performers such as Sweden, even when comparing to their proportions at each IALS level 13 years ago in 1996.

## Executive summary

**Note: In the context of this research, the term 'literacy' is defined as including BOTH literacy and numeracy skills, as based on the International Adult Literacy Survey (IALS) 1996.**

### Background context to research

Since IALS was undertaken in 1996, and furthermore since DEL launched the Essential Skills Strategy in 2002, there has been little in the way of quantified evidence on the extent to which 'literacy' skills levels of the 16-65 population in NI have progressed over the last decade and a half.

This is despite the importance of 'literacy' in overall skills policy in NI (as evidenced by specific 'literacy'-related PSA targets); significant amounts of public spending to address the 'literacy' challenge (see box below) and obligation to monitor impacts, particularly in a future, more constrained spending environment; and the widely acknowledged and researched importance of 'literacy' in modern day society from both an economic and social perspective.

DEL's Essential Skill Research Steering Group made the decision in 2003 not to undertake any further in-depth research into measuring 'literacy' levels since IALS in 1996. It was decided not to take part in England's Skills for Life Survey, after consideration and on advice from NISRA, who raised a number of concerns over the measuring instrument with the Skills for Life survey. The National Research & Development Centre (NRDC) also presented a paper which was highly critical of the survey method, analysis and robustness of the findings. Other reasons that NI did not take part in the Skills for Life survey was the fact that IALS and Skills for Life literacy levels did not map directly to the frameworks used in Essential Skills education; and because the then Department for Education and Skills (DfES) survey was a stand alone survey and at the time not likely to be re-run. The Research Steering Group also decided not to run an amended IALS Survey in NI, which other European countries undertook (known as the Adult Literacy and Life Skills Survey, ALL, 2003). It was recommended that the UK not take part in ALL at the time as it was perceived to offer little over and above what was already known from IALS. The ONS study took the view that the only major potential benefit of ALL participation was that it would provide the first international estimates for numeracy. In the version of ALL considered by the ONS in 1999, countries were required to sign up to all or none of the components and therefore it was felt to be too expensive when set against the benefits offered.

It is against this backdrop that Oxford Economics were commissioned by DEL in May 2009 to undertake a study to identify AND estimate how, using an interim methodology, 'literacy' skill levels have developed over time in NI.

### NI's 'literacy' challenge

Across each IALS 'literacy' category (prose, document and quantitative), over half of NI persons aged 16-65 performed no better than IALS Level 2 and below in 1996 (note level 2 refers to persons that may have developed coping skills to manage everyday literacy demands, but their low level of proficiency makes it difficult for them to face novel demands, such as learning new job skills).

Only 15-20% performed at IALS Level 4/5. This meant less than 1 in 5 persons aged 16-65 in 1996 demonstrated command of higher order information processing skills.

While NI's 'literacy' performance did not rate much worse than the rest of the UK or ROI in 1996, it did lag behind international mid-performers such as Canada and high-performers such as Sweden. Indeed our estimates, produced in this research (see section 5.4), for NI 'literacy' performance of the 16-65 population in 2009, show that despite improvement since 1996, NI is still behind these better performers, even when comparing NI performance today to the performance of Canada and Sweden 13 years ago (which may have improved since, further widening the gap).

While formal qualification / education attainment levels of the working age population have been improving, GCSE and A-Level results consistently exceeding records year-on-year and more school leavers going on to university, it is easy to be complacent that these trends automatically mean that 'literacy' standards have been improving at the same or similar rate.

This however may not necessarily be true. In this case this would have ramifications for the effectiveness and future design of Government programmes to address the 'literacy' challenge. For example there have been important technological and social changes since the mid-1990s which have the potential to have affected 'literacy' performance independently of formal education / qualification attainment. Widespread use of personal computers (with Word spell check and Excel for calculation) and mobile phones (with infamous 'text' language and calculators) are good examples of such influences. Though by no means unanimous, academic literature presented in the main report shows some evidence that these factors may have detrimentally affected 'literacy' standards of young persons (who later join the working age population). Although equally these factors are likely to have enhanced ICT 'literacy' skills, which since 2009, have become the third 'Essential Skill' in NI.

In addition, as flagged to us by the Office for National Statistics, the link between education / formal qualification attainment and 'literacy' is "an association, not necessarily causation", and this association need not hold constant over time against a backdrop of social and technological changes described above. Furthermore, even assuming that examination standards across the entire education spectrum have remained comparable (which some commentators would dispute), changes in the type of school subjects and FE, HE and training courses on offer and taken up (with varying 'literacy' theoretical and practical content) and the falling popularity of certain Science, Technology, Engineering and Mathematics (STEM) subjects etc, mean that the 'literacy' performance for someone today with say 5+ A\*-C GCSEs may be lower (or higher) than the equivalent person in 1996. One of the potentially most significant findings of this research (though it is only preliminary and requires validation), is the indication from English IALS and Skills for Life Survey results and our analysis that the correlation between education / qualification attainment and 'literacy' may not be stable and for the equivalent level of education / qualification attainment today, persons may be less literate and numerate.

## What we have done

The specific scope of the research was to:

- Establish whether or not it is feasible to design a robust model capable of measuring how much 'literacy' skill levels have developed in NI since the IALS survey in 1996.
- The outcome from an initial scoping phase was to provide a recommendation on whether 'literacy' performance of the 16-65 population (based on the existing IALS categories and levels) can be modelled, and if it could be modelled, provide interim 'literacy' estimates (a time series from 1996 to 2009), along with a full description of the proposed approach and accompanying caveats / validation checks.

To undertake the research, the following stages were undertaken:

- We developed a full understanding of the IALS methodology, definitions, categories and levels, and based on our own interpretation and other views, critiqued its strengths and weaknesses;
- We researched existing work on mapping IALS 'literacy' performance levels (Levels 1-5) with other skills frameworks, particularly the Basic Skills Standard on which the Essential Skills Programme is based – Greg Brooks 'equivalence' framework was unquestionably the most useful existing work on this;
- We then researched, from other country experiences in the UK and literature, what the potential options for estimating NI IALS 'literacy' trends are and assessed their individual merits – we are indebted to the contributions made here by DEL-equivalent counterparts in England, Scotland and Wales;
- We recommended one 'stop gap' option to estimate NI IALS 'literacy' trends and before proceeding, sought the opinions and approval for this option from our academic literacy experts (Professor John Field and Dr Graham Gudgin) and DEL-equivalent counterparts in England, Scotland and Wales; and
- Based on the recommended option, we produced an annual time series for NI IALS 'literacy' trends across the three categories and five levels, documented the relative strengths and weaknesses of this option and undertook validation checks to assess the robustness of the estimates.

In addition we also undertook some additional work that was beyond the original scope (but agreed with DEL during the course of the research):

- We produced an annual time series for England, Scotland and Wales IALS 'literacy' trends across the three categories and five levels to compare against estimated NI trends. The estimates were shared with each jurisdiction and at the time of reporting, no issues were raised to dispute the estimated trends in each jurisdiction.
- Given the importance of some core assumptions in the recommended option, primarily the association over time between education / qualification attainment and 'literacy' performance, we undertook sensitivity analysis to understand the:

- (a) Impact on the estimated NI 'central trend' series from gradually lowering the positive impact rising education / qualification attainment amongst the 16-65 population has on 'literacy' skills (based on the preliminary English analysis described above); and
- (b) The extent to which the NI relationships from IALS 1996 between education / qualification attainment and 'literacy' performance (i.e. 'risk ratios') need to change, in order for NI, by 2009 and given the observed pattern in 16-65 education / qualification levels from LFS data, to catch up with Swedish (high-performer) and Canada (mid-performer) 'literacy' standards in 1996.

### **Recommended option to estimate NI IALS 'literacy' trends**

As an interim 'stop gap', our recommendation for DEL in the main report was to model 'literacy' trends using an approach first identified by Dignan in the 'Essential Skills for Living Research'. Note Dignan did not actually attempt to apply this approach.

#### **Recommended option to estimate NI IALS 'literacy' trends**

The option can be described as the education / qualification attainment 'risk ratio' approach using annual LFS/APS data on the stock of 16-65 population qualifications and NI IALS survey data on the association between education / qualification attainment and 'literacy' performance in NI. The term 'risk ratio', in this instance, refers to the share of persons at / 'at risk' of being at a particular IALS level as a percentage of all persons in each education / qualification attainment category.

For the 'central trend' estimate series, we assume constant 'risk'-ratio' values from the IALS 1996 survey. This means that the trend in the stock (share and absolute number) of education attainment / qualifications of the 16-65 NI population is the only direct driver of 'literacy' trends.

This option was broadly supported by our academic experts and DEL-equivalent counterparts in other jurisdictions. The strengths and weaknesses of the option are listed below and described in more detail in the main report. On balance the strengths outweigh the weaknesses in our view, and together with positive results from the validation checks in the main report and the endorsements of our academic literacy experts, render the option a robust approach at this point in time to serve as an interim measure of NI 'literacy' trends.

<b>Strengths of adopted 'risk ratio' approach</b>	<b>Weaknesses of adopted 'risk ratio' approach</b>
<ul style="list-style-type: none"> <li>• Captures all of the major drivers of 'literacy' trends (see Box 5.2 in main report), particularly when 'sensitivity' analysis is also undertaken</li> <li>• Method is simple to understand, practical (as the required LFS data is available) and transparent</li> <li>• Updateable – estimates can be updated regularly and the process requires little additional resource when new or revised LFS data is published</li> <li>• Consistent time series – produces annual figures for 'literacy' performance across the 3 IALS categories and 5 levels (i.e. is not subject to problems of 'proxy' mapping to other skills frameworks)</li> <li>• Approach is supported by our academic literacy experts and DEL counterparts in other jurisdictions as an appropriate interim measure in advance of PIACC</li> </ul>	<ul style="list-style-type: none"> <li>• Possibly over-simplified</li> <li>• Education attainment is associated with 'literacy' skill levels but has not, to the best of our knowledge, been proven to be causally related</li> <li>• 'Literacy' skills are not solely a function of educational attainment (age and social characteristics matter). However due to limited IALS and LFS sample sizes it is not recommended to develop a more complex model. Estimated 'literacy' trends are also sensitive to / dependent on 'risk ratio' assumptions (for which we have limited knowledge of whether these have changed in NI – although 'sensitivity analysis' offers one solution to understanding the impact changing 'risk ratios' would have on literacy performance)</li> </ul>

## Estimated NI IALS 'literacy' trends

Full results of the estimated NI IALS 'literacy' trends between 1996 and 2009 are presented in chapter 5.

The key observations from the trend analysis include:

- **Overall improvement in 'literacy' standards** – across all three IALS categories, the estimated trends indicate a rise, between 1996 and 2009, in the proportion of persons aged 16-65 performing at IALS Level 4/5 (+4%) and a fall in the proportion at IALS Level 1 (-3%). There is also an estimated fall in the proportion at IALS level 2 (-2% to -3%) but rise at IALS level 3 (+1 to +2%). Note IALS Level 5 is the highest standard of 'literacy' performance and Level 1 the lowest.
- **... and good relative improvement by UK standards** - our estimates indicate that 'literacy' standards have improved faster in NI than the other UK countries between 1996 and 2009, across each of the three IALS literacy categories – this is in terms of change in proportions performing at IALS Level 4/5. Wales however is estimated to have reduced by more the proportion of persons aged 16-65 performing at IALS Level 1 (this is due to Wales having the largest decline in the share of persons with no qualifications according to the APS) and increased by more the proportion of persons at IALS Level 3.

### NI, England, Scotland and Wales estimated change in IALS 'literacy' performance (1996-2009)

	pp change (1996 IALS - 2009 OE estimate)			
	NI	England	Scotland	Wales
<b>Prose</b>				
Level 1	-3.2	-2.4	-2.8	-3.9
Level 2	-2.8	-1.9	-1.9	-1.2
Level 3	2.1	1.3	1.9	2.5
Level 4/5	3.9	3.0	2.8	2.6
<b>Document</b>				
Level 1	-3.5	-2.6	-2.7	-3.7
Level 2	-2.1	-1.5	-2.5	-1.3
Level 3	2.0	1.0	2.8	2.0
Level 4/5	3.5	3.2	2.4	3.0
<b>Quantitative</b>				
Level 1	-3.0	-2.7	-2.9	-3.8
Level 2	-2.6	-1.6	-1.0	-1.7
Level 3	1.4	0.4	1.3	2.2
Level 4/5	4.2	3.9	2.6	3.3

Source: IALS, Oxford Economics

Note: % 16-65 population

- **... the overall pace of improvement is slow** – we estimated that roughly 4 in 5 persons aged 16-65 in 1996 in NI will still be in this cohort of interest in 2009. This means that unless a large share of this existing group is up-skilling and raising their 'literacy' standards (e.g. by participating in the Essential Skills Programme), the impact of more literate young persons coming through to the cohort and less literate older persons exiting will be limited.
- **Internationally still lagging behind the best** – given the above point on 'slow improvement', it was perhaps not surprising that our estimates for NI 'literacy' standards in 2009 indicate that the province still lags a long way behind the best performers such as Sweden, even when comparing to their proportions at each IALS level 13 years ago in 1996. For example in 1996 36% of Swedish persons aged 16-65 performed at IALS Level 4/5 in quantitative literacy – for NI in 2009 we estimate this proportion is still only 23%.
- **'Absolute' versus 'share' trends** – as the 16-65 population in NI has been growing (from 1.04m in 1996 to an estimated 1.17m in 2009), a fall in the proportion at a particular IALS level does not automatically equate to a fall in absolute numbers at that same level. This holds true for IALS Level 2 for which overall between 1996 and 2009, there has been an increase in numbers estimated to perform at this level (despite a fall in its share). This is not necessarily a negative development as it may reflect the up-skilling of persons from IALS Level 1.

### Sensitivity analysis

The key caveat of the approach employed to produce the 'central trend' estimates is the necessary assumption of holding constant the association between education / qualification attainment and 'literacy' performance (i.e. the 'risk ratio' values).

It is very difficult to know how 'risk ratio' values have changed in NI in the absence of more recent IALS results since 1996 or a Skills for Life-type survey which England and Wales have undertaken. However by undertaking 'sensitivity analysis', it does mean at least that the adopted approach does have capacity to produce 'what if' trend estimates and illustrate how sensitive the 'central trend'

estimates are to altering the constant 'risk ratio' assumption. The key conclusions from the 'sensitivity analysis' were:

- Estimated 'literacy' trends are, as expected, highly sensitive to changes in the 'risk ratio' assumptions. The implication is that if in NI the positive correlation between education / qualification attainment and 'literacy' has weakened (in a similar magnitude suggested by our preliminary English analysis), then overall 'literacy' standards may have worsened despite the improving education / qualification attainment trend observed from LFS data. Note however this conclusion applies mainly to the proportion of persons performing at IALS Level 4/5 under the downside scenario. Interestingly the differences between the downside scenario and 'central trend' proportions at IALS Level 1 were negligible.

Of course it is important to emphasise that this downside scenario is purely a stylized 'what if' trend, not necessarily what we think the actual trend is. There is no hard evidence to suggest that the correlation between education attainment and 'literacy' has weakened per se in NI. The main reason for including this downside scenario is to illustrate the sensitivity of the central trend estimate to risk-ratio assumptions, and not to suggest we believe the downside scenario is more likely to have occurred than the 'central trend' estimate.

- NI 'risk ratios' would need to improve significantly to catch up with Swedish and Canadian 'literacy' standards. For example the proportion of persons aged 16-65 with degree / higher qualifications performing at IALS Level 4/5 prose would need to rise from 44% to 69% to meet Swedish (high performer) 'literacy' levels and to 52% to meet Canadian (mid-performer) 'literacy' levels.

As a final thought, this has been a complex piece of research, but we hope, a useful report for DEL to aid understanding of recent trends in NI 'literacy' performance and drivers. It should be remembered however that there are still important uncertainties over assumptions in the adopted option which mean that we will not fully know how 'literacy' standards are progressing in NI until PIACC results become available and are rigorously analysed and critiqued.

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# 1 Introduction

**Note:** In the context of this research, **the term 'literacy' is defined as including BOTH literacy and numeracy skills, as based on the International Adult Literacy Survey (IALS) 1996.** In NI, ICT became the third 'Essential Skill' in August 2009. However ICT was not part of the IALS 1996 'literacy' definition<sup>1</sup>.

## 1.1 Background context to research

Oxford Economics were commissioned by the Department for Employment and Learning (DEL) in May 2009 to undertake a study to identify how 'literacy' skill levels have developed over time in NI.

**Since IALS<sup>2</sup> was undertaken in 1996 (across several countries including NI), and furthermore since DEL launched the Essential Skills Strategy in 2002, there has been little reported and quantified evidence on the extent to which 'literacy' skill levels of the NI working age population have progressed.**

The lack of evidence on recent 'literacy' trends (and also the net additionality impact of government 'literacy' programmes and effectiveness of targeting 'high-need' groups) is despite both 'literacy' being a priority policy area for the NI Government and significant levels of public money having been spent to address 'literacy' challenges.

While it is likely that 'literacy' levels have improved since the IALS measurement in 1996 - due to the introduction of the Essential Skills Programme and other developments such as improving school performance -

DEL's Essential Skill Research Steering Group made the decision in 2003 not to undertake any further in-depth research into measuring 'literacy' levels since IALS in 1996. It was decided not to take part in England's Skills for Life Survey, after consideration and on advice from NISRA, who raised a number of concerns over the measuring instrument with the Skills for Life survey. The National Research & Development Centre (NRDC) also presented a paper which was highly critical of the survey method, analysis and robustness of the findings. Other reasons that NI did not take part in the Skills for Life survey was the fact that IALS and Skills for Life literacy levels did not map directly to the frameworks used in Essential Skills education; and because the then Department for Education and Skills (DfES) survey was a stand alone survey and at the time not likely to be re-run. The Research Steering Group also decided not to run an amended IALS Survey in NI, which other European countries undertook (known as the Adult Literacy and Life Skills Survey, ALL, 2003). It was recommended that the UK not take part in ALL at the time as it was perceived to offer little over and above what was already known from IALS. The ONS study took the view that the only major potential benefit of ALL participation was that it would provide the first international estimates for numeracy. In the version of ALL considered by the ONS in 1999, countries were required to sign up to all or none of the components and therefore it was felt to be too expensive when set against the benefits offered

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<sup>1</sup> This is understandable as the demand for ICT skills in the workplace is a relatively recent phenomenon, and was certainly less prevalent in 1996.

<sup>2</sup> IALS 1996 was a large-scale co-operative effort by governments, national statistical agencies, research institutions and the OECD to measure literacy levels of the working age population. For NI this was the first and only large-scale survey of its kind to measure literacy levels.

**Box 1.1: 'Literacy' policy context**

DEL launched the Essential Skills Programme in 2002, aimed at supporting the Essential Skills Strategy to improve adult literacy, numeracy and ICT skills. Since the launch, there have been over 97,000 adult enrolments on literacy and numeracy courses (figures correct as at 5th March 2009), and over 67,000 qualifications issued in Literacy and Numeracy (Source: Essential Skills Qualifications Factsheet 30th September 2009).

At a higher strategic level, skills have become a major policy focus of the NI Executive which is evident in the Programme for Government (PfG). Some of the Executive's key 'literacy'-related Public Service Agreement (PSA) targets include:

- Increasing the number of adult learners achieving a qualification in literacy, numeracy and ICT skills by 90,000 by 2015; and
- By March 2011, 42,000 adult learners will have achieved a recognised qualification in Essential Skills.

'Literacy' skills are also a major policy focus at national UK level. DfES launched a national skills strategy to help improve adult literacy and numeracy skills, known as the Skills for Life survey. In Republic Of Ireland, the National Adult Literacy Agency (NALA) is an independent membership organisation established in 1980 concerned with developing policy, advocacy, research and offering advisory services in adult literacy work. It has campaigned for the recognition of, and response to, the adult literacy problem.

We understand that DEL has agreed to participate in the OECD Programme for the International Assessment of the Adult Competencies (PIACC – see Annex C for more details on PIACC kindly provided by the Department for Business, Innovation and Skills). This will allow direct comparison of 'literacy' trends with IALS 1996 literacy results, although numeracy skill levels will not be comparable. PIACC will also cover a much wider set of capabilities.

However this study is not expected to commence until 2010 with results not expected to be available until 2013. This is a considerable time to wait for results on literacy levels in NI, especially with growing pressures on public funding and a demand for evidence on the impact, relevance and effectiveness of spending programmes such as the Essential Skills Programme.

It is therefore against this backdrop that DEL has commissioned this largely desk-based research to estimate direction of recent 'literacy' trends.

### Box 1.2: Research scope

The specific scope of the research was to:

- Establish whether or not it is feasible to design a robust model capable of measuring how far 'literacy' skill levels have developed in NI since the IALS survey in 1996. This was to be based on Oxford Economics' modelling expertise, available data and from reviewing other related research.
- The outcome from an initial scoping phase was to provide a recommendation on whether 'literacy' levels (based on the existing IALS literacy definition) can be modelled. If yes, then provide interim 'literacy' estimates (a time series from 1996 to 2009 along with a full description of the proposed approach and accompanying caveats / validation checks).

## 1.2 Why 'literacy' matters

DEL's 'Success Through Skills' strategy has recognised that 'literacy' skills are currently one of the major weaknesses among the NI workforce. Below we detail some of the reasons why 'literacy' skills are so important in modern day NI society and a crucial element in everyday life.

- **Empowerment and participation** – 'literacy' is seen as critical to informed decision-making, personal empowerment and active participation in local and global social communities.
- **Economy skills supply** - lower levels of 'literacy' skills are seen as a barrier to attaining higher level qualifications.
- **Economy skill demand** – 'literacy' demands have increased in the workplace as a result of more computerised processes and the shift towards services away from production industries. Oxford Economics' skills forecasting work for DEL also showed that the NI economy is becoming increasingly 'skills hungry' with fewer jobs in future for persons with lower level qualifications and lacking basic 'literacy' skills.
- **Social and standard of living benefits** - studies have shown that higher levels of 'literacy' result in significant social benefits including reduced social exclusion, increased life expectancy, reduced child mortality and improved children's health.
- **Economic benefits** - higher 'literacy' levels also create economic benefits at both an individual and economy-wide level. These include higher employment levels / a higher probability of being in work, higher incomes and overall faster economic growth. This has been concluded from a number of research studies including Oxford Economics' own research for DEL ('The Impact of Educational Attainment and Literacy Scores on Economic Growth and Productivity') and also from NI cross-sectional IALS 1996 results (see section 2.3).

### Box 1.3: 'Literacy' and employability

John Bynner (2002) of the University of London undertook a study titled 'Literacy, numeracy and employability' to address a number of questions on the impact of basic skills difficulties on individual life chances with respect to employment.

The results showed striking evidence of the significance of 'literacy' skills both in gaining employment after leaving school and also remaining and progressing in employment. **The research concluded that 'literacy' skills are not only the key building blocks of educational progress and qualifications, but entry into and progression in the labour market as well.**

The Essential Skills module within NISRA's Omnibus Survey reiterates some of the above points on why adults wish to improve their 'literacy' skills. Selected results from the October 2004, September 2006 and September 2008 rounds of the survey are shown below. Some of the key reasons for wishing to improve 'literacy' skills included 'wanting to improve chances of getting a job / get a better job', 'to gain a qualification', 'to earn more money' etc.

**Table 1.1: NI Omnibus Survey – reasons for improving 'literacy' skills**

	% responses		
	October 2004	September 2006	September 2008
I wanted to improve for my own satisfaction	59%	64%	54%
I wanted to be able to help my children	34%	28%	30%
I wanted to get a better job	20%	19%	18%
To gain a qualification	21%	18%	17%
I wanted to improve my chances of getting a job	18%	19%	15%
I could earn more money	13%	12%	12%
To help me do my current job better	10%	12%	12%
To progress into other learning or re-training	12%	9%	11%
To help me keep my current job	7%	4%	5%
I wanted to get promoted	5%	7%	5%

Source: NI Omnibus Survey - Essential Skills module

Note: Omnibus survey results are based on self-reported survey responses

## 1.3 Report structure

The remainder of the report is structured as follows:

- **Chapter 2 – IALS 1996 overview and key NI 'literacy' results:** An overview of IALS including the definition and categories of 'literacy', the underlying methodology and key 'literacy' results for NI. We also include here a critique of the IALS approach.
- **Chapter 3 – IALS 'equivalence' – mapping to other skills frameworks:** A discussion of mapping IALS 'literacy' levels to other qualification classification frameworks and associated challenges.
- **Chapter 4 – Options for estimating NI IALS 'literacy' trends:** An overview of options available for estimating 'literacy' trends, highlighting some of the major challenges involved and the reasons for selecting the recommended option.
- **Chapter 5 – Estimated NI IALS 'literacy' trends:** Estimated results for NI IALS 'literacy' trends, comparison results with other UK jurisdictions, validation checks and sensitivity.
- Annex A: Bibliography

- Annex B: Information on DEL training programmes relevant to literacy
- Annex C: Information on PIACC survey

## 2 IALS 1996 overview and key NI 'literacy' results

As explained previously, IALS 1996 was a large-scale international co-operative effort to measure 'literacy' levels of the working age population in a consistent way across participating countries.

For NI this was the first and to date the only large-scale survey of its kind to estimate 'literacy' skills of the working age population. It set out to profile the 'literacy' abilities of adults aged between 16 and 65 years of age using an internationally agreed measurement instrument and survey implementation protocols. By the end of 1998 over 20 countries had participated in the international survey, including ROI in 1994 and GB & NI in 1996. OECD's follow-up survey to IALS, known as the Adult Literacy and Life Skills Survey, ALL, in 2003, was subsequently run, however none of the UK nations or ROI participated.

### 2.1 IALS methodology

- Survey questions were initially asked to obtain background information on individual participants - e.g. age, highest qualification, work history etc.
- Interviewers then presented a booklet containing six simple tasks – in other words IALS was not based on self-reported 'literacy'. If a respondent failed to complete at least two of these correctly, the interview was adjourned.
- Respondents who completed two or more tasks correctly were then given a much larger variety of tasks, printed in a separate booklet.
- For scoring the level of 'literacy' proficiency, IALS employed a sophisticated methodology developed and applied by the Educational Testing Service. This was designed to measure 'literacy' proficiency for each of the three domains on a scale ranging from 0 to 500 points.
- 'Literacy' ability in each domain was expressed by a score, defined as the point at which a person has an 80 per cent chance of successful performance from among the set of tasks of varying difficulty included in the assessment.

### 2.2 IALS 'literacy' definition, categories and levels

IALS defined 'literacy' as **'using printed and written information to function in society, to achieve one's goals and to develop one's knowledge and potential'**.

It is worth at this stage recognising that the IALS definition is only one of several 'literacy' definitions, illustrating how there is no universally agreed definition. However of the other definitions that do exist, all have similarities and it would be highly unlikely that a term such as 'literacy' would have the same meaning or definition across different organisations. By way of example other definitions include:

*'The basic knowledge and skills needed by all in a rapidly changing world, a fundamental human right'* (UNESCO, 1997)

*'The ability to read, write and speak in English and to use mathematics at a level to function at work and in society in general'* (Qualifications and Curriculum Authority, 1999)

*'The ability to understand, use and reflect on written texts in order to achieve one's goals, to develop one's knowledge and potential, and to participate effectively in society'* (PISA, 2000)

Beyond the wider definition above, IALS developed three specific categories of 'literacy':

- **Prose 'literacy'**: The knowledge and skills required to understand and use information from texts such as passages of fiction and newspaper articles.
- **Document 'literacy'**: The knowledge and skills required to locate and use information contained in various formats such as timetables, graphs, charts and forms.
- **Quantitative 'literacy'**: The knowledge and skills required applying arithmetic operations, either alone or sequentially, to numbers embedded in printed materials, such as calculating savings from a sale advertisement or working out the interest required to achieve a desired return on an investment (i.e. this covers the numeracy aspect of 'literacy').

Within each of the three 'literacy' categories, levels of 'literacy' were also established based on scores from the IALS survey tasks (scores out of 500 are in brackets):

- **Level 1 (0-225)**: Indicates persons with very poor 'literacy' skills, where the individual may, for example, be unable to determine the correct amount of medicine to give a child from information printed on the package.
- **Level 2 (226-275)**: Respondents can deal only with material that is simple, clearly laid out, and for which the tasks involved are not complex. It denotes a weak level of 'literacy' skill, but more hidden than Level 1, and identifies people who can read, but test poorly. They may have developed coping skills to manage everyday 'literacy' demands, but their low level of proficiency makes it difficult for them to face novel demands, such as learning new job skills.
- **Level 3 (276-325)**: This level is considered a suitable minimum for coping with the demands of everyday life and work in a complex, advanced society. It denotes roughly the skill level required for successful secondary school completion and college entry. Like higher 'literacy' levels 4 and 5, it requires the ability to integrate several sources of information and solve more complex problems.
- **Levels 4 (326-375) and 5 (376 -500)**: Persons who demonstrate command of higher order information processing skills.

## 2.3 Key NI IALS 1996 results

In this section we summarise some of the key 'literacy' results from the NI IALS in 1996. Note this is not intended to be a repeat of the much more detailed analysis in the full NISRA IALS 1996 report.

- **Comparison across 'literacy' categories** - the distribution of 'literacy' skills among the NI 16-65 population<sup>3</sup> was similar in 1996 across each of the three 'literacy' categories of prose, document and literacy (Table 2.1).
- **Concentration of low 'literacy' skills in NI** - across each literacy category however, over half of the working age population performed at Level 2 and below (recall level 2 refers to persons that may have developed coping skills to manage everyday 'literacy' demands, but their low level of proficiency makes it difficult for them to face novel demands, such as learning new job skills). Only 15-20% performed at Level 4/5 - in other words less than 1 in 5 persons demonstrated command of higher order information processing skills (Table 2.1).

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<sup>3</sup> The IALS working age definition was 16-65. This is similar but not exactly equivalent to the NI official working age definition – male 16-64 and female 16-59.

**Table 2.1: NI IALS 'literacy' scores – total (1996)**

	Level 1	Level 2	Level 3	Level 4/5
Prose literacy	24%	30%	31%	15%
Document literacy	26%	28%	31%	15%
Quantitative literacy	23%	27%	31%	19%

Source: IALS 1996

- **Gender comparison** - while the 'literacy' levels of men and women were similar for the prose category, significantly higher proportions of men than women scored Level 4/5 for the document and quantitative 'literacy' categories (Table 2.2).

**Table 2.2: NI IALS 'literacy' scores – association with gender (1996)**

	Level 1	Level 2	Level 3	Level 4/5
<b>Prose literacy</b>				
Male	25%	29%	31%	15%
Female	23%	30%	31%	15%
Difference	2%	-1%	0%	0%
<b>Document literacy</b>				
Male	24%	26%	32%	18%
Female	27%	31%	29%	11%
Difference	-3%	-5%	3%	7%
<b>Quantitative literacy</b>				
Male	20%	25%	32%	23%
Female	25%	29%	31%	15%
Difference	-5%	-4%	1%	8%

Source: IALS 1996

- **UK and ROI comparison** - in comparison with GB and ROI, there was no significant difference across each of the three 'literacy' categories. In other words the rest of the UK and ROI also had just over half of the working age population performing no higher than Level 2 (although GB performance is slightly higher than NI across the three categories).
- **International comparison** - some countries, such as Sweden and Poland, had very skewed distributions across the different IALS levels with the majority of their working age population at either the upper (Sweden) or lower end (Poland) of the distribution. Other countries such as Germany, Switzerland and the Netherlands (Table 2.3) had more centrally distributed skill levels with only relatively small proportions performing at the upper or lower levels and the majority of the population performing at the middle skill levels (this is likely a reflection of the different education system throughout these countries). The NI distribution of 'literacy' skills could be said to be more negatively skewed towards lower levels but not to the same extent as Poland. Comparing Swedish prose scores (Table 2.3) to NI is a good illustration of **how NI lags behind some of the best 'literacy' performers**. The proportion of NI working age persons at Level 1 for each of the three categories was not however significantly different from the proportion at that level in the US, GB or ROI (although on this measure these countries were amongst the weakest performers).

**Table 2.3: International IALS 'literacy' scores – prose**

	Level 1	Level 2	Level 3	Level 4/5
Sw eden	8%	20%	40%	32%
Canada	17%	25%	35%	23%
Netherlands	11%	30%	44%	15%
Australia	17%	27%	37%	19%
United States	21%	26%	32%	21%
New Zealand	18%	27%	35%	19%
Germany	14%	34%	39%	13%
Belgium (Flanders)	18%	29%	39%	14%
Great Britain	22%	30%	31%	17%
Sw itzerland (French)	18%	34%	39%	10%
Republic of Ireland	23%	30%	34%	14%
NI	24%	30%	31%	15%
Sw itzerland (Germany)	19%	36%	36%	9%
Poland	43%	35%	20%	3%

Source: IALS

- Correlates with 'literacy' performance** - analysis of the 1996 NI IALS results showed, as would be expected, that **age and education attainment** were closely correlated with 'literacy' performance. For example for the quantitative 'literacy' category, persons with degree qualifications were 8 times more likely to perform at Level 4/5 compared to persons with no qualifications (Table 2.4). Younger age groups (who have had greater access to education and learning opportunities than previous generations) perform better on 'literacy' than older working age groups. Only 1 in 5 persons aged 16-25 performed at Level 1 on document 'literacy' in NI compared to 2 in 5 for persons aged 56-65 (Table 2.5).

**Table 2.4: NI IALS quantitative 'literacy' scores – association with education attainment (1996)**

	Level 1	Level 2	Level 3	Level 4/5
Degree or higher qualification	4%	10%	36%	50%
Other higher education below degree	7%	25%	36%	33%
A Levels, vocational level 3 or equivalent	4%	21%	43%	32%
Trade apprenticeships	27%	33%	30%	10%
GCSE grade A* - C, vocational level 2 or equivalent	11%	23%	41%	25%
Other qualification below level 2	23%	38%	29%	11%
No qualification	42%	30%	22%	6%

Source: IALS 1996

**Table 2.5: NI IALS document 'literacy' scores – association with age (1996)**

	Level 1	Level 2	Level 3	Level 4/5
16-25	19%	25%	36%	20%
26-35	20%	28%	34%	18%
36-45	24%	30%	32%	15%
46-55	32%	28%	26%	14%
56-65	41%	32%	21%	7%

Source: IALS 1996

- Economic activity characteristics** – according to the IALS results, persons in employment and full-time students in NI were more likely to perform at higher 'literacy' levels 4 and 5 across all three categories compared to the unemployed and economically inactive. The unemployed were almost twice as likely as the employed to perform at Level 1, with just under three quarters of the unemployed performing at the lowest 'literacy' levels (at the time this would have represented a major challenge for getting people back into work).

- **'Literacy' and income** – for all three 'literacy' categories, persons in the two lowest income groups were more likely to perform at IALS Level 1 than persons in the two highest income groups. Almost half of persons in the highest income group performed at levels 4/5.

**Causality?** *We have deliberately avoided reporting above that higher 'literacy' levels directly result in / 'cause' a higher probability of being in employment and earning a higher income. While this may well be the case, the positive relationship according to the IALS results is not on its own conclusive evidence of a causal relationship.*

### **Box 2.1: Summary of who the low and high 'literacy' performers are**

Below we summarise the key characteristics which tend to be prevalent among persons with low 'literacy' skills in contrast to persons with 'higher' literacy skills (according to NI IALS 1996 results).

#### **Typical characteristics of people with:**

##### **Low literacy skills (Level 1)**

- Older people with lower levels of formal education
- Unemployed and persons in receipt of lower incomes
- Persons in receipt of social security benefits

##### **High literacy skills (Level 4/5)**

- Younger persons - over three-quarters of persons performing at Level 4/5 were aged 45 and under
- Persons with higher formal qualifications - although a considerable proportion of those at Level 4/5 (43% on the prose scale) had not continued their formal education beyond lower secondary level

- **Self-reported 'literacy'** - the IALS survey also incorporated a section on self-reported 'literacy' skills i.e. how individuals perceived their own level of 'literacy'. This method is also adopted by the bi-annual NI Omnibus Survey run by NISRA which has a purposely designed Essential Skills module incorporated into the survey. Generally participants in IALS in NI were 'pleased' with their 'literacy' skill levels. 38% considered their reading skills as excellent with a further 48% describing them as good. Satisfaction with writing and mathematical skills was slightly lower. However when tested using the IALS methodology, only 15-20% of working age persons overall performed at Level 4/5 across the three 'literacy' categories. **This indicates that people rate their level of 'literacy' skill as higher than they should.** While self-assessment measures have been described as a good way of measuring demand for programmes such as Essential Skills, the above interpretation suggests that demand from self-reporting would under-estimate true demand as individuals are not fully aware of what high 'literacy' performance is.

## 2.4 IALS critique

To conclude the chapter, we provide below an overview of some of the strengths and weaknesses of the IALS methodology that have been identified in the decade and a half since IALS was undertaken in NI.

### Strengths

- **Lack of an alternative 'literacy' measure** - according to Sweeney et al (1998), IALS 1996 is the original basic reference point for any consideration of the extent of low 'literacy' skills in the NI population and the characteristics of people with low skills. In 2009 this still remains the case given the costs and complexities surrounding surveys of this nature.
- **Headline policy-relevant results** - though IALS findings have been subject to some criticism (see next), IALS 1996 estimates for the proportion of the working age population at Level 1 on the three 'literacy' scales provide a 'headline' or upper-level indicator of the incidence of low 'literacy' skills in NI. That is the indicators signalled the need for a strategy such as Essential Skills.
- **Representative** - IALS was based on probability sampling and therefore provided robust, reliable and representative statistics for the population aged 16-65 at that time of the survey.
- **Internationally consistent** - IALS was carried out on a consistent basis, using the same questionnaire and test items, not only within NI across different groups, but also in each of the 20 countries which participated, thus providing reliable international comparability of results
- **Small standard errors** - standard errors for the entire NI IALS sample are relatively small, at below one percent for each of the three 'literacy' scales, thus giving confidence in the accuracy of results.

### Weaknesses

- **The obvious problem with using IALS as a baseline, particularly for NI, is that the headline indicators are now increasingly out-of-date (Brooks and Wolf, 2002 given that there has been no follow up to the IALS in 1996)**
- **Lack of read-across to other literacy frameworks / standards** - IALS categories and levels do not provide measures which match the new National Standards for Literacy and Numeracy. IALS results do not, for example, indicate what proportion of the population is performing at Entry Level 1, 2, or 3. In fact there is only a very approximate equivalence between IALS and the Basic Skill Standards.

- **Opaque** - one of the difficulties with IALS is that the measurement and scoring procedures are considered, by some, as opaque and less transparent than desired<sup>4</sup>.
- **Numeracy not directly measured** - though the quantitative 'literacy' scale provides an indirect measure of numeracy skills, IALS does not directly measure numeracy (Moser actually concludes that IALS under-estimates the extent of numeracy problems). The Adult Literacy and Life Skills Survey (ALL) aimed to address this weakness (see later) - however the UK (including NI) opted out of undertaking this survey for various reasons including cost.
- **Alternative 'literacy' definitions** – though perhaps an unfair criticism of IALS, it is still worth mentioning that the IALS broad definition of 'literacy' does not match other 'literacy' definitions (although it is difficult to say which definition available is best and there are, to be fair, many similarities across definitions)
- In addition to the above we were advised by Professor John Field, our academic literacy expert, that many tutors and literacy stakeholders are generally critical of surveys such as IALS. This though is typical of surveys of this nature. However to counter balance this, there clearly are other stakeholders such as DEL and counterparts in GB who support and value a survey of this nature.

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<sup>4</sup> For example the IALS method used to produce the proficiency estimates generates multiple plausible values on each of the three literacy scales for each respondent (Sweeney et al, 1998). That is, individuals are assigned a distribution of proficiency scores, from which population sub-group estimates are calculated.

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### 3 IALS 'equivalence' – mapping to other skills frameworks

As stated towards the end of the previous chapter, but worth repeating again, **one of the major drawbacks of IALS is the difficulty mapping IALS 'literacy' levels to other national qualification frameworks currently in place.** This was emphasised in a piece of research undertaken by Greg Brooks and Sammy Rashid 'Literacy and Numeracy Levels of 13-19 year olds in 2007' for the National Research and Development Centre for Adult Literacy and Numeracy. Brooks however did reason that some attempt should be made to establish a mapping framework.

- Specifically Brooks noted that the 1996 IALS 'literacy' levels 1-5 did not match easily with the standards used at that time in England and Wales [the Basic Skills Agency's (BSA) Communication and Numeracy Standards]. In particular he recognised that the boundary between IALS Levels 1 and 2 did not align with BSA Entry Level and Level 1 (the IALS boundary was somewhat higher).
- However with the draft National Standards for Adult Literacy and Numeracy in 2000, Brooks noted that a deliberate decision had been taken to raise the BSA Entry Level and Level 1 boundary to align with the IALS Level 1 / Level 2 boundaries respectively. This was confirmed by the BSA Director at that time. This shift, and a corresponding one in numeracy, was then used by the BSA to re-calibrate some survey data it had collected in the mid-1990s which aligned results much more closely with IALS.
- Once the new National Standards for Adult Literacy and Numeracy had officially raised the Entry Level / Level 1 boundary, in 2001 the BSA re-issued the results of the BSA 1996/97 survey of 'literacy' needs across England. This resulted in the proportion of adults having 'literacy' below the new Level 1 - 24% - being almost exactly equal to the IALS GB Level 1 share of 23% (Basic Skills Agency, 2001).
- Brooks concluded that there did appear to be a basic correspondence between the differing classification of levels (IALS and the new national standards) with Level 1 being seen as basically 'competent comprehension of not very complicated information', and Level 2 as somewhat 'more competent comprehension of rather more complex information'.

Building on the above, Brooks has attempted to establish a qualifications framework which allows, as far as possible, the mapping of IALS to the new national standards and other qualification frameworks (Fig 3.1).

Despite obvious limitations given the complexity of the task, it has been agreed that this may be the only proxy framework available for mapping more recent standards and frameworks to IALS and vice-versa. **It is important to bear in mind though that even with this framework, it is considered that IALS and the Basic Skills Standard (and thereby also the NQF and National Curriculum key stages – see Table 3.1) can only be compared in a very approximate fashion.**

**Fig 3.1: Greg Brook IALS mapping framework**

		Key Skills, Level 5	National Qualifications Framework Level 5	Honours Degree	IALS Level 5
		Key Skills, Level 4	National Qualifications Framework Level 4	Foundation degrees etc.	
		Key Skills, Level 3	National Qualifications Framework Level 3	A Levels, IB, etc.	IALS Level 4
	National Standards for adult literacy and numeracy, Level 2	Key Skills, Level 2	National Qualifications Framework Level 2	GCSE A* - C	IALS Level 3
National Curriculum Level 5	National Standards for adult literacy and numeracy, Level 1	Key Skills, Level 1	National Qualifications Framework Level 1	GCSE D-G	IALS Level 2
National Curriculum Level 4					
National Curriculum Level 3	National Standards for adult literacy and numeracy, Entry Level 3		National Qualifications Framework Entry Level		IALS Level 1
National Curriculum Level 2	National Standards for adult literacy and numeracy, Entry level 2				
National Curriculum Level 1	National Standards for adult literacy and numeracy, Entry level 1				
	National Standards for adult literacy and numeracy, Pre-Entry Level				

Source: Greg Brooks, 2007

**Table 3.1: Qualifications and Curriculum Authority qualifications framework**

Basic skills/ Essential Skills	Key skills	National Qualification Framework	National Curriculum
Entry Level 1		Entry level	Key Stage 1
Entry Level 2			Key Stage 2
Entry Level 3			Key Stage 3
Level 1	Level 1	NVQ Level 1	Key Stages 4 and 5
Level 2	Level 2	NVQ Level 2	Key Stage 6 (GCSE Grades A*-C)

Source: Oxford Economics, QCA, Greg Brooks

## 4 Options for estimating NI 'literacy' trends

The preceding chapters essentially provide the background for the main focus of the research, which is assessing options for estimating NI IALS 'literacy' trends and actual estimation of recent changes in NI 'literacy' levels. This chapter deals with the first element and is structured as follows:

- **Challenges** - a comprehensive assessment of the difficulties associated with estimating 'literacy' trends following on from the IALS measure in 1996, which need to be borne in mind when considering options;
- **Country lessons** - a look at what other countries have done in terms of measuring and estimating more recent 'literacy' trends;
- **Literature lessons** - an outline of the range of options identified in literature for estimating 'literacy' trends as a follow up to the IALS measure (drawing heavily on Tony Dignan's 'Essential Skills for Living Research' for DEL) including the pros and cons of different options; and
- **Recommended option** - to conclude, a brief discussion of our recommended option (more detail is provided in the next chapter) and the views of our academic literacy experts and DEL counterparts in the other GB countries.

### 4.1 Challenges estimating 'literacy' trends

Before looking at country and literature lessons, it is useful to start by summarising the challenges and nuances involved in estimating NI IALS 'literacy' trends. Some of these have been mentioned already in the report, while others are presented and explained here for the first time.

- **Mapping IALS to other skill frameworks** - IALS and the Basic Skills Standard (and thereby also the NQF and National Curriculum key stages etc) can only be compared in a very approximate fashion. The Brooks mapping framework, while very useful, is by no means a uniformly accepted classification. The implication of this for NI is that **levels of achievement on the Essential Skills Programme, NI's flagship literacy intervention, can only roughly be translated into numbers moving up the 'literacy ladder' between IALS levels**. Furthermore Basic Skills Standard entry levels 1 to 3 all fall under IALS Level 1 so **achievements below Essential Skills Level 1 do not register as improvements under IALS** (in other words IALS Level 1 represents a particularly broad range of 'literacy' competency). As Table 4.1 shows, as a proportion of total Essential Skills achievements, entry levels 1-3 (equivalent to IALS Level 1) typically represent around half of total achievements. It is also worth noting here also that achievement data for Essential Skills is only available from 2003 (as the strategy was launched in 2002) yet we have to estimate 'literacy' trends from the IALS base year in 1996. One of the interesting questions for this research is whether there is a break in 'literacy' trends (i.e. a step up in improvement) after the launch of the Essential Skills strategy.

**Table 4.1: NI Essential Skills achievements**

	Basic Skills Standard	2003-2009 % total
<b>Literacy</b>		
IALS Level 1 (proxy)	Entry Level 1	7%
	Entry Level 2	11%
	Entry Level 3	30%
IALS Level 2 (proxy)	Level 1	32%
IALS Level 3 (proxy)	Level 2	20%
IALS Level 4/5 (proxy)	-	N/A
<b>Numeracy</b>		
IALS Level 1 (proxy)	Entry Level 1	5%
	Entry Level 2	10%
	Entry Level 3	32%
IALS Level 2 (proxy)	Level 1	30%
IALS Level 3 (proxy)	Level 2	22%
IALS Level 4/5 (proxy)	-	N/A

Source: DEL

- Mapping IALS to education attainment, including specific subject areas** – similar to the challenge above, IALS levels can only be roughly compared to specific levels of education attainment. For example data is readily available on pupils achieving 5+ A\*-C grades at GCSE or 3+ A-C grades at A-Level but this can only be roughly translated into IALS levels using the Brooks framework. Furthermore there is little **scope for differentiation when classifying students at either end of the spectrum within these levels of attainment**. For example using the Brooks mapping framework, a pupil with 10 GCSE A\*s and one with 5 GCSE C grades would both be classified at that stage in their life as IALS Level 3. In addition the **IALS survey did not produce results for the impact of education attainment in different subjects on 'literacy'**. We do not know for sure then from IALS whether it matters for 'literacy' performance if attainment of 5 A\*-C GCSEs included or excluded English and Mathematics but we imagine it would have some influence. To illustrate this, the English Skills for Life Survey revealed that persons with a maths qualification tended to perform at a higher level in the numeracy assessment than those without. (However there was also evidence from the English Skills for Life Survey that it was possible to gain a good GCSE pass in maths and not to score highly on the numeracy assessment.<sup>5</sup>).
- Change in relationship between 'literacy' and education attainment?** As shown previously and as would be expected, literacy performance in 1996 was closely correlated with education attainment according to IALS results for NI. This **does not however guarantee that over time this exact correlation remains stable**. Even if we assume that examination standards across the entire education spectrum have remained comparable, changes in the type of school subjects and FE courses on offer and taken up and the falling popularity of certain STEM subjects etc, mean that the 'literacy' performance for the average person today with say 5+ A\*-C GCSEs may be higher or lower than the equivalent person in 1996. Hence there remains some uncertainty surrounding this issue. One of the respondents from ONS (who provided feedback on the research) also correctly makes the point we highlighted earlier that the education attainment-'literacy' link is "an association, not necessarily a causation".

<sup>5</sup> 24 per cent of those with an A\*-C maths pass were assessed as Entry level 3 or below for numeracy, Skills for Life Survey, pg 71

In addition there have also been important **technological and social changes** since the mid-1990s which have the potential to have affected 'literacy' performance independently of formal qualification attainment. Widespread use of personal computers (with Word spell check and Excel for calculation) and mobile phones (with infamous 'text' language and calculators) are good examples of such influences. It is though extremely difficult to quantify what impact these influences might have and even with the release in future of IALS-type survey results, it is likely to be extremely difficult to isolate the impact of these influences. We have however been able to identify some research on these influences and highlighted some of the findings in Boxes 4.1 and 4.2 below.

**Box 4.1: Abstract from 'The Impact of Computer Use on Literacy in Reading Comprehension and Vocabulary Skills'**

Odette Radi, Department of Science and Mathematics Education, The University of Melbourne  
<http://crpit.com/confpapers/CRPITV8Radi.pdf>

*This paper presents a pilot study. It was set to investigate a small sample of subjects in a junior high school on whether the increased use of computers, both in domestic and school environments, has affected the students' development of literacy in reading comprehension and vocabulary skills. This stemmed from personal observation as a classroom teacher in the computer studies area. Progressively, the availability of personal computers is increasing. Students began to display more interest in using the computers rather than reading and writing in class. Teachers also expressed their concern about the decline of literacy skills that our students are demonstrating through their submitted work.*

*The data reveals that the majority of students under study have access to personal computers. They are more or less exploiting the hardware as well as the software applications without the assistance of computer manuals. They are spending more time at their workstations playing games rather than reading a variety of printed texts which might benefit the development of their basic comprehension and vocabulary skills.*

*The parents' responses were for and against the use of computers. The majority of them felt that their children were spending more time using the computer than reading any type of printed text. The high use of computers is not allowing their children to develop their literacy skills as expected at this age. Spending their time exploring the microelectronic medium is good for developing computer literacy but not language literacy.*

*Nevertheless, the parents had been convinced of the necessity of technology in their domestic environment for their children's needs. This area requires further study on a wider scale for the vast advancement in computer use is still increasing. The transformation is occurring faster than the society can adapt to it.*

**Box 4.2: Extracts from 'Children's use of mobile phone text messaging and its impact on literacy development in primary school'**

Clare Wood, Emma Jackson, Beverly Plester & Lucy Wilde, Coventry University

[http://partners.becta.org.uk/upload-dir/downloads/page\\_documents/research/reports/childrens\\_use\\_of\\_mobile\\_phone\\_text\\_messaging.pdf](http://partners.becta.org.uk/upload-dir/downloads/page_documents/research/reports/childrens_use_of_mobile_phone_text_messaging.pdf)

*The fastest growing market of mobile phone users has been reported to be pre-teen children and the Ofcom Media Literacy Audit (2006) of over 1500 UK children reported that 49% of 8-11 year olds had their own mobile phone ... Questions have been raised about the effect of text messaging on standard literacy, and answered largely through speculation and anecdote. Detailed, objective answers to this question have important implications for the education of school age users of mobile technologies.*

*There has been much media speculation regarding the effect that texting may have upon children's literacy (see Crystal, 2008). Many have reported unintentional intrusions of abbreviations used in texting (so-called 'textisms') in inappropriate contexts, an issue particularly cited in relation to children's school work (BBC, 2005). Thurlow (2006) has reported a critical discourse analysis of over 100 media articles focused on texting, drawing out several themes of high profile concern to the journalists. The flavour of these was decidedly negative and often exaggerated, published with little regard to the actual uses of text messaging.*

*We argue that texting allows children to experiment with language in an informal and playful manner ... Experimentation may enhance the development of key skills involved in the acquisition of literacy. Texting sees children explicitly demonstrating an understanding of how words can be manipulated, segmented and blended to allow for succinct and successful communication. Indeed, many of the abbreviations that children use when texting are phonological reductions ... phonological awareness is consistently associated with success in literacy development (Adams, 1990) ... A further factor with bearing on literacy attainment is that text messaging, in whatever form, provides children with additional exposure to the written word. Cipiulewski and Stanovich (1992) demonstrated that children's reading ability at around the age of 10-11 years was predicted by a measure of text exposure after earlier reading ability and orthographic decoding skill were accounted for (also see Stainthorp, 1997). It is possible that text messaging provides young children with an important increase in exposure to text, and also improves their motivation to engage with written communication without the constraints of school expectations.*

*... It is important to acknowledge that exposure to misspellings does not necessarily have a negative effect on the subsequent learning of correct spellings in children (Ehri, Gibbs & Underwood, 1988; Dixon & Kaminska, 2007). Although textisms are 'misspellings' in a conventional sense, they are phonologically and orthographically 'acceptable' forms of written English, and for children there is no evidence that knowledge or use of them would cause interference with their learning of conventional written English.*

- **Impact of training programmes on 'literacy'?** Outside of Essential Skills, Training for Success, which replaced Jobskills, is DEL's main training programme (see Annex B for details on DEL's training programmes). Participants whose 'essential skills' are deemed to be lacking are, to the best of our understanding, enrolled on the Essential Skills programme. However thinking beyond this, given the range of training courses people enrol on, this begs the following questions:
  - Does achievement of a Training for Success formal qualification at say NVQ Level 2 (the proxy threshold between IALS Level 2 and 3 according to the Brooks framework) in practically taught subjects such as Hair & Cosmetics, Motor Vehicle Repair & Maintenance etc) actually result in any improvement in 'literacy' if tested using IALS methods?; and
  - For different courses at the same NVQ level, is there a differential degree of 'literacy' content and learning and thereby progression up the IALS 'literacy ladder' if persons achieve qualifications?

The simple answer to these questions is that beyond speculation, it is very difficult to know with any precision and confidence<sup>6</sup>. Indeed the same rationale of thinking here applies outside Training for Success to the choice of GCSE, A-Level and further & higher education courses. **In reality it is mainly only the Essential Skills Programme that has a direct and well understood impact on 'literacy' performance** (notwithstanding the IALS-Basic Skills Standard mapping issue). This is because we can broadly relate Essential Skills achievement to IALS levels and because the primary content and objective of the Essential Skills course is to improve 'literacy' skills.

- **Complexity of a stocks and flows model** – originally we had envisaged developing a stock and flows model to estimate 'literacy' trends. In a perfect situation this would still be the ideal and most transparent approach (but incredibly complex). This would involve starting with the IALS 1996 data as a base and incorporating the annual flows of persons and their 'literacy' skills into and out of the NI working age population (and any improvement in 'literacy' skills of persons after they enter the working age population – e.g. students progressing from GCSE to A-Level<sup>7</sup>, persons achieving Essential Skills qualifications etc). **However given the close association between literacy performance and education attainment, this means that the entire education & training supply-side chain (schools, FE, HE, training providers etc) and up-skilling & re-skilling of the existing working age population, as well as skills flows into and out of the 16-65 population (such as the 'brain drain' of school and university leavers and migration), would all have the potential to affect overall working age 'literacy' levels in NI.** In other words the drivers of NI 'literacy' standards go far beyond the impact of direct interventions such as the Essential Skills programme<sup>8</sup>.

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<sup>6</sup> In any case no NI achiever / qualifier data is available for Jobskills before 1999 – recall IALS results for NI need to be extrapolated from 1996

<sup>7</sup> Equally the best performers at 16 (such as persons with A\* grades in English and Maths) may already be at IALS Level 4/5 at this stage in their lives.

<sup>8</sup> The influx of Eastern European migrants to the NI economy poses a different stock and flow problem altogether given issues over the comparability / read across of foreign qualifications to national qualification frameworks although initiatives such as the Bologna process are starting to address this). The LFS sometimes rather unhelpfully classifies migrant qualifications under the opaque 'other' category, a point also identified to us by Geoff Bright from ONS. Deciding whether to apply the same IALS 1996 education attainment-literacy relationship from the indigenous population for migrants is unlikely to be appropriate, especially for the literacy category which will also depend on English language competency). To the best of our knowledge the NISRA IALS full report did not present results for foreign-born persons - the foreign-born population in NI was much smaller in 1996 and in any case demographically quite different from today (another problem even if data for foreign-born persons was available from IALS 1996!).

## 4.2 Developments since IALS within UK countries

This next section takes a look at what other countries have done (mainly focused within the UK) in terms of measuring and estimating more recent 'literacy' trends. This section has been validated by individual DEL-counterparts in each country.

### Scotland

The Scottish Executive report on Adult Literacy and Numeracy was launched in 2001. This report was informed by a programme of research but **did not at the time include a new Scottish survey to measure 'literacy' levels**<sup>9</sup>. Instead as for NI, the report continued to rely on IALS 1996 data.

Scotland has also commissioned three 'literacy'-related research projects:

- Workforce Survey - a household survey of the workforce, aimed at identifying differences in the ways people use their skills at work and the 'literacy' demands that they face in their jobs. The main finding was described as a 'positive spiral', whereby persons with good educational attainment are in more skilled jobs, making greater use of their literacy and numeracy skills.
- Employer Survey - the aim was to obtain Scottish employers' views of 'literacy' in the workplace. The survey found that 'literacy' skills do not appear at the forefront of employers' minds in recruitment or when considering the skills of their workforce. This echoes the findings reported in the NI Skills Monitoring Survey (Skills Unit, 2001).
- Literature review of 'literacy' in the labour market - this considered a range of issues arising from literature including the demand for 'literacy' skills, influences on adult basic skills, Parsons and Bynners' research using the National Child Development Study and the impacts of low 'literacy' skills.

More recently we have learnt, through our discussions with Scottish officials as part of this research, that **Scotland has conducted a re-run of the IALS survey** [though it was named the Adult Literacy and Numeracy (ALN) survey]. The raw data from the survey has only recently been received and is currently being quality assured (it is estimated that results will be published in April 2010). The data will provide direct comparisons with the 1996 IALS results at national level.

In addition Scotland also currently has a **proxy 'running' measure for 'literacy' skills** as part of its set of national indicators (see <http://www.scotland.gov.uk/About/scotPerforms>). The indicator is 'to reduce the number of working age people with severe literacy and numeracy problems' and is proxied by the percentage of adults with SCQF Level 4 qualifications or below from the Annual Population Survey (the APS is closely associated with the Labour Force Survey<sup>10</sup>). This indicator is presented solely as a readily available, interim proxy until ALN results are published (and in truth is far from a precise proxy for 'literacy')<sup>11</sup>.

Lastly Scotland is also considering using the **Annual Population Survey**, and other sources, to model adult 'literacy' levels in local authority areas. Though standard errors for local authority estimates

<sup>9</sup> It was said at the time that "designing and carrying out such a survey could have taken up to two years and cost around £2 million, money which might be more effectively spent on increasing learning opportunities".

<sup>10</sup> The APS comprises the quarterly Labour Force Survey (LFS) plus data from the Annual Local (Area) Labour Force Survey (LLFS).

<sup>11</sup> Even after the publication of ALN results, it has been indicated that there will still be the need for a 'literacy' proxy (as the indicator will continue to be monitored). We have been informed that the new ALN survey results (in conjunction with previous IALS data for Scotland) will be used to help "tighten" this proxy measure. This will then be estimated post-ALN using potentially a combination of social background characteristics (though there may be sampling issues here) and formal qualifications levels (potentially in specific subject areas).

would be large given small sample APS sizes for local authorities and **we would not recommend estimation of 'literacy levels' for NI councils (as the NI local authority equivalent of the APS – the Local Area Database (LADB) – would also have similar sampling issues)**. In any case as a starting base, IALS 1996 'literacy' results are not available below NI regional level.

## England

The 'National Strategy for Improving Adult Literacy and Numeracy' in England committed the then Department for Education and Skills (DfES) to conduct a survey of 'literacy' in England. The survey - the **Skills for Life Survey** – was undertaken in 2002/03.

The aim was to (1) produce a national profile over five broad levels of competence, corresponding with the Basic Skills Standards for adult literacy, numeracy, ESOL and information & communications technology – e.g. Entry level 1 or below, Entry level 2, Entry level 3, Level 1 and Level 2 or above and hence not directly comparable to IALS; and (2) to assess the impact different levels of 'literacy' had on people's lives.

Note the survey treated 'literacy' as one domain rather than two i.e. 'literacy' did not comprise of literacy and numeracy and only included literacy. In addition the survey only covered England. The age range of those who took part in the survey was between 16 and 65 and normally resident in England.

The Department for Business, Innovation & Skills (BIS) is currently in the process of commissioning a **follow-up to the 2002/03 Skills for Life Survey**. Development and piloting of the research tools (background questionnaires, literacy assessment, numeracy assessment and ICT assessment) is currently underway with the aim of commissioning a main-stage survey to run in 2010, with reporting in spring 2011.

The primary research aims of the 2010 Skills for Life Survey will be to:

- Update the Department's understanding of literacy and numeracy levels among the working age population of England, in line with Leitch ambitions and PSA targets;
- Provide a new baseline of ICT skill levels among the working-age population in England;
- Understand the demographic, social and motivational factors related to skills levels; and
- Compare the results of the 2010 survey with those of the 2003 survey to examine change over time in the population's skills levels.

In addition to this and according to the Department for Business, Innovation & Skills, the **English administration has committed to participation in PIACC** (recall Annex C has more detail on PIACC).

## Wales

Following on from England's **Skills for Life Survey** in 2002/03, the Basic Skills Agency asked the British Market Research Bureau in 2003 to extend the survey to Wales so that comparative data would be available. By this time, the Welsh Assembly Government had assumed responsibility for education in Wales. Nevertheless it still retained the Basic Skills Agency to implement its all-age National Basic Skills Strategy and commissioned the extension of the Skills for Life Survey to produce a new baseline for literacy skills in Wales. A new Basic Skills Survey is due to take place in 2010. The Welsh Assembly Government has decided not to participate in PIAAC.

## International

The main development internationally since IALS in 1996 has been the **Adult Literacy and Life Skills Survey** (ALL). This provided an opportunity for participating countries to obtain more recent 'literacy' data comparable to IALS. ALL had many similarities to IALS and extended the range of skills covered. The full ALL survey covered prose and document 'literacy, numeracy and problem solving. Its direct measurement of numeracy was one of its key advantages over IALS. As for IALS, the definition of the working age population used by the survey was 16-65 year olds. ALL was undertaken in 2002/03 with a follow up in 2004/05. However neither the UK nor ROI availed of the opportunity to participate<sup>12</sup>.

### 4.3 Lessons from literature

This section, lessons from literature, draws heavily on a piece of research undertaken by Tony Dignan for DEL in 2003 titled, 'Essential Skills for Living Research'.

#### Box 4.3: Dignan 'Essential Skills for Living Research'

The overall objectives of this research were to provide an audit of existing research and to develop a programme of research to inform the implementation of the Essential Skills Strategy in NI. The specific aims of the research were to:

- Undertake an audit of available research on adult 'literacy' in Northern Ireland;
- Identify the research areas that are of most relevance to the implementation of the NI Adult Literacy Strategy;
- Identify the most important gaps in available research – **Dignan correctly highlighted the lack of estimates of 'literacy' performance since IALS 1996;**
- Specify options for meeting those gaps and make recommendations; and
- Consider relevant 'literacy' developments in other parts of the UK and ROI.

#### 'Risk ratio' approach

One of Dignan's suggestions to address the lack of information on recent 'literacy' trends was a '**risk ratio**' approach to extrapolate NI IALS 1996 results up to the latest period. The concept behind this, and another somewhat complex term used by Dignan, the 'concentration ratio', is actually relatively simple<sup>13</sup>.

**The approach suggested involved assuming that the highest level of educational attainment is the only variable affecting the 'risk' of being at IALS Level 1, 2, 3 and 4/5.** If 'risk ratios' at each level of educational attainment from IALS 1996 data are held constant (e.g. the % of persons with degree qualifications performing at Level 4/5 prose etc), then a time series for each IALS literacy scale can be generated using official data on the changing structure of highest qualifications of the 16-65 population (which is available from the LFS and APS).

<sup>12</sup> The reason for the UK not participating was that ALL was perceived to offer little over and above what was already known from IALS. The only real benefit of the ALL survey, identified by ONS, was that it would provide the first international estimates for numeracy. The version of ALL considered by ONS in 1999, which required countries to sign up to all components of the survey, was considered expensive given the potential benefits.

<sup>13</sup> The 'risk ratio' is the share of persons at a particular 'literacy' level as a percentage of all persons in the group (e.g. % males performing at Level 1, 2 etc prose literacy, sample=all males). The 'concentration ratio' is the share of persons at a particular 'literacy' level within a group as a percentage of all individuals at that level (e.g. 16-25, 26-35 etc % of Level 1 prose literacy performers; sample =all age bands)

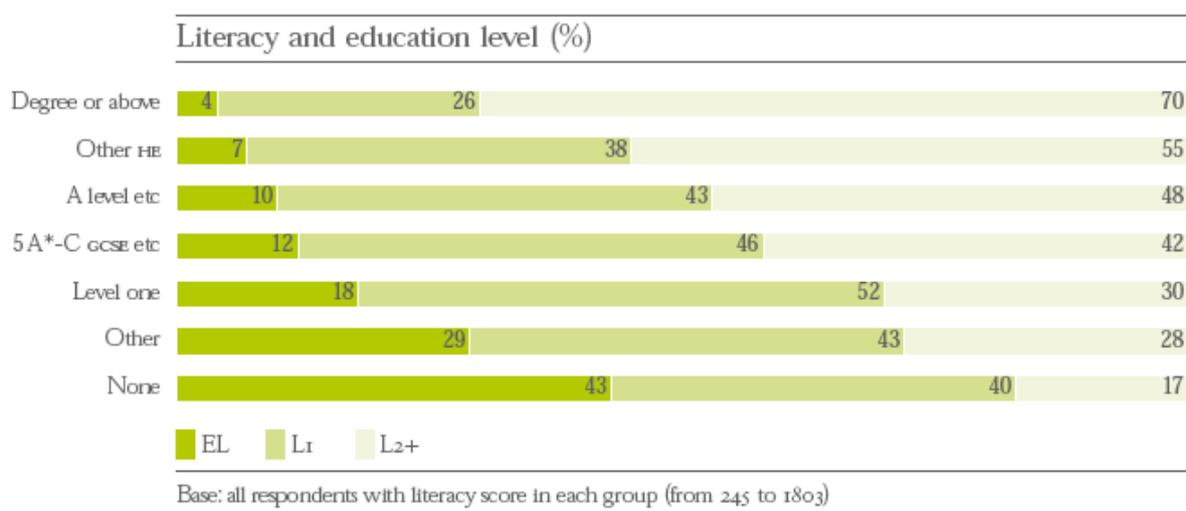
The **advantages** of such an approach are its simplicity, practicality (as the required data is available) and its transparency. Also it would avoid the need for an expensive survey. The **disadvantage**, as Dignan identified, is the potential for criticism of over-simplification and 'crudeness', and the possibility that 'risk ratios' have not remained stable since 1996. Also 'literacy' skills are not solely a function of educational attainment (or possibly even causally related). IALS Level 1 risk ratios in NI were also associated with age, which appears to exert an influence over and above the correlation between qualifications and age. While assuming a constant 'risk ratio' for each education attainment level by age band is one way to address this, Dignan concluded that sample sizes at this level of detail, from both IALS and the LFS/APS, would be too small to produce reliable results. We would also concur with this view. Interestingly, one of the respondents from ONS also proposed a 'literacy' model taking account of education attainment and other key characteristics but again this is unlikely to be practical due to data sample size issues.

### Use of secondary data approach

This alternative approach suggested by Dignan essentially involved calculating a set of 'risk ratios' from a more recent secondary data source (e.g. DfES Skills for Life Survey in 2002/03) and applying these (or adjusted values) to relevant, latest NI demographic data (e.g. 16-65 population by highest education attainment groups<sup>14</sup>).

Fig 4.1 presents an example of 'risk ratio' education attainment-literacy performance results for England from the Skills for Life Survey. Since Dignan's work and from what we have learnt in this research, other secondary data options could now include Scottish ALN data (when results are published) and Welsh Skills for Life Survey data.

**Fig 4.1: Influence of education attainment on literacy (England Skills for Life Survey, 2002/03)**



<sup>14</sup> Dignan suggested the following potential sources for NI data (to which these 'risk ratios' be applied) - 2001 Census of Population, the LFS and the Continuous Household Survey (CHS). **One additional source is the APS which officials in other countries consistently recommended when questioned in this research.**

While the following comparison may not be fully precise<sup>15</sup>, we have nonetheless attempted to compare 'risk ratios' for English IALS 1996 prose 'literacy'-education attainment performance with English 'literacy'-education attainment risk ratios from the Skills for Life Survey (taken directly from Fig 4.1). Assuming the comparisons are broadly reliable (albeit they will not be 100% precise), **there is a suggestion of an important change over time in 'risk-ratio' values (in other words a change in the relationship between education attainment and literacy standards)**. For example across all education attainment categories, the share of persons performing at higher IALS Levels 3-5 in 1996 was higher than share of persons performing at the roughly equivalent Basic Skills Standard (BSS) Level 2+ according to the Skills for Life Survey in 2002/03. The opposite is true at intermediary literacy levels (IALS Level 2 and BSS Level 1). For lower literacy levels the differences are less marked except for persons with no qualifications – in 1996 one-third of persons with no qualifications performed at IALS Level 1 compared to an estimated two-fifths at BSS Entry Levels 1-3. **It is beyond the scope of this research to validate the trend Table 4.2 is implying (there would need to be a much wider and thorough investigation, including looking at international countries which have taken part in IALS or its successor on more than one occasion). Nevertheless the headline suggestion is that the correlation between education attainment and literacy is potentially not stable and for the equivalent level of education attainment today, persons are less likely to perform at the highest 'literacy' standards.**

**Table 4.2: Proxy comparison of English education attainment-literacy 'risk ratios' (IALS 1996 versus Skills for Life Survey 2002/03)**

	IALS Level 1	BSS Entry Levels 1-3	IALS Level 2	BSS Level 1	IALS Levels 3-5	BSS Level 2+
	IALS (1996)	Skills for Life (2002/03)	IALS (1996)	Skills for Life (2002/03)	IALS (1996)	Skills for Life (2002/03)
Degree or above	4%	4%	15%	26%	82%	70%
Other higher education below degree level	3%	7%	16%	38%	80%	55%
A-Level, vocational level 3 or equivalent	10%	10%	28%	43%	62%	48%
5+ A*-C GCSE*	18%	12%	33%	46%	49%	42%
Other qualifications below level 2	23%	-	35%	-	41%	-
No qualifications	32%	43%	35%	40%	33%	17%

Source: IALS, Oxford Economics, DfES Skills for Life

\* for IALS equivalent to trade apprenticeships and GCSE/ O Level grade A\* - C, vocational level 2 or equivalent

Getting back to the secondary data approach, its **advantages** would again be avoiding the cost of running an expensive survey and the fact that, according to Dignan, the Skills for Life Survey was designed to focus on both literacy and numeracy and map 'literacy' levels to the national standards framework. An additional advantage which Dignan did not highlight is that the 'risk ratios' calculated would be more up-to-date than the IALS 1996 results.

<sup>15</sup> Due to the comparability of IALS levels to BSS levels and possible differences in education attainment levels. Also we have had to estimate IALS English education attainment data from IALS ISCED education attainment levels (see later for more explanation on this).

The **disadvantages** again are the potential for criticism of over-simplification and 'crudeness', plus use of English, Welsh or Scottish secondary data would not necessarily provide direct read across to NI, especially given differences in the timing and nature of 'literacy' intervention programmes, and differences in correlation between 'literacy' levels and socio-demographic attributes<sup>16</sup>. Application of, for example, English 'risk ratios' would implicitly assume that 'literacy' interventions, here in NI, have been as effective (or ineffective) as in England. Dignan also noted that many education practitioners in NI would not be satisfied by the use of English data as NI is seen as unique. Lastly the Skills for Life Survey was not based on the IALS framework so there would be major difficulties mapping literacy levels across to IALS categories and levels in any case.

### Survey approach

Dignan concluded in the 'Essential Skills for Living Research' that neither continuing to depend on the IALS 1996 results nor augmenting the existing information on literacy performance by deriving estimates from the DfES Skills for Life Survey would provide a fully satisfactory means of meeting current literacy level information requirements. We also concur with this view.

One of his recommendations was that a **new NI baseline 'literacy' survey would need to be undertaken**. Looking back now this seems entirely sensible given what England, Scotland and Wales have since done or are doing. Also having studied the English Skills for Life Survey, there is a vast wealth of evidence that would be invaluable for both policy and research purposes. DEL's Essential Skill Research Steering Group made the decision in 2003 not to take part in England's Skills for Life Survey, after consideration and on advice from NISRA, who raised a number of concerns over the measuring instrument with the Skills for Life survey. The National Research & Development Centre (NRDC) also presented a paper which was highly critical of the survey method, analysis and robustness of the findings. Other reasons that NI did not take part in the Skills for Life survey was the fact that IALS and Skills for Life literacy levels did not map directly to the frameworks used in Essential Skills education; and because the then Department for Education and Skills (DfES) survey was a stand alone survey and at the time not likely to be re-run.

One of the potential options considered was to run the ALL survey. Dignan correctly raised the problem with this of how low levels of literacy and numeracy should best be defined in the context of the Essential Skills Strategy. Running ALL would not have produced levels of 'literacy' performance consistent with the Essential Skills Strategy which is based on a structure similar to the Basic Skills Standards. However it could have produced a set of results comparable at least to IALS 1996 literacy performance that would allow direct estimation of trends in literacy performance. To address this problem of producing 'literacy' performance estimates aligned to the Basic Skills Standards (but creating the problem of results not being directly comparable to IALS), Dignan suggested extending the DfES Skills for Life Survey to NI (as was done in Wales) and ensuring a sample size that would be most cost-effective in meeting the Essential Skills information requirements. Of course the obvious downside of having to run a survey is its cost.

The Research Steering Group also decided not to run the ALL survey in NI, which other European countries undertook. It was recommended that the UK not take part in ALL at the time as it was perceived to offer little over and above what was already known from IALS. The ONS study took the view that the only major potential benefit of ALL participation was that it would provide the first

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<sup>16</sup> One of the respondents from ONS suggested looking at how the education attainment-'literacy' association worked across English regions from the Skills for Life Survey and indicated that if it did not vary greatly, then the assumption to apply English 'risk ratios' to NI (or at least adjusted for original NI-England IALS 1996 differentials) may be justifiable. To the best of our knowledge however, this detailed English regional data is not in the public domain in the Skills for Life report.

international estimates for numeracy. In the version of ALL considered by the ONS in 1999, countries were required to sign up to all or none of the components and therefore it was felt to be too expensive when set against the benefits offered.

#### **Box 4.4: Inherent trade-off when estimating literacy' performance and trends**

The commentary above highlights one of the critical trade-offs faced when estimating current 'literacy' performance and trends for which there is no obvious solution.

- Practitioners can either develop an up-to-date baseline of 'literacy' performance, like the Skills for Life Survey, which is based on existing skills frameworks such as the Basic Skills Standards, and reflect at the time the most appropriate methods and standards to measure literacy competency. However results will not be comparable to countries taking part in IALS / ALL / PIACC-type surveys and cannot be used to directly assess 'literacy' trends since IALS 1996;
- Or practitioners can re-run IALS / ALL / PIACC-type surveys that produce internationally comparable and time-series comparable results, but do not produce 'literacy' level results that align to existing frameworks such as BSS or possibly reflect at the time the most appropriate methods and standards to measure literacy competency (although we understand PIACC methods will adapt to the changing literacy environment).

#### **4.4 Recommended option**

As an interim 'stop gap', our recommendation for DEL is to model 'literacy' trends using the Dignan education attainment 'risk ratio' approach and LFS / APS data on the stock of working age qualifications (note Dignan did not actually attempt to apply this approach previously).

Given uncertainty over whether the education attainment-literacy association has been stable since 1996, we suggest producing altering literacy trend estimates by altering risk-ratio assumptions (i.e. sensitivity analysis).

Whilst our recommended option is not perfect (see the next chapter for a fuller discussion), we believe it is superior to the 'secondary data' option (utilising English Skills for Life survey results) given the numerous limitations of this approach as described above.

**Box 4.5: Views of our academic literacy experts and counterparts in GB**

It was agreed at the outset of this research that it would be useful to have on board academic literacy experts (as well as share the research with government counterparts in England, Scotland and Wales). We have been fortunate to be able to bring on board Professor John Field (Professor of Lifelong Learning and Co-Director of the Centre for Research in Lifelong Learning at the University of Stirling) and Dr Graham Gudgin (Research Associate, Centre For Business Research, University of Cambridge, who has also undertaken research for DEL on “What can literacy scores tell us about Northern Ireland’s productivity gap?”).

**Professor John Field** commented that the scoping paper prepared for this research was “very strong and comprehensive” and he broadly accepted the judgement of the existing range of survey tools. He also supported the recommendation to use the education attainment ‘risk-ratio’-LFS/APS approach to help model (and explain) ‘literacy’ trends, describing it as a “good enough option”. Other comments were provided which have been incorporated throughout the report where relevant.

**Dr Graham Gudgin** was also in agreement with the recommended option and described the scoping report as “very clear and thorough”. He commented that the “augmented ‘risk-ratio’ approach is a useful guide in the short-term and in advance of PIACC”. He also noted the implications that out-migration of school leavers (the ‘brain drain’) has on the overall stock of skills in the NI economy. In addition he made the important point of how long it will take to transform the overall working age skills stock (and thereby ‘literacy’ standards too) to the current structure of school leavers (i.e. where 2 in 5 school leavers now go on to higher education); and described how the ‘brain drain’ means lower skilled cohorts represent a higher proportion of the ‘stay behind’ education leaver group, thus keeping the low ‘literacy’ groups at a higher percentage. **This all is important to bear in mind in terms of expectations of the extent to which the overall NI working age ‘literacy’ performance has improved since 1996 – i.e. change is a slow process.**

One of the respondents from ONS commented that “using the LFS is a good plan if a special survey would be too expensive ... however the APS would be better”.

## 5 Estimated NI 'literacy' trends

### 5.1 Methodology overview

As set out at the end of the last chapter, **the option we have recommended to model NI 'literacy' trends, which is broadly supported by our academic experts and DEL counterparts in other jurisdictions, is the Dignan education attainment 'risk ratio' approach. This uses annual LFS/APS data on the stock of 16-65 population qualifications and NI IALS survey data on the association between education attainment and 'literacy' performance.**

We would also describe the approach as 'top down' (using aggregated data sources – IALS and LFS) as opposed to a more 'bottom up' approach utilising flows data on numbers of individual Essential Skills achievers etc in a stock and flows model.

#### Assumptions

For the **'central trend' estimate**, we assume **constant 'risk'-ratio' values from the IALS 1996 survey** for the share of persons aged 16-65<sup>17</sup> in NI, at each education attainment / qualification level performing at IALS levels 1-5, across the three literacy categories of prose, document and quantitative. These assumptions are presented in Table 5.1.

Note in section 5.4 – **'sensitivity analysis'** – we alter the 'risk-ratio' assumptions given the evidence presented earlier from the English analysis which suggested that the correlation between education attainment and literacy may not be stable (for the equivalent level of education attainment today, it suggested that persons are less likely to perform at the highest literacy standards).

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<sup>17</sup> NI 16-65 population data is sourced from NISRA mid-year single age band estimates. Latest mid-year estimates available are 2008 – the 2009 figure is extrapolated using Oxford Economics' working age population forecast from its UK regional model (a similar approach is taken for 2009 16-65 population data for England, Scotland and Wales when estimating literacy trends in other jurisdictions)

**Table 5.1: NI IALS 'literacy' score 'risk ratios' – association with education attainment (1996)**

	Prose	Document	Quantitative
Degree/higher qualification			
Level 1	4%	5%	4%
Level 2	12%	14%	10%
Level 3	41%	39%	36%
Level 4/5	44%	43%	50%
Other HE below degree level			
Level 1	7%	7%	7%
Level 2	27%	26%	25%
Level 3	46%	40%	36%
Level 4/5	21%	26%	33%
A Levels, vocational level 3 or equivalent			
Level 1	6%	6%	4%
Level 2	23%	28%	21%
Level 3	43%	54%	43%
Level 4/5	29%	13%	32%
GCSE grade A*-C, vocational level 2 or equivalent			
Level 1	10%	10%	11%
Level 2	25%	27%	23%
Level 3	42%	42%	41%
Level 4/5	23%	21%	25%
Other qualification below level 2			
Level 1	23%	26%	23%
Level 2	41%	39%	38%
Level 3	28%	27%	29%
Level 4/5	8%	9%	11%
No qualification			
Level 1	44%	47%	42%
Level 2	34%	30%	30%
Level 3	19%	19%	22%
Level 4/5	3%	4%	6%

Source: IALS

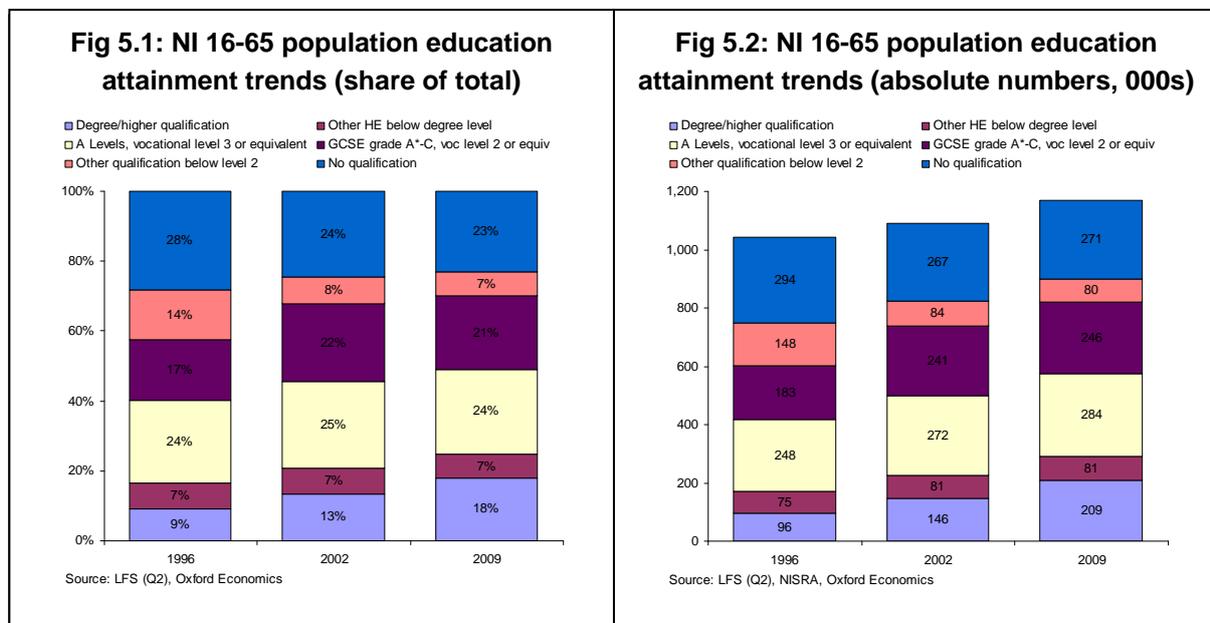
Note: % 16-65 population

The trend in the stock (share and absolute number) of education attainment / qualifications of the 16-65 NI population is presented in Figs 5.1 and 5.2 below. **For the 'central trend' estimate, this is the only direct driver of 'literacy' trends** as 'risk ratios' are held constant.

**The key overall developments during the last decade and a half are a rise in the share of NI persons aged 16-65 with degree or higher qualifications and a fall in the share of persons with no qualifications and other qualifications below level 2** (Fig 5.1). This is consistent with patterns elsewhere in the UK and also with school leaver patterns which for NI show a rise in the share of leavers going into higher education from 26% in 1995 to 40% in 2008. The pattern is also being driven by older, less qualified persons exiting this age cohort and being replaced by younger, better qualified persons.

Looking more closely at the charts reveals another important observation. This is the rise in absolute numbers of persons with no qualifications between 2002 and 2009 – albeit only a moderate rise of 4,000 but there had been a sharp fall of 27,000 between 1996 and 2002 (plus this is a unique trend for NI and did not, according to the data, occur in England, Scotland or Wales). **Note 2002 is chosen specifically as a reference year as this was the year the Essential Skills Programme was launched.** The influx of Eastern European migration may be a factor here in the above mentioned rise in persons aged 16-65 with no qualifications. However DETI also informed us that before 2007, the qualification level of females aged 60-64 in the LFS, many of whom would have had no qualifications, was not asked in the survey. Since 2007 their qualification level has now been asked and recorded. This, perhaps to a greater extent than migration, is likely to explain the absolute increase in the numbers of persons with no qualifications.

**What this means is that in overall number terms it may be difficult to observe the positive impact of the Essential Skills (ES) strategy if it is being offset or dominated by this change in treatment of skill levels of females aged 60-64 in the LFS and large in-migration flows of persons with no qualifications<sup>18</sup>.**



<sup>18</sup> Of course the positive impact of Essential Skills also depends on appropriate targeting and the programme having a large net additional effect, i.e. upskilling persons who otherwise would have remained at lower literacy levels

### Box 5.1: LFS and APS

As mentioned previously, one of the consistent recommendations made by DEL counterparts in other jurisdictions was, if possible, to use the Annual Population Survey as the source of data for trends in 16-65 population education attainment levels and shares, rather than the LFS. It is useful here to first provide some background information on these two sources from ONS before discussing this further after.

- **Labour Force Survey** - the Labour Force Survey (LFS) is a quarterly sample survey of households living at private addresses in the UK. Its purpose is to provide information on the UK labour market that can then be used to develop, manage, evaluate and report on labour market policies.
- **Annual Population Survey** - the Annual Population Survey (APS) combines results from the Labour Force Survey (LFS) and the English, Welsh and Scottish Labour Force Survey boosts. [During 2004 and 2005 the APS also comprised of an additional boost for England (APS(B)) which are funded by the Department for Work and Pensions, Department for Education and Skills, the National Assembly for Wales and the Scottish Executive] APS datasets are produced quarterly with each dataset containing 12 months of data. More robust local area labour market estimates are available from the APS than from the main LFS.

We also contacted DETI to discuss the status of the LFS and APS in NI. The response received was as follows: "The APS for NI is in essence an annual dataset containing the unique records from the 4 quarterly LFS surveys. In the rest of GB the APS contains the 4 quarterly LFS records, plus a boost to the sample which is paid for by the individual region. **There is no separate boost in NI** - however the NI LFS quarterly sample is already proportionately larger than the other UK regions".

Our interpretation then of this is that **for NI, using the LFS is more appropriate than it would be for other UK countries**. This is helpful because it has been easier for us to obtain LFS data in the required format - the education attainment classification in APS data for NI from the National Online Manpower Information System (NOMIS) is less compatible with IALS education attainment categories. **Therefore for clarity, we use LFS data for NI (but based on the 16-65 population) to estimate NI 'literacy' trends (and specifically Quarter 2 data – i.e. April to June)**. For consistency, we also use LFS data for the other countries when estimating literacy trends for England, Scotland and Wales. In fact the differences between the LFS data we use and APS data available are almost negligible for attainment levels at the high and low end which can be directly compared (Table 5.2).

**Table 5.2: UK country working age population education attainment – LFS versus APS (2008)**

	NI	Scotland	England	Wales
<b>2008</b>				
<b>LFS (Q2)</b>				
Degree/higher qualification/other HE below degree level	27%	33%	28%	26%
A Levels, vocational level 3 or equivalent	24%	27%	22%	21%
GCSE grade A*-C, voc level 2 or equiv	20%	18%	23%	26%
Other qualification below level 2	6%	9%	14%	11%
No qualifications	23%	13%	13%	16%
<b>APS</b>				
NVQ4+	26%	34%	29%	27%
NVQ3	15%	16%	16%	17%
Trade apprenticeships	7%	6%	4%	5%
NVQ2	16%	14%	16%	18%
NVQ1	10%	10%	14%	13%
Other qualifications	4%	7%	9%	7%
No qualifications	22%	13%	12%	14%
<b>Change 2005-2008</b>				
<b>LFS (Q2)</b>				
Degree/higher qualification/other HE below degree level	4%	2%	2%	2%
A Levels, vocational level 3 or equivalent	0%	-1%	-1%	0%
GCSE grade A*-C, voc level 2 or equiv	-2%	0%	-1%	0%
Other qualification below level 2	-1%	0%	0%	0%
No qualifications	-1%	-1%	-1%	-2%
<b>APS</b>				
NVQ4+	3%	3%	2%	2%
NVQ3	2%	0%	1%	2%
Trade apprenticeships	-2%	-1%	-1%	-1%
NVQ2	-1%	0%	0%	0%
NVQ1	-1%	-1%	0%	-1%
Other qualifications	1%	1%	0%	0%
No qualifications	-2%	-2%	-2%	-3%

Source: LFS, APS, Oxford Economics

## Strengths and weaknesses

Before presenting our 'central trend' estimate for NI 'literacy' trends, it is important to conclude this methodology overview section by summarising the strengths and weaknesses of the final methodology adopted.

It is also useful to recap / highlight the various influences on 'literacy' performance of the 16-65 population in NI and consider to what extent the adopted methodology incorporates these influences.

**Box 5.2: Key influences on 'literacy' performance of NI 16-65 population**

- **Demographic replacement** - older persons (with lower 'literacy' competency) exiting the 16-65 population and being replaced by younger persons with higher education attainment (IALS analysis from 1996 confirmed younger age groups also have higher 'literacy' performance as well as education attainment). However at the same time there is a general ageing of the population in NI, as is the case in the majority of industrialised economies.
- **Rising education attainment** – while younger age groups in 1996 had higher education attainment and 'literacy' performance than older age groups, the younger generation today has higher education attainment still than young persons in 1996 (though 'literacy' performance may not necessarily be higher). This is observed in school leaver qualifications and destinations data, numbers enrolling in higher and further education etc (although the absolute number of school leavers is falling with declining fertility, or at least had been up until recently).
- **Demographic shocks / migration** – the influx of Eastern European migrants has been an unprecedented demographic shock for NI. The implications for 'literacy' are complex due to difficulties precisely mapping foreign qualifications to national qualification frameworks and secondly, a lack of information on English language competency which clearly has implications for prose and document literacy. Domestic migration matters too – for example the scale of 'brain drain' and the success of DEL's 'CMON over' campaign to attract highly skilled persons to NI.
- **Literacy programmes and other interventions** – the impact of programmes such as Essential Skills, directly targeted at literacy and numeracy, and in reality any intervention / education service that raises an individual's attainment level, have an impact on 'literacy' standards across NI.
- **Technological / social factors** – as described earlier, the impact of increased personal computer and mobile phone use etc.

Whilst the above list correctly identifies some of the numerous influences and complex nature of 'literacy' drivers, **LFS time-series data for education attainment stock levels of the 16-65 population actually captures in one single source the impact of several of these influences** – demographic replacement, rising education attainment and demographic shocks. In fact by covering the entire 16-65 population it should also capture the impact of 'literacy' programmes and other interventions which raise the 16-65 population's qualification levels directly. This is because the LFS data in theory is arrived at via a stock and flows approach, i.e. it is based on education attainment levels in the previous year and incorporates inflows and outflows of skills in the year in question.

**The additional influences not captured by LFS trends (the latter two) are captured by assumptions on 'risk ratios'. Whilst it is very difficult to know how 'risk ratios' have changed in the absence of more recent IALS results since 1996, by undertaking 'sensitivity analysis' it means that our adopted approach does capture, in one way or another, all of the major drivers of 'literacy' trends.**

<b>Strengths of adopted 'risk ratio' approach</b>	<b>Weaknesses of adopted 'risk ratio' approach</b>
<ul style="list-style-type: none"> <li>• Captures all of the major drivers of literacy trends (Box 5.2 above), particularly when 'sensitivity' analysis is also undertaken</li> <li>• Method is simple to understand, practical (as the required LFS data is available) and transparent</li> <li>• Updateable – estimates can be updated regularly and the process requires little additional resource when new or revised LFS data is published</li> <li>• Consistent time series – produces annual figures for literacy performance across the 3 IALS categories and 5 levels (i.e. is not subject to problems of 'proxy' mapping to other skills frameworks)</li> <li>• Approach is supported by our academic literacy experts and DEL counterparts in other jurisdictions as an appropriate interim measure in advance of PIACC</li> <li>• Last but not least, its strengths are sufficient that it is better than a 'do nothing' option</li> </ul>	<ul style="list-style-type: none"> <li>• Over-simplified</li> <li>• Education attainment is associated with 'literacy' skill levels but has not, to the best of our knowledge, been proven to be causally related</li> <li>• 'Literacy' skills are not solely a function of educational attainment (age and social characteristics matter). However due to limited IALS and LFS sample sizes it is not recommended to develop a more complex model. 'Literacy' trends are also sensitive to / dependent on 'risk ratio' assumptions (for which we have limited knowledge of whether these have changed in NI – although 'sensitivity analysis' offers one solution to understanding the impact changing 'risk ratios' would have on 'literacy' performance)</li> </ul>

## 5.2 Estimated NI IALS 'literacy' trends – 'central trend' estimate

We present below our 'central trend' estimates for 'literacy' performance of the NI 16-65 population across the 3 'literacy' categories of prose, document and quantitative and 5 IALS levels. Recall the 'central trend' approach assumes constant 'risk ratios' from the IALS 1996 survey.

The key developments are largely self-explanatory from the charts and tables. These include:

- **Overall improvement in 'literacy' standards** – across all three 'literacy' categories, the estimated trends indicate a rise, between 1996 and 2009, in the proportion of persons aged 16-65 performing at IALS level 4/5 (+4%) and a fall in the proportion at IALS level 1 (-3%). There is also an estimated fall in the proportion at IALS level 2 (-2% to -3%) and a rise at IALS level 3 (+1 to +2%).
- **... but the pace of improvement is slow** – we have estimated that roughly 4 in 5 persons aged 16-65 in 1996 will still be in this cohort in 2009<sup>19</sup>. This means that unless this group is up-skilling and raising their 'literacy' standards, the impact of more literate young persons coming through to the cohort and less literate older persons existing will be limited. This echoes the point made by Dr Graham Gudgin at the end of the previous chapter.
- **Internationally still lagging behind the high and mid-performers** – given the above, it is perhaps not surprising that our estimates for NI 'literacy' standards in 2009 suggest that we still lag behind the mid and high-performers such as Canada and Sweden, even when comparing to their proportions at each IALS level 13 years ago in 1996 (Table 5.6). For example in 1996 36% of Swedish persons aged 16-65 performed at IALS level 4/5 in quantitative 'literacy' – for NI in 2009 we estimate this proportion is still only 23%. Despite this finding, it is important to reiterate that 'literacy levels' among the NI working age population have still improved since the 1996 IALS.
- **'Absolute' versus 'share' trends** – as the 16-65 population has been growing (from 1.04m in 1996 to an estimated 1.17m in 2009), a fall in the proportion at a particular IALS level does not automatically equate to a fall in absolute numbers at that same level. This holds true for IALS level 2 for which overall between 1996 and 2009, there has been an increase in numbers estimated to perform at this level. This is not necessarily a negative development as it may reflect the up-skilling of persons from IALS level 1. The improvement in 'literacy' standards (in 'share' terms) is relatively uniform across the three IALS 'literacy' categories – this is to be expected as they are each driven by the same set of assumptions - LFS education attainment trends. However there are some differences in absolute numbers – the number of persons performing at IALS level 4/5 quantitative literacy is estimated to have risen by 11,300 compared to 9,100 for document literacy.

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<sup>19</sup> A more complex analysis of this figure would factor in death rates and migration patterns by age band though the overall difference is likely to be small

**Recent backward step?** According to the estimates, there has been a rise, since 2002, in the absolute number of persons performing at IALS levels 1 and 2 across each of the prose, document and quantitative categories. (The share values did not quite rise but the rate of decline in the shares of persons performing at lower 'literacy' levels slowed considerably). However looking at the data more closely, this break in trend appears to have occurred in 2008 and 2009 – this however might simply be explained by the change in treatment of skill levels of females aged 60-64 in the LFS, more so than in-migration. Therefore we do not believe the estimated 'literacy' trends for 2008 and 2009 are any cause for concern, and a period of out-migration (assuming it is the less skilled migrants that leave and not high skilled / highly qualified indigenous persons) may help to reverse any recent detrimental 'literacy' trends. Also to clarify on the impact of the Essential Skills Programme, this means that it has still had a positive impact on 'literacy' standards.

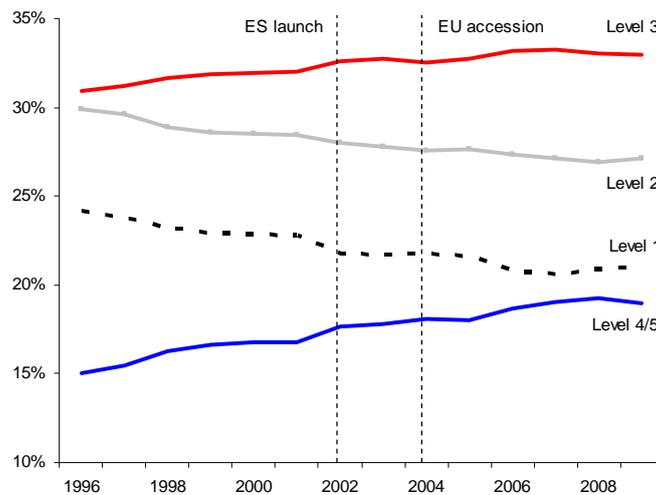
**Prose**

**Table 5.3: NI IALS 'literacy' trend estimates – prose**

	1996	2002	2009	Change pa	
				1996-2002	2002-2009
<b>000s</b>					
Level 1	252	237	245	-2.5	1.1
Level 2	312	305	317	-1.2	1.8
Level 3	322	356	386	5.5	4.3
Level 4/5	157	193	222	6.0	4.2
<b>% total 16-65 population</b>					
Level 1	24%	22%	21%	-0.4%	-0.1%
Level 2	30%	28%	27%	-0.3%	-0.1%
Level 3	31%	33%	33%	0.3%	0.0%
Level 4/5	15%	18%	19%	0.4%	0.2%

Source: IALS, LFS, Oxford Economics

**Fig 5.3: NI IALS 'literacy' trend estimates – prose**  
**NI IALS 16-65 literacy performance: Prose**



Source: IALS, LFS, Oxford Economics

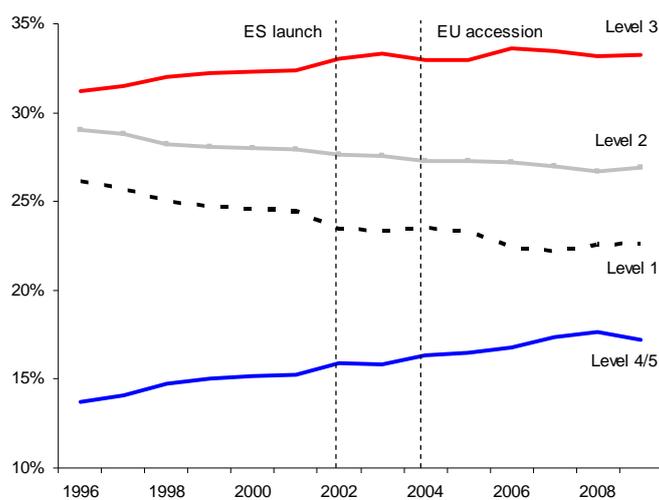
**Document**

**Table 5.4: NI IALS 'literacy' trend estimates – document**

	1996	2002	2009	Change pa	
				1996-2002	2002-2009
<b>000s</b>					
Level 1	272	256	265	-2.8	1.3
Level 2	303	302	315	-0.3	1.9
Level 3	325	360	389	5.8	4.1
Level 4/5	143	174	202	5.1	4.0
<b>% total 16-65 population</b>					
Level 1	26%	23%	23%	-0.4%	-0.1%
Level 2	29%	28%	27%	-0.2%	-0.1%
Level 3	31%	33%	33%	0.3%	0.0%
Level 4/5	14%	16%	17%	0.4%	0.2%

Source: IALS, LFS, Oxford Economics

**Fig 5.4: NI IALS 'literacy' trend estimates – document**  
**NI IALS 16-65 literacy performance: Document**



Source: IALS, LFS, Oxford Economics

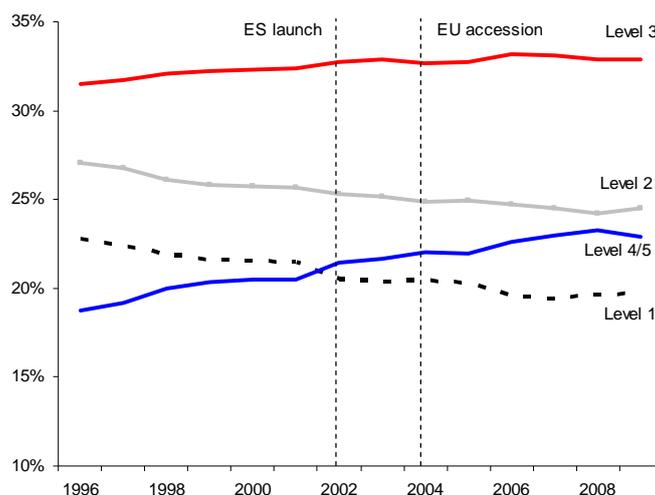
**Quantitative**

**Table 5.5: NI IALS 'literacy' trend estimates – quantitative**

	1996	2002	2009	Change pa	
				1996-2002	2002-2009
<b>000s</b>					
Level 1	238	223	231	-2.4	1.1
Level 2	282	276	286	-1.1	1.5
Level 3	328	357	385	4.8	4.0
Level 4/5	195	234	268	6.5	4.8
<b>% total 16-65 population</b>					
Level 1	23%	20%	20%	-0.4%	-0.1%
Level 2	27%	25%	24%	-0.3%	-0.1%
Level 3	31%	33%	33%	0.2%	0.0%
Level 4/5	19%	21%	23%	0.5%	0.2%

Source: IALS, LFS, Oxford Economics

**Fig 5.5: NI IALS 'literacy' trend estimates – quantitative**  
**NI IALS 16-65 literacy performance: Quantitative**



Source: IALS, LFS, Oxford Economics

## International comparison – how does NI rate now?

**Table 5.6: NI, Sweden and Canada IALS 'literacy' performance**

	NI (2009)	Sweden (1996)	Canada (1996)
<b>Prose</b>			
Level 1	21%	8%	17%
Level 2	27%	20%	25%
Level 3	33%	40%	35%
Level 4/5	19%	32%	23%
<b>Document</b>			
Level 1	23%	6%	18%
Level 2	27%	19%	25%
Level 3	33%	39%	32%
Level 4/5	17%	36%	25%
<b>Quantitative</b>			
Level 1	20%	7%	17%
Level 2	24%	19%	26%
Level 3	33%	39%	35%
Level 4/5	23%	36%	22%

Source: IALS, LFS, Oxford Economics

Note: % 16-65 population

### 5.3 Country comparison of IALS 'literacy' trends

In estimating NI IALS 'literacy' trends, DEL also asked us to explore the possibility of estimating trends in the three other UK countries. We have managed to do so, with the results presented below. First however we would like to highlight the following caveats which need to be borne in mind.

- Sample size issues** - according to NISRA, NI was a separate reporting unit in IALS 1996, i.e. separate to the rest of the UK. IALS specified that in order to be eligible to be a separate reporting unit, a minimum number of completed interviews would be needed. This is why NI's sample size (2,907) was actually considerably larger than for Scotland (704) and Wales (635) and larger even than England's (2,472) – the other sample sizes are based on the IALS survey database provided by Stats Canada. Note this implies that results for at least Scotland and Wales should perhaps not be reported at all, although this issue was not raised during our correspondences with Welsh and Scottish officials. We have since learnt that disproportionate sampling fractions were used in Scotland and Wales in order to be able to show separate national estimates. This is positive as it means that the Scottish and Welsh results and trend estimates are sufficiently robust to use and present.
- ISCED versus LFS education attainment categories** – data from Stats Canada on the association between IALS 'literacy' performance and education attainment was only available by ISCED education categories for England and Wales. This meant we had to convert English and Welsh ISCED data to categories comparable with LFS data and the categories published in the NI NISRA IALS 1996 survey report. We were able to do so using a hybrid of NI and Scottish IALS results (for these two jurisdictions we had data for both education attainment classifications) but this at best should only be considered an approximation. The table below presents the hybrid shares used to make this conversion.

**Table 5.7: NI-Scotland hybrid IALS-LFS conversion shares**

	ISCED 7	ISCED 6	ISCED 5	ISCED 3	ISCED 2	ISCED 1	ISCED 0
Degree/higher qualification	100%	81%	47%	0%	0%	0%	0%
Other HE below degree level	0%	19%	18%	0%	0%	0%	0%
A Levels, vocational level 3 or equivalent	0%	0%	35%	35%	0%	0%	0%
GCSE grade A*-C, vocational level 2 or equivalent	0%	0%	0%	39%	8%	0%	0%
Other qualification below level 2	0%	0%	0%	25%	21%	0%	0%
No qualification	0%	0%	0%	1%	71%	100%	100%

Source: IALS, Oxford Economics

**Table 5.8: NI, England, Scotland and Wales estimated IALS 'literacy' performance**

	NI			England			Scotland			Wales		
	1996 (IALS)	2009 (OE estimate)	pp change	1996 (IALS)	2009 (OE estimate)	pp change	1996 (IALS)	2009 (OE estimate)	pp change	1996 (IALS)	2009 (OE estimate)	pp change
<b>Prose</b>												
Level 1	24%	21%	-3.2	21%	18%	-2.4	22%	19%	-2.8	24%	20%	-3.9
Level 2	30%	27%	-2.8	30%	28%	-1.9	31%	29%	-1.9	34%	33%	-1.2
Level 3	31%	33%	2.1	31%	33%	1.3	31%	33%	1.9	33%	35%	2.5
Level 4/5	15%	19%	3.9	18%	21%	3.0	16%	19%	2.8	9%	12%	2.6
<b>Document</b>												
Level 1	26%	23%	-3.5	23%	21%	-2.6	21%	19%	-2.7	26%	22%	-3.7
Level 2	29%	27%	-2.1	26%	25%	-1.5	29%	27%	-2.5	31%	29%	-1.3
Level 3	31%	33%	2.0	30%	31%	1.0	30%	33%	2.8	30%	32%	2.0
Level 4/5	14%	17%	3.5	20%	23%	3.2	19%	21%	2.4	13%	16%	3.0
<b>Quantitative</b>												
Level 1	23%	20%	-3.0	23%	21%	-2.7	23%	20%	-2.9	26%	22%	-3.8
Level 2	27%	24%	-2.6	27%	25%	-1.6	30%	29%	-1.0	31%	29%	-1.7
Level 3	31%	33%	1.4	30%	30%	0.4	31%	32%	1.3	31%	33%	2.2
Level 4/5	19%	23%	4.2	20%	24%	3.9	17%	20%	2.6	12%	16%	3.3

Source: IALS, Oxford Economics

Note: % 16-65 population

The key message from Table 5.9 is that the estimates suggest that 'literacy' standards have improved faster in NI between 1996 and 2009 across each of the three IALS 'literacy' categories in terms of change in proportions performing at level 4/5. Although Wales is estimated to have reduced by more the proportion of persons aged 16-65 performing at IALS level 1 and increased by more the proportion of persons at IALS level 3.

**Table 5.9: NI, England, Scotland and Wales estimated change in IALS 'literacy' performance (1996-2009)**

	pp change (1996 IALS - 2009 OE estimate)			
	NI	England	Scotland	Wales
<b>Prose</b>				
Level 1	-3.2	-2.4	-2.8	-3.9
Level 2	-2.8	-1.9	-1.9	-1.2
Level 3	2.1	1.3	1.9	2.5
Level 4/5	3.9	3.0	2.8	2.6
<b>Document</b>				
Level 1	-3.5	-2.6	-2.7	-3.7
Level 2	-2.1	-1.5	-2.5	-1.3
Level 3	2.0	1.0	2.8	2.0
Level 4/5	3.5	3.2	2.4	3.0
<b>Quantitative</b>				
Level 1	-3.0	-2.7	-2.9	-3.8
Level 2	-2.6	-1.6	-1.0	-1.7
Level 3	1.4	0.4	1.3	2.2
Level 4/5	4.2	3.9	2.6	3.3

Source: IALS, Oxford Economics

Note: % 16-65 population

## 5.4 Sensitivity analysis

As said above, analysis of English IALS 1996 and Skills for Life Survey 2002/03 data, albeit not 100% comparable, suggested that the correlation between education attainment and literacy may not be stable, and more specifically that for the equivalent level of education attainment today, persons are less likely to perform at the highest 'literacy' standards. **This alone, in our view, is sufficient to justify undertaking 'sensitivity analyses' around the estimated 'central trend' NI 'literacy' estimates.**

We undertook two types of scenario analysis in addition to our 'central trend' case. These have been constructed by adjusting the 'risk-ratio' assumptions presented earlier in Table 5.1 (although any range of tests can be run). We use the scenario analysis to show how sensitive the model is to change and how a range of values can have very different impacts.

- **Downside scenario – weaker positive correlation between education attainment and literacy** – based roughly on the implied 'risk ratio' changes from Table 4.2 (the analysis for England), we gradually adjust NI IALS 1996 'risk ratio' values over time (see Table 5.10), thereby reducing the positive impact rising education attainment amongst the 16-65 population has on estimated 'literacy' performance. Note by doing this we are not saying we believe there is a weaker positive correlation between education attainment and 'literacy' today in NI (or that English implied 'literacy' developments should apply to NI). This would require, among other things, PIACC results to properly test the hypothesis. It is simply to serve the purpose of illustrating how sensitive our 'central trend' estimates of NI 'literacy' trends are to changes in the key 'risk ratio' assumptions.

**Table 5.10: Downside scenario annual change in NI risk-ratio assumptions (1996-2009)**

	Level 1	Level 2	Level 3	Level 4/5
Degree or higher qualification	0.0%	0.8%	0.0%	-0.8%
Other Higher Education below degree level	0.1%	0.8%	0.0%	-0.9%
A Levels, vocational level 3 or equivalent	0.0%	0.5%	0.0%	-0.5%
GCSE/ O Level grade A* - C, vocational level 2 or equivalent	-0.4%	0.9%	0.0%	-0.5%
Other qualification below level 2	0.0%	0.0%	0.0%	0.0%
No qualification	0.4%	0.2%	0.0%	-0.6%

Source: Oxford Economics, DfES Skills for Life

As Table 5.11 shows, **NI estimated 'literacy' trends are, as expected, highly sensitive to changes in the 'risk ratio' assumptions.** The implication is that if in NI the positive correlation between education attainment and literacy has weakened (in a similar way suggested by English analysis), then overall 'literacy' standards would have worsened despite the improving education attainment trend which we hold constant. This stylized worsening is evident from the fall in the proportion of persons performing at level 4/5 in the fourth column of Table 5.11, compared to where NI was in 1996 according to IALS and compared to our 'central trend' estimates in the third column. Interestingly the differences between the downside scenario and 'central trend' proportions at IALS level 1 are negligible.

**Off course it is important to emphasise that this is purely a stylized 'what if' trend, not necessarily what we think the actual trend is.** There is no hard evidence to suggest that the correlation between education attainment and 'literacy' has weakened per se in NI. Rather the assumptions are based on evidence from England which would need to be tested further and even then may not be wholly applicable to NI. **As said above, the main reason for including this scenario is to illustrate the sensitivity of the 'central trend' estimate to risk-ratio assumptions, and not to suggest we believe the downside scenario is more likely to have occurred.**

**Table 5.11: NI IALS 'literacy' performance – 'central trend' estimate and downside scenario**

	IALS (1996)	Central trend' (2009)	Downside scenario (2009)
<b>Prose</b>			
Level 1	24%	21%	21%
Level 2	30%	27%	34%
Level 3	31%	33%	33%
Level 4/5	15%	19%	12%
<b>Document</b>			
Level 1	26%	23%	23%
Level 2	29%	27%	34%
Level 3	31%	33%	33%
Level 4/5	14%	17%	10%
<b>Quantitative</b>			
Level 1	23%	20%	20%
Level 2	27%	24%	32%
Level 3	31%	33%	33%
Level 4/5	19%	23%	16%

Source: IALS, LFS, Oxford Economics

Note: % 16-65 population

- Upside scenario – achieving Swedish (top-performer) and Canadian (mid-performer) 'literacy' standards** – this more aspirational scenario considers the extent to which NI 'risk ratios' need to change from their IALS 1996 values in order for NI, by 2009 and given the same trends observed in 16-65 education attainment levels, to catch up with Swedish and Canadian literacy standards in 1996 (**at the time, Swedish literacy standards were amongst the highest in the world. Canada has also been included as perhaps a more realistic aspirational benchmark**). This could be useful for future target setting by DEL if programmes and literacy testing were aimed, and undertaken more frequently, at specific education attainment groups (e.g. school leavers at 16; A-Level leavers, especially those no longer continuing with courses with a high literacy and numeracy content etc).

As Tables 5.12 and 5.13 shows, **NI 'risk ratios' would need to improve significantly to catch up with both Swedish and Canadian literacy standards**. For example the proportion of persons aged 16-65 with degree / higher qualifications performing at Level 4/5 prose would need to rise from 44% to 69% to meet Swedish standards and from 44% to 52% to meet Canadian standards.

**Table 5.12: NI IALS 'literacy' score 'risk ratios' – IALS 1996 'central trend' assumption and upside scenario - Sweden (figures refer to the per cent of working age persons performing at IALS level 4/5)**

	IALS 1996 / 'central trend' assumption	Upside scenario (Sweden catch up)
<b>Prose</b>		
Degree/higher qualification	44%	69%
Other HE below degree level	21%	33%
A Levels, vocational level 3 or equivalent	29%	46%
GCSE grade A*-C, vocational level 2 or equivalent	23%	37%
Other qualification below level 2	8%	13%
No qualification	3%	5%
<b>Document</b>		
Degree/higher qualification	43%	86%
Other HE below degree level	26%	53%
A Levels, vocational level 3 or equivalent	13%	25%
GCSE grade A*-C, vocational level 2 or equivalent	21%	42%
Other qualification below level 2	9%	18%
No qualification	4%	8%
<b>Quantitative</b>		
Degree/higher qualification	50%	75%
Other HE below degree level	33%	49%
A Levels, vocational level 3 or equivalent	32%	48%
GCSE grade A*-C, vocational level 2 or equivalent	25%	37%
Other qualification below level 2	11%	16%
No qualification	6%	9%

Source: IALS, LFS, Oxford Economics

Note: % 16-65 population performing at IALS Level 4/5 by education attainment category

**Table 5.13: NI IALS 'literacy' score 'risk ratios' – IALS 1996 'central trend' assumption and upside scenario - Canada (figures refer to the per cent of working age persons performing at IALS level 4/5)**

	IALS 1996 / 'central trend' assumption	Upside scenario (Canada catch up)
<b>Prose</b>		
Degree/higher qualification	44%	52%
Other HE below degree level	21%	25%
A Levels, vocational level 3 or equivalent	29%	34%
GCSE grade A*-C, vocational level 2 or equivalent	23%	27%
Other qualification below level 2	8%	9%
No qualification	3%	4%
<b>Document</b>		
Degree/higher qualification	43%	61%
Other HE below degree level	26%	37%
A Levels, vocational level 3 or equivalent	13%	18%
GCSE grade A*-C, vocational level 2 or equivalent	21%	30%
Other qualification below level 2	9%	13%
No qualification	4%	6%
<b>Quantitative</b>		
Degree/higher qualification	50%	48%
Other HE below degree level	33%	32%
A Levels, vocational level 3 or equivalent	32%	31%
GCSE grade A*-C, vocational level 2 or equivalent	25%	24%
Other qualification below level 2	11%	11%
No qualification	6%	6%

Source: IALS, LFS, Oxford Economics

Note: % 16-65 population performing at IALS Level 4/5 by education attainment category

## 5.5 Validation checks

The final section of this chapter briefly attempts to perform validation checks of the 'central trend' estimate for improvements in NI's literacy performance. This is far from straightforward.

The approach we have taken has been to (1) compare the 'central trend' modelled estimates for the annual average absolute change in persons at each IALS level against annual average achievements on the Essential Skills Programme; and (2) again compare the modelled estimates for the annual average absolute change in persons at each IALS level but this time with outputs from a different 'age structure' model which solely estimates 'literacy' trends using a demographic shift-share approach [i.e. it effectively fixes the literacy performance of the 36-45 age cohort in 2006 to the literacy performance of the 26-35 age cohort from IALS survey results in 1996, as well adjusting for actual changes in absolute numbers of people at each band within the overall 16-65 cohort according to NISRA mid-year population estimates]. The analysis is presented in Table 5.14.

Taking first annual average achievements on the Essential Skills Programme, we use data from 2008 as this appears to represent a 'mature' period for the programme (achievements were increasing year-on-year previously). We also assume achievements in entry levels 1-3 equate to IALS level 1, level 1 to IALS level 2 and level 2 to IALS level 3 (this is based on Brooks' framework). Although numbers do not match exactly (we would not have expected this), they do **appear to be roughly in the 'right ballpark'** when comparing to pre-2002 (post-2002 is affected by migration, the change in treatment of female aged 60-64 skills and potentially volatilities in LFS data). For example, 2,600 persons achieving Essential Skills level 2 (IALS 1) in 2008 is similar to the annual average reduction in the number of persons performing at IALS level 1 for the prose category for the period 1996-2002<sup>20</sup>.

Now turning to the 'age structure' modelled estimates, the **magnitudes of change across IALS levels are in most cases broadly equivalent**. This suggests that our adopted approach (using LFS education attainment trends and assuming constant 'risk ratios') is similar to an approach which effectively 'progresses' persons through the 16-65 age cohort holding constant their 'literacy' performance structure from 1996.

**Overall therefore we conclude that the validation checks are supportive of the 'central trend' modelled estimates of 'literacy' trends in NI.** We would however encourage DEL to analyse results from Scotland's ALN Survey and the next English Skills for Life Survey as these should reveal crucial information on the stability of the correlation between education attainment and 'literacy'. This, as we have shown, is a crucial determinant of 'literacy' trends, when using education attainment levels of the working age population as a proxy driver.

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<sup>20</sup> Although strictly speaking we recognise we are not comparing like-for-like periods

**Table 5.14: Validation checks**

	Central trend estimated change in literacy performance		Essential Skills achievements	Age structure method change in literacy performance	
	Change pa		Average pa	Change pa	
	1996-2002	2002-2009	2008	1996-2002	2002-2009
<b>Prose</b>					
000s			<b>Literacy</b>		
Level 1	-2.5	1.1	2.6	-2.0	-0.8
Level 2	-1.2	1.8	2.6	0.6	1.6
Level 3	5.5	4.3	2.3	4.9	5.9
Level 4/5	6.0	4.2	-	4.4	4.6
% total 16-65 population					
Level 1	-0.4%	-0.1%	-	-0.4%	-0.3%
Level 2	-0.3%	-0.1%	-	-0.2%	-0.1%
Level 3	0.3%	0.0%	-	0.2%	0.2%
Level 4/5	0.4%	0.2%	-	0.3%	0.2%
<b>Document</b>					
000s			<b>Literacy</b>		
Level 1	-2.8	1.3	2.6	-2.1	-1.2
Level 2	-0.3	1.9	2.6	0.8	1.9
Level 3	5.8	4.1	2.3	5.3	6.5
Level 4/5	5.1	4.0	-	3.9	4.2
% total 16-65 population					
Level 1	-0.4%	-0.1%	-	-0.4%	-0.3%
Level 2	-0.2%	-0.1%	-	-0.1%	-0.1%
Level 3	0.3%	0.0%	-	0.3%	0.2%
Level 4/5	0.4%	0.2%	-	0.3%	0.2%
<b>Quantitative</b>					
000s			<b>Numeracy</b>		
Level 1	-2.4	1.1	2.6	0.1	0.8
Level 2	-1.1	1.5	2.4	1.4	2.6
Level 3	4.8	4.0	2.5	3.9	5.4
Level 4/5	6.5	4.8	-	2.5	2.4
% total 16-65 population					
Level 1	-0.4%	-0.1%	-	-0.2%	-0.1%
Level 2	-0.3%	-0.1%	-	-0.1%	0.0%
Level 3	0.2%	0.0%	-	0.1%	0.2%
Level 4/5	0.5%	0.2%	-	0.1%	0.0%

Source: Oxford Economics, DEL

## Annex A: Bibliography

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## Annex B: DEL training programmes

DEL's strategic role is to promote learning and skills, to prepare people for work and to support the economy. For readers less familiar with DEL's programmes, we felt it would be useful to provide background information on the training programmes, which according to DEL, are most relevant to improving literacy levels amongst the NI working age population.

These programmes are, in chronological order, Jobskills (which was replaced by Training for Success in 2007) and Essential Skills.

### Jobskills

Jobskills, introduced in 1995, was DEL's primary vocational training programme at the time. From 1999, it guaranteed all eligible 16 and 17 year olds and those with a disability aged under 22, the opportunity of a training place. For persons aged 16-24, any individual was eligible for Jobskills support if they had secured employment at point of entry. The programme consisted of three distinct but inter-related strands, each addressing the needs of a particular group of trainees. These were as follows:

- Access - open to disadvantaged young people with the aim of providing basic skills essential for both everyday life and the workplace. This led to an approved qualification up to and including NVQ Level 1.
- Traineeship – provided training at NVQ Level 2 (and resulted in achievement of Key Skill awards) and was open to unemployed young people aged 16 and 17 years or persons aged under 22 for those with a disability. Trainees followed a training framework approved for delivery under the programme and developed in conjunction with the relevant industry.
- Modern Apprenticeship Training – provided training at NVQ Level 3 and was open to young people aged 16 to 24 who were either entering employment for the first time or met specified criteria for existing employees. Apprentices followed a training framework approved for delivery under the programme and developed in conjunction with the relevant industry.

### Training for Success/ApprenticeshipsNI

In September 2007, the Department replaced the Jobskills programme with Training for Success for new starts; however, existing participants continue to progress within Jobskills. Level 2 Apprenticeships were introduced for the first time in Northern Ireland.

The following year (2008) the Department further revised the programme and restructured it into two separate provisions, ApprenticeshipsNI and Training for Success. All Age Apprenticeships [25+] were introduced for the first time along with provision for those working Reduced Contracted Hours.

The Pre Apprenticeships option which was available from 2007 was set aside from 23 June 2009 and Programme Led Apprenticeships were introduced from 7 September 2009.

In terms of current provision, the Department provides a guarantee of a training place to those in the 16 and 17 year old age group (and either under 22 or 24 for those who qualify under extended eligibility criteria) who have not secured employment. Provision is therefore designed to assist individuals with a wide range of academic ability.

ApprenticeshipsNI enables learners, who have attained the minimum school leaving age and are in full time paid employment, to gain an industry recognised apprenticeship qualification. Apprenticeship qualifications are offered at Level 2 and at Level 3, and comprise a technical certificate, a National Vocational Qualification (NVQ) and Essential Skills qualifications.

The Programme-Led Apprenticeships provision, referred to above, is regarded as a temporary measure to respond to the current economic downturn. These types of apprenticeship aim to provide young people aged 16 -17 years (or under age 22/24 for extended eligibility) with the opportunity to take part in a Level 2 Apprenticeship where the apprentice will work towards achieving an industry-approved Apprenticeship Framework.

The revised Training for Success programme provides training for Learners who have not yet found full time employment and are not participating in a Programme Led Apprenticeship. It is designed to enable learners to progress to higher level training, further education, or employment by providing training to address personal and social development needs, develop occupational skills, employability skills and, where necessary, Essential Skills. It is delivered through two components:-

- **Skills for Your Life** – to address the personal and development needs of young people who have disengaged from learning and/or have significant obstacles; and
- **Skills for Work** – to help young people gain skills and a vocationally related qualification at Level 1 to be able to gain employment, to progress to Programme Led Apprenticeships or ApprenticeshipsNI provision, or to further education

## Essential Skills

As explained in the main report, DEL launched the Essential Skills Programme in 2002 to support NI's Essential Skills strategy to improve adult literacy and numeracy skills, and from August 2009, ICT skills.

The programme aims to provide people with the basic skills needed for everyday life with its courses designed for individuals who find it difficult to read, write or work with numbers.

It offers a full suite of Essential Skills qualifications covering Entry Level 1, 2 and 3 and Level 1 and Level 2, and is accredited by various awarding bodies including City & Guilds and CCEA.

The Essential Skills qualifications are a key part of all post-16 college, community and work-based learning provision in NI, including apprenticeships and work preparation courses. Courses can either be taken with the aim of improving the learner's English / Mathematics / ICT, or to gain a recognised qualification in either of these subjects.

If the aim is to achieve a qualification, the Essential Skills qualification is equivalent to the following:

- Level 1 qualification in Communication (or Application of Number for numeracy or ICT) is comparable in standard with GCSE English or Maths at grades D, E, F & G
- Level 2 qualification in Communication (or Application of Number for numeracy or ICT) is comparable in standard with GCSE English or Maths at grades A\*, A, B & C

## Annex C: PIACC background

The PIAAC survey follows on from the previous OECD studies - International Adult Literacy Survey (IALS) conducted in 1994, 1996 and 1998 (the UK, including NI, participated in 1996); and the Adult Literacy and Life Skills Survey in 2003 (ALL- the UK did not participate). PIAAC is being implemented in 27 countries and will comprise core components of:

- Direct testing for functional literacy skills
- Direct testing for numeracy skills
- A background questionnaire on individual characteristics and other contextual information
- Questions on the skill requirements of respondents' current/last job.

Other areas newly developed for PIAAC and being collected by 23 countries are:

- Literacy component skills (i.e. which aspects of literacy are problematic – but this is unlikely to be measurable in an internationally comparable way)
- “Problem-solving in a technology rich environment”, PSTRE (i.e. using ICT literacy skills such as using a web browser, email or spreadsheets to solve everyday problems).

PIAAC fieldwork will be conducted in 2011-12 with international results being reported in 2013.

Countries will have to manage the conduct of the OECD-prescribed survey in their own countries (thus incurring national costs for a UK survey of at least 5,000 adults minimum), as well as contributing to the international costs of design, testing, management, analysis and reporting.

Within the UK, the four countries have an option to boost their respective samples to up to 5,000 per country to produce internationally comparable results in their own right.

The main advantage of the UK taking part in the OECD PIAAC study is the ability to make international comparisons. The assessments and tools will all be designed to maximise their cross-cultural, cross-national and cross-language validity. OECD also cites the following advantages to taking part in the survey:

- In addition to providing internationally comparable data on literacy, numeracy, and problem solving using ICT skills, PIAAC will collect data on the use of key work skills in jobs and allow assessment of differential skill utilisation between countries;
- Data are likely to be available from a wider range of countries than in previous surveys;
- The data will facilitate a better understanding of the labour market returns to education and identify the role that cognitive skills play in improving the labour market prospects of at-risk populations; and
- By combining a direct measure of key cognitive skills with measures of formal educational attainment, PIAAC will offer a more complete picture of the stock of human capital than has yet been available in most OECD countries.