SUPPORT DOCUMENT

Differing skill requirements across countries and over time: support document

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This document was produced by the authors based on their research for the report *Differing skill requirements across countries and over time*, and is an added resource for further information. The report is available on NCVER's website: <http://www.ncver.edu.au>.

This document should be attributed as Ryan, C & Sinning, M 2011, *Differing skill requirements across countries and over time: support document*, NCVER.

This work has been produced by NCVER under the National Vocational Education and Training Research and Evaluation (NVETRE) Program, which is coordinated and managed by NCVER on behalf of the Australian Government and state and territory governments. Funding is provided through the Department of Education, Employment and Workplace Relations.

The NVETRE program is based upon priorities approved by ministers with responsibility for vocational education and training (VET). This research aims to improve policy and practice in the VET sector. For further information about the program go to the NCVER website <http://www.ncver.edu.au>. The author/project team was funded to undertake this research via a grant under the NVETRE program. These grants are awarded to organisations through a competitive process, in which NCVER does not participate.

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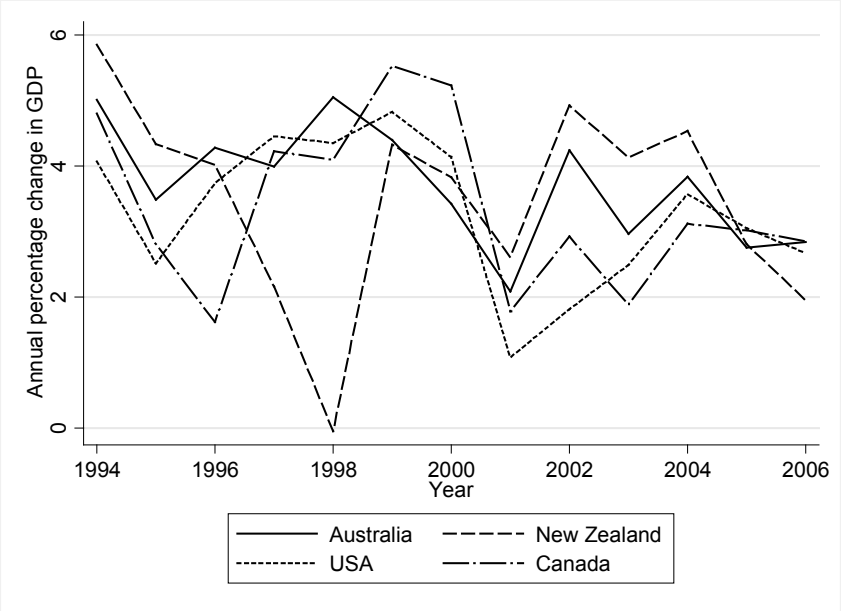
Figure 1 Annual percentage change in GDP by country, 1994–2006



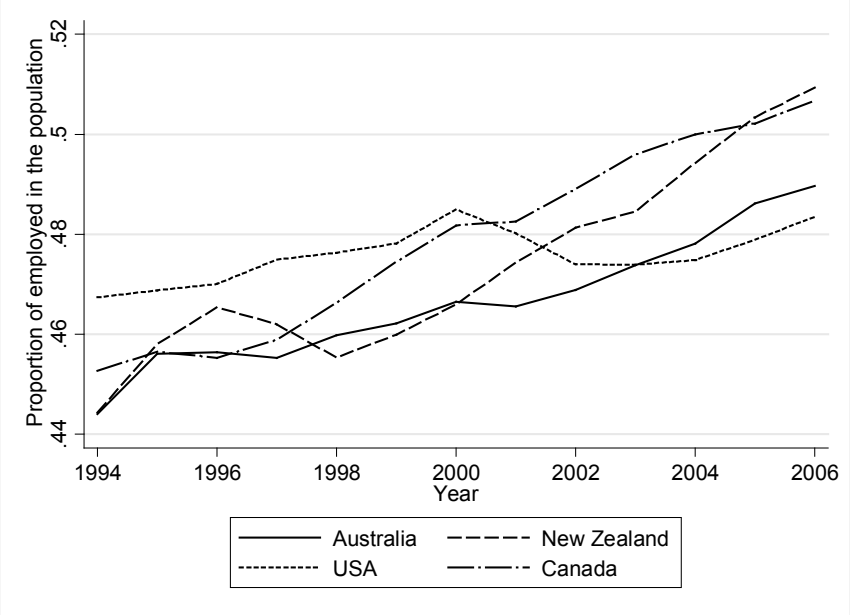
Source: IMF World Economic Outlook Database, October 2009.

Figure 1 depicts the annual percentage change in GDP by country. We focus on the period 1994-2006, which is the survey period of our analysis.

The changes in GDP growth suggest that all countries followed the same business cycle over the period 1994-2006. Specifically, GDP growth declined in all countries until 1995/1996. With the exemption of New Zealand, growth levels remained relatively high (between 3% and 6%) until 2000. In contrast, economic growth in New Zealand slowed substantially in 1997 and 1998 due to the Asian financial crisis. However, New Zealand's economy recovered in 1999. All countries were in recession in 2001 and experienced higher growth rates afterwards.

The proportions of employed persons in the population are presented in Figure 2. We observe an increase in employment rates in all countries, though with some heterogeneity regarding the initial level and the size of the change. Specifically, increases in the proportion of employed were rather moderate in the US, while strong increases were observed in New Zealand and Canada. The proportion also increased considerably (from 46% in 1994 to 49% in 2006) in Australia.

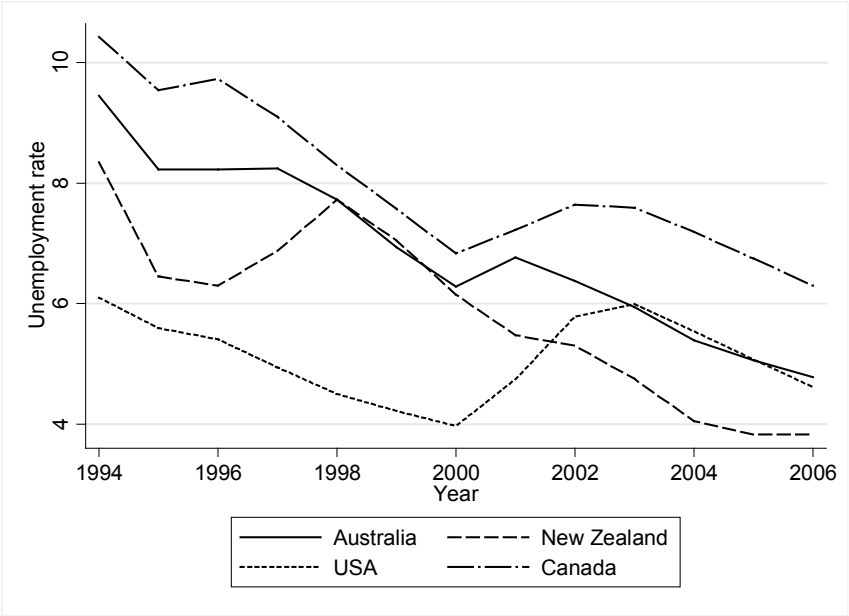
Figure 2 Proportion of employed in the population by country, 1994–2006



Source: IMF World Economic Outlook Database, October 2009.

The unemployment rates presented in Figure 3 reflect variations along the business cycle and provide evidence for a decline in unemployment in all countries over the period 1994-2006. Specifically, the unemployment rate in Australia declined from 8% in 1996 to 5% in 2006. The strong increase in the unemployment rate in New Zealand from 6.3% in 1996 to 7.7% in 1998 is in line with the strong decline in GDP growth over this period. With the exception of New Zealand, all unemployment rates rise after 2000, reflecting the economic downturn in 2001 (see figure 1).

Figure 3 Unemployment rate by country, 1994–2006



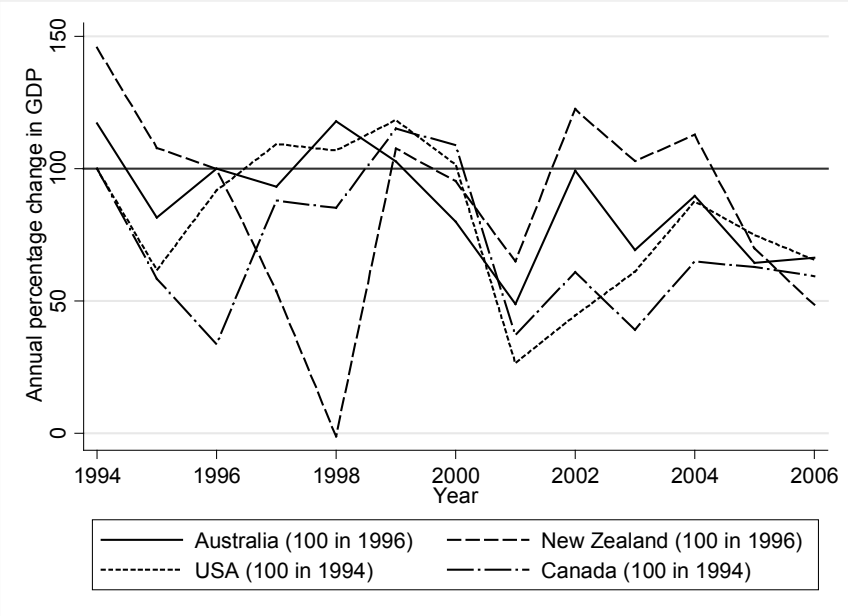
Source: IMF World Economic Outlook Database, October 2009.

The strongest increase may be observed for the US, where the unemployment rate soared from 4% in 2000 to 6% in 2003. Overall, these numbers show that macroeconomic conditions seem to be heading

in the same direction, although with substantial cross-country variation regarding the size of initial levels and changes.

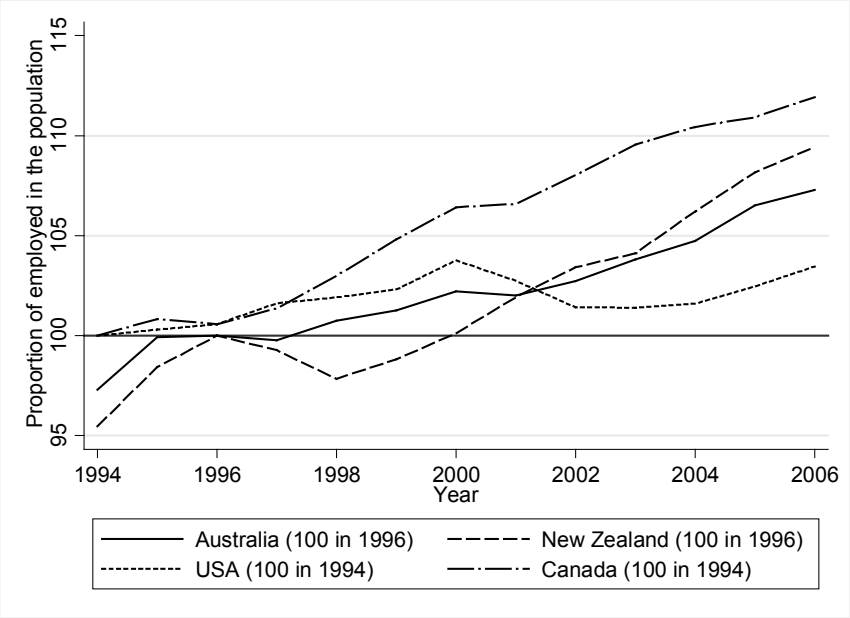
In our empirical, we will use cross-sectional data for Canada and the US that were surveyed in 1994 and 2003, while our data for Australia and New Zealand were surveyed in 1996 and 2006. To ensure that differences in macroeconomic conditions between these time periods do not affect our interpretation, we need to try to make these macroeconomic factors more comparable. Specifically, figures 4—6 include the transformed macroeconomic factors of figures 1—3, where we normalized the 1994 levels for Canada and the US and the 1996 levels for Australia and New Zealand to 100. On balance, figures 4—6 suggest that changes in macroeconomic conditions between countries were comparable. For example, GDP growth was around 3 percentage points lower in Canada and the US in 2003 than it had been in 1994; and about 2 percentage points lower in Australian and New Zealand between survey years. Further, unemployment rates were lower in all countries in the second survey year than they were in the first.

Figure 4 Normalized annual percentage change in GDP by country, 1994–2006



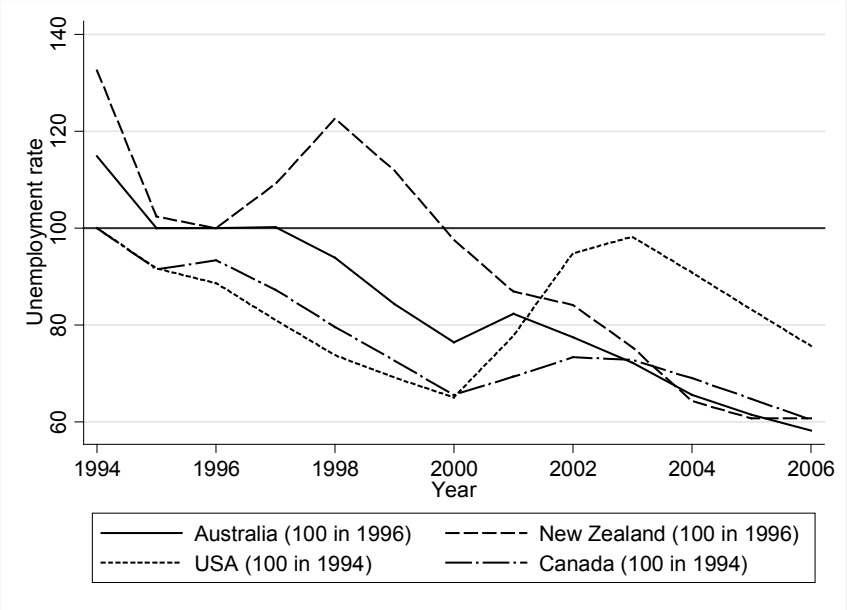
Source: IMF World Economic Outlook Database, October 2009.

Figure 5 Normalized proportion of employed in the population by country, 1994–2006



Source: IMF World Economic Outlook Database, October 2009.

Figure 6 Normalized unemployment rate by country, 1994–2006



Source: IMF World Economic Outlook Database, October 2009.

Appendix 2: Definition of variables

The following table provides a description of the variables that were used in the empirical analysis of the report.

Table 1 Description of variables

Variable	
Person ID	Person ID
Country	Country
Year	Year indicator
Weight	Person weight
Female	1 if female
Age	Five year age ranges
Hours	Weekly hours worked
Full-time employed	Indicator variable for full-time employment
Employer size	Employer size; number of persons employed at the respondent's workplace
Document literacy 1-5	Document literacy, level 1-5
Prose literacy 1-5	Prose literacy, level 1-5
Numeracy 1-5	Numeracy levels 1-5
Document literacy 1-5 (0-500)	Document literacy, continuous measure 1-5 (0-500)
Prose literacy 1-5 (0-500)	Prose literacy, continuous measure 1-5 (0-500)
Numeracy 1-5 (0-500)	Numeracy, continuous measure 1-5 (0-500)
Educational attainment	See description in Tables 7-9.
Occupation	See description in Tables 7-9.
Literacy use at work (0-500)	Literacy use at work, generated scale based on the following variables indicating whether the respective tasks were performed at least once a week: (i) How often reports or articles were written in the main job, (ii) How often letters or memos were written in main job, (iii) How often manuals or reference books were read or used in the main job, (iv) How often reports, articles, magazines or journals were read or used in main job, (v) How often letters or memos were read or used in main job. The resulting scale takes on values in the range 0-500. See Table 4 for a description of the underlying variables.
Numeracy use at work (0-500)	Numeracy use at work, generated scale based on the following variables indicating whether the respective tasks were performed at least once a week: (i) How often arithmetic was used in main job to work out prices, costs or budgets, (ii) How often arithmetic was used in main job to measure or estimate the size or weight of objects, (iii) How often forms such as bills, invoices or budgets were filled out in main job (iv) How often bills, invoices, spreadsheets or budget tables were read or used in main job, (v) How often diagrams or plans were read or used in main job. The resulting scale takes on values in the range 0-500. See Table 5 for a description of the underlying variables.
Skills (0-500)	Self-assessed skills, generated scale based on the following variables indicating whether the respondent rated the own skills as very good/excellent for the needs of the main job: (i) Self-perception of English reading skills, (ii) Self-perception of English writing skills. The resulting scale takes on values in the range 0-500. See Table 6 for a description of the underlying variables.

Appendix 3: Descriptive statistics

Table 2 Descriptive statistics, 1994–1996

Variable	Mean	Standard Deviation	Minimum	Maximum
Job task measures				
Literacy use	273.5	178.6	0	500
Numeracy use	233.6	160.6	0	500
Individual literacy measures				
Document literacy 1	285.2	56.3	18.3	498.2
Document literacy 2	285.5	56.5	10.0	500
Document literacy 3	285.4	56.4	0	477.7
Document literacy 4	285.5	56.9	0	486.7
Document literacy 5	285.5	56.2	0	500
Prose literacy 1	286.5	54.5	0	454.3
Prose literacy 2	286.8	54.2	0.082	475.4
Prose literacy 3	286.8	54.5	1.94	457.2
Prose literacy 4	286.8	54.6	0.765	479.0
Prose literacy 5	287.2	54.3	7.77	470.4
Self-assessed skills				
Self-assessed skills	264.3	225.3	0	500
Gender				
Male	0.503	0.500	0	1
Female	0.496	0.500	0	1
Age				
Age 15 - 24 years	0.192	0.394	0	1
Age 25 - 34 years	0.260	0.438	0	1
Age 35 - 44 years	0.268	0.443	0	1
Age 45 - 54 years	0.184	0.388	0	1
Age 55 - 64 years	0.093	0.291	0	1
Hours				
1-15	.116	.320	0	1
16-24	.083	.276	0	1
25-34	.086	.281	0	1
35-39	.155	.362	0	1
40	.259	.438	0	1
41-48	.101	.301	0	1
49+	.196	.397	0	1
Full-time employed	.713	.452	0	1

Note: Table continued on next page.

Table 2 continued **Descriptive statistics, 1994–1996**

Variable	Mean	Standard Deviation	Minimum	Maximum
Employer size				
Less than 20	0.357	0.479	0	1
20-99	0.141	0.348	0	1
100-499	0.117	0.322	0	1
500+	0.382	0.486	0	1
Educational attainment				
Year 9 or below	0.031	0.173	0	1
Year 10-11	0.268	0.443	0	1
Year 12	0.258	0.437	0	1
Certificate, Advanced Diploma/Diploma	0.247	0.431	0	1
Bachelor Degree, Postgraduate Degree	0.194	0.396	0	1
Occupation				
Managers and Administrators	0.003	0.059	0	1
Professionals	0.108	0.311	0	1
Para-Professionals	0.146	0.353	0	1
Clerks	0.075	0.264	0	1
Salespersons and Personal Service Workers	0.163	0.370	0	1
Craft and related Trades Workers	0.179	0.384	0	1
Plant and Machinery Operators and Drivers	0.112	0.315	0	1
Other	0.088	0.284	0	1
Not applicable	0.121	0.326	0	1

Note: This table includes descriptive statistics (unweighted numbers) of the sample that was used in the empirical analysis of the report. Number of observations: 13440.

Source: International Adult Literacy Survey (IALS), ABS, Survey of Aspects of Literacy, Australia, Basic Confidentialised Unit Record File, 1996, 4228.0.

Table 3 Descriptive statistics, 2003–2006

Variable	Mean	Standard Deviation	Minimum	Maximum
Job task measures				
Literacy use	275.6	181.5	0	500
Numeracy use	203.6	155.5	0	500
Individual literacy measures				
Document literacy 1	280.7	52.3	29.4	454.0
Document literacy 2	280.9	52.1	69.1	478.9
Document literacy 3	280.9	52.3	33.8	489.4
Document literacy 4	280.6	52.4	37.9	459.9
Document literacy 5	280.7	52.1	53.5	461.2
Prose literacy 1	280.0	50.5	31.2	454.9
Prose literacy 2	280.1	50.4	59.0	444.1
Prose literacy 3	280.3	50.4	30.0	466.8
Prose literacy 4	280.5	50.7	40.0	450.4
Prose literacy 5	280.4	50.4	38.4	470.4
Numeracy 1	272.4	54.8	17.8	457.1
Numeracy 2	272.3	54.2	54.9	458.5
Numeracy 3	272.4	54.8	44.8	483.9
Numeracy 4	272.6	54.6	38.8	452.8
Numeracy 5	272.5	54.7	32.7	472.2
Self-assessed skills				
Self-assessed skills	334.6	224.8	0	500
Gender				
Male	0.488	0.499	0	1
Female	0.511	0.499	0	1
Age				
Age 15 - 24 years	0.169	0.375	0	1
Age 25 - 34 years	0.201	0.401	0	1
Age 35 - 44 years	0.263	0.440	0	1
Age 45 - 54 years	0.235	0.424	0	1
Age 55 - 64 years	0.129	0.336	0	1
Hours				
1-15	0.090	0.286	0	1
16-24	0.078	0.269	0	1
25-34	0.103	0.304	0	1
35-39	0.164	0.371	0	1
40	0.269	0.443	0	1
41-48	0.108	0.310	0	1
49+	0.184	0.387	0	1
Full-time employed	0.727	0.445	0	1

Note: Table continued on next page.

Table 3 continued **Descriptive statistics, 2003–2006**

Variable	Mean	Standard Deviation	Minimum	Maximum
Employer size				
Less than 20	0.445	0.497	0	1
20-99	0.254	0.435	0	1
100-499	0.187	0.390	0	1
500+	0.112	0.316	0	1
Educational attainment				
Year 9 or below	0.021	0.144	0	1
Year 10-11	0.201	0.401	0	1
Year 12	0.324	0.468	0	1
Certificate, Advanced Diploma/Diploma	0.138	0.345	0	1
Bachelor Degree, Postgraduate Degree	0.314	0.464	0	1
Occupation				
Managers and Administrators	0.002	0.054	0	1
Professionals	0.116	0.320	0	1
Para-Professionals	0.161	0.368	0	1
Clerks	0.133	0.340	0	1
Salespersons and Personal Service Workers	0.136	0.342	0	1
Craft and related Trades Workers	0.164	0.370	0	1
Plant and Machinery Operators and Drivers	0.097	0.296	0	1
Other	0.080	0.271	0	1
Not applicable	0.108	0.310	0	1

Note: This table includes descriptive statistics (unweighted numbers) of the sample that was used in the empirical analysis of the report. Number of observations: 27523.

Source: International Adult Literacy Survey (IALS), Adult Literacy and Life Skills Survey, Australia, Basic Confidentialised Unit Record File, 2006, 4228.0; Adult Literacy and Life Skills Survey, New Zealand, 2006.

Appendix 4: Construction of scales

The following tables include descriptive statistics of the variables that were used to construct the scales of literacy use, numeracy use and self-assessed skills. All variables are indicator variables that take on the value one if a respondent performs a certain task (such as writing a report or an article, etc.) at least once a week and zero if the task is performed less than once a week, irregular or never. These variables were used to construct the scales using a partial-credit model for ordinal items (see Rabe-Hesketh, Skrondal & Pickles 2004; Zheng & Rabe-Hesketh 2007). The parameters of the partial-credit model are used to obtain (so-called) expected a posteriori scores for each individual that are rescaled to take on values between 0 and 500. Ryan and Sinning (2009) provide a more detailed description for the Australian context.

Table 4 Description of the underlying variables of the literacy use scale

	Literacy use			
	Australia	New Zealand	United States	Canada
1996				
How often letters or memos were	0.714	0.709	0.697	0.677
read or used in main job	(0.452)	(0.454)	(0.460)	(0.468)
How often reports, articles,	0.569	0.629	0.576	0.555
magazines or journals were read or used in main job	(0.495)	(0.483)	0.494)	(0.497)
How often manuals or reference	0.568	0.603	0.588	0.530
books were read or used in the main job	(0.495)	(0.489)	(0.492)	(0.499)
How often letters or memos were	0.478	0.561	0.563	0.534
written in the main job	(0.500)	(0.496)	(0.496)	(0.499)
How often reports or articles were	0.293	0.390	0.428	0.383
written in the main job	(0.455)	(0.488)	(0.495)	(0.486)

Note: Continued on next page.

Table 4 continued **Description of the underlying variables of the literacy use scale**

	Literacy use			
	Australia	New Zealand	United States	Canada
2006				
How often letters or memos were	0.754	0.730	0.738	0.686
read or used in main job	(0.431)	(0.444)	(0.440)	(0.464)
How often reports, articles,	0.613	0.617	0.567	0.558
magazines or journals were read or used in main job	(0.487)	(0.486)	(0.496)	(0.497)
How often manuals or reference	0.574	0.565	0.543	0.517
books were read or used in the main job	(0.495)	(0.496)	(0.498)	(0.500)
How often letters or memos were	0.638	0.613	0.623	0.573
written in the main job	(0.481)	(0.487)	(0.485)	(0.495)
How often reports or articles were	0.403	0.398	0.409	0.372
written in the main job	(0.490)	(0.490)	(0.492)	(0.483)

Note: Unweighted numbers.

Source: International Adult Literacy Survey (IALS); ABS, Survey of Aspects of Literacy, Australia, Basic Confidentialised Unit Record File, 1996, 4228.0; ABS, Adult Literacy and Life Skills Survey, Australia, Basic Confidentialised Unit Record File, 2006, 4228.0; Adult Literacy and Life Skills Survey, New Zealand, 2006.

Table 5 Description of the underlying variables of the numeracy use scale

	Numeracy use			
	Australia	New Zealand	United States	Canada
1996				
How often diagrams or plans were	0.387	0.638	0.359	0.322
read or used in main job	(0.487)	(0.481)	(0.480)	(0.467)
How often bills, invoices,	0.484	0.509	0.455	0.461
spreadsheets or budget tables were read or used in main job	(0.500)	(0.500)	(0.498)	(0.499)
How often forms such as bills,	0.374	0.506	0.494	0.491
invoices or budgets were filled out in main job	(0.484)	(0.500)	(0.500)	(0.500)
How often arithmetic was used in	0.383	0.489	0.468	0.498
main job to measure or estimate the size or weight of objects	(0.486)	(0.500)	(0.499)	(0.500)
How often arithmetic was used in	0.450	0.518	0.512	0.512
main job to work out prices, costs or budgets	(0.498)	(0.500)	(0.500)	(0.500)
2006				
How often diagrams or plans were	0.439	0.391	0.335	0.324
read or used in main job	(0.496)	(0.488)	(0.472)	(0.468)
How often bills, invoices,	0.505	0.483	0.423	0.455
spreadsheets or budget tables were read or used in main job	(0.500)	(0.500)	(0.494)	(0.498)
How often forms such as bills,	0.422	0.392	0.344	0.371
invoices or budgets were filled out in main job	(0.494)	(0.488)	(0.475)	(0.483)
How often arithmetic was used in	0.407	0.421	0.427	0.393
main job to measure or estimate the size or weight of objects	(0.491)	(0.494)	(0.495)	(0.488)
How often arithmetic was used in	0.437	0.421	0.416	0.400
main job to work out prices, costs or budgets	(0.496)	(0.494)	(0.493)	(0.490)

Note: Unweighted numbers.

Source: International Adult Literacy Survey (IALS); ABS, Survey of Aspects of Literacy, Australia, Basic Confidentialised Unit Record File, 1996, 4228.0; ABS, Adult Literacy and Life Skills Survey, Australia, Basic Confidentialised Unit Record File, 2006, 4228.0; Adult Literacy and Life Skills Survey, New Zealand, 2006.

Table 6 Description of the underlying variables of the scale of self-assessed skills

	Self-assessed skills			
	Australia	New Zealand	United States	Canada
1996				
Very positive self-perception of	0.582	0.607	0.560	0.580
English reading skills	(0.493)	(0.489)	(0.496)	(0.494)
Very positive self-perception of	0.462	0.486	0.450	0.468
English writing skills	(0.499)	(0.500)	(0.498)	(0.499)
2006				
Very positive self-perception of	0.718	0.692	0.710	0.688
English reading skills	(0.450)	(0.462)	(0.454)	(0.463)
Very positive self-perception of	0.668	0.641	0.666	0.634
English writing skills	(0.471)	(0.480)	(0.472)	(0.482)

Note: Unweighted numbers.

Source: International Adult Literacy Survey (IALS); ABS, Survey of Aspects of Literacy, Australia, Basic Confidentialised Unit Record File, 1996, 4228.0; ABS, Adult Literacy and Life Skills Survey, Australia, Basic Confidentialised Unit Record File, 2006, 4228.0; Adult Literacy and Life Skills Survey, New Zealand, 2006.

Appendix 5: Educational attainment and occupation

Educational attainment

Given the relationship that could be established between literacy skills and job requirements, it seems likely that highly educated workers use their skills more often than less educated workers. Table 7 includes the average literacy use of male and female workers with different levels of formal education in the four countries. We use educational categories of the International Standard Classification of Education (ISCED) designed by UNESCO to perform international comparisons. Since the categories of this classification are not available for all sub-samples, a number of assumptions had to be made to derive a common scale for the empirical analysis. A more detailed description of the generated education scale is provided in tables 9—11.

Table 7 Literacy use at work by highest educational attainment and country, 2003–2006

	Literacy use at work by country			
	Australia	New Zealand	USA	Canada
Males				
Bachelor Degree, Postgraduate Degree	384.0	370.3	363.7	356.9
Certificate, Advanced Diploma/Diploma	309.2	331.5	265.5	270.5
Year 12	291.4	250.6	256.0	242.4
Year 10-11	231.9	211.9	137.9	172.5
Year 9 or below	156.6	-	-	66.7
Total	301.7	293.6	282.7	273.3
Number of observations	2,349	2,674	1,347	7,676
Females				
Bachelor Degree, Postgraduate Degree	374.2	339.0	325.6	340.2
Certificate, Advanced Diploma/Diploma	308.8	301.0	278.4	268.4
Year 12	281.2	261.4	264.6	240.2
Year 10-11	228.6	216.6	155.0	150.0
Year 9 or below	154.4	-	-	97.7
Total	297.0	285.4	280.8	268.8
Number of observations	2,263	3,128	1,422	7,989

Notes: Weighted numbers. Numbers based on less than 30 observations are not reported.
Source: Adult Literacy and Life Skills (ALLS) Survey.

The numbers in Table 7 reveal that literacy requirements at work increase considerably with higher levels of education in all countries. However, there are substantial differences in literacy requirements between countries and different levels of education. Specifically, less educated male workers in the US make less use of their skills at work than comparable workers in other countries. The average of the literacy use measure of male workers with education at the second level (first stage) is 137.9 in the US and 231.6 in Australia. At the same time, cross-country differences in skill requirement levels are rather small at the upper tail of the educational distribution of male workers, suggesting that the translation of educational attainment into skill requirements works in the same

way for highly educated workers in different countries. A similar pattern may be observed for female workers although there is more variation in skill requirements across countries at the highest level of education. Overall, these numbers indicate that higher levels of education are associated with higher skill requirements at work, even though the way in which educational attainment translates into literacy use is slightly different across countries. These findings are line with the relationship between document literacy and literacy use presented in Figures 7 and 8 of the report.

Occupational category

The use of literacy skills at work does not only vary across different levels of education but also across occupational groups. However, we may expect that these dimensions are related to each other because workers in jobs that require a relatively high level of education are typically workers who make more use of their skills than workers in jobs that require a relatively low level of education. In particular, it seems likely that, for example, managers and professionals have the highest level of skill use at work because they typically work in jobs that require the highest level of education.

Table 8 Literacy use at work by occupation and country, 2003–2006

	Literacy use at work by country			
	Australia	New Zealand	United States	Canada
Males				
Managers and administrators	398.0	406.0	389.4	347.1
Professionals	404.1	414.1	393.6	400.2
Para-professionals	382.7	381.6	354.5	373.9
Clerks	283.0	305.9	235.9	198.3
Salespersons and personal service workers	251.5	236.5	262.4	216.1
Craft and related trades workers	225.4	237.9	194.7	245.3
Plant and machinery operators and drivers	204.1	198.4	230.6	218.3
Other	158.2	176.0	187.5	117.6
Total	301.7	293.3	282.6	273.2
Number of observations	2,323	2,664	1,346	7,655
Females				
Managers and administrators	384.5	375.5	371.5	345.5
Professionals	373.7	372.7	377.7	382.9
Para-professionals	336.6	347.4	349.9	338.2
Clerks	290.2	307.4	260.7	264.9
Salespersons and personal service workers	207.4	199.8	181.1	171.4
Craft and related trades workers	172.1	144.6	159.5	181.9
Plant and machinery operators and drivers	101.2	166.2	175.2	164.3
Other	140.6	126.9	139.6	123.0
Total	296.8	285.4	281.6	268.8
Number of observations	2,256	3,124	1,418	7,973

Notes: Weighted numbers.
Source: International Adult Literacy Survey (IALS).

Table 8 includes the mean levels of literacy use at work by occupation, gender and country in 2006. Since occupational categories are not the same in all sub-samples that were used in our empirical analysis, we have constructed an occupational scale that allows comparisons across sub-samples. A detailed discussion of the original scales and the underlying assumptions that were required to

construct the common scale are provided in Tables 9-11. The occupational categories that were used in our empirical analysis are similar to the broad categories of the International Standard Classification of Occupations (ISCO) developed by the International Labour Organization (ILO). The numbers in Table 8 indicate that managers and professionals are in fact the two occupations with the highest level of literacy use at work, while workers in occupations that typically require less skills and a lower level of education (such as craft and related trades workers or plant and machinery operators and drivers) are those with lower levels of average literacy use at work. These numbers indicate that our literacy use measure seems to be able to pick up the variations in skill requirements across occupations quite well.

Table 9 Description of educational attainment in the raw data

Sample	Original coding
IALS 1996	[1] no schooling/isced 0 (Education preceding the first level)
	[2] isced 1 (Education at the first level)
	[3] isced 2 (Education at the second level, first stage)
	[4] isced 3 (Education at the second level, second stage)
	[5] isced 5 (Education at the third level, first stage, of the type that leads to an award not equivalent to a first university degree)
	[6] isced 6/7 (Education at the third level, first stage, of the type that leads to a first university degree or equivalent)
ADL 1996	[1] Higher Degree
	[2] Postgraduate diploma
	[3] Bachelor degree
	[4] Undergraduate diploma
	[5] Associate diploma
	[6] Skilled vocational qualifications
	[7] Basic vocational qualifications
	[8] Completed highest level of secondary school available
	[9] Has not completed highest level of secondary school available
	[10] Never attended school
IALS 2006	[1] level 0 & 1 pre-primary or primary
	[2] level 2 lower secondary
	[3] level 3 upper secondary
	[4] level 4 post-secondary, non-tertiary
	[5] level 5b tertiary
	[6] level 5a tertiary
	[7] intermediate
	[8] first degree - medium - 3-5 years
	[9] first degree - long - 5+ years
	[10] second or higher degree
	[11] level 6 tertiary - advanced research degree

Table 9 continued **Description of educational attainment in the raw data**

Sample	Original coding
ALS 2006	[1] Postgraduate Degree, Graduate Diploma/Graduate Certificate
	[2] Bachelor Degree
	[3] Advanced Diploma/Diploma
	[4] Certificate III/IV
	[5] Certificate I/II
	[6] Certificate not further defined
	[7] Year 12
	[8] Year 11
	[9] Year 10
	[10] Year 9
	[11] Year 8 or below including never attended school
ALLS 2006	[1] Level 0 & 1 pre-primary or primary
	[2] Level 2 lower secondary
	[3] Level 3 upper secondary
	[4] Level 4 post-secondary, non-tertiary
	[5] Level 5B tertiary
	[8] First degree - medium - 3-5 years
	[9] First degree - long - 5+ years
	[10] Second or higher degree
	[11] Level 6 tertiary - advanced research degree

Table 10 Description of occupation in raw data

Sample	Original coding
IALS 1996	[1] legislators, senior officials and managers
	[2] professionals
	[3] technicians and associate professionals
	[4] clerks
	[5] service workers and shop & market sales workers
	[6] skilled agricultural and fishery workers
	[7] craft and related trades workers
	[8] plant and machine operators and assemblers
	[9] elementary occupations
ADL 1996	[1] Manager or Administrator
	[2] Professional
	[3] Para-professional
	[4] Tradesperson
	[5] Clerk
	[6] Salesperson or Personal Service Worker
	[7] Plant and Machinery Operators
	[8] Labourer or Related
IALS 2006	International ISCO scale 1110-9999
ALS 2006	[1] Legislators, senior officials and managers
	[2] Professionals
	[3] Technicians and associate professionals
	[4] Clerks
	[5] Service workers and shop and market sales workers
	[6] Skilled agricultural and fishery workers
	[7] Craft and related trades workers
	[8] Plant and machine operators and assemblers
ALLS 2006	International ISCO scale 1000-9999

Table 11 Construction of educational attainment and occupation

Generated scale / label	IALS 1996	ADL 1996	IALS 2006	ALS 2006	ALLS 2006
Educational attainment	1-2	10	1	10-11	1
[1] Year 9 or below	1-2	10	1	10-11	1
[2] Year 10-11	3	9	2	8-9	2
[3] Year 12	4	8	3	7	3
[4] Certificate, Advanced Diploma/Diploma	5	5-7	4	3-6	4
[5] Bachelor Degree, Postgraduate Degree	6	1-4	5-11	1-2	5,8-11
Occupation					
[1] Managers and administrators	1	1	1000-1999	1	1000-1999
[2] Professionals	2	2	2000-2999	2	2000-2999
[3] Para-professionals	3	3	3000-3999	3	3000-3999
[4] Clerks	4	5	4000-4999	4	4000-4999
[5] Salespersons and personal service workers	5	6	5000-5999	5	5000-5999
[6] Craft and related trades workers	7	4	7000-7999	7	7000-7999
[7] Plant and machinery operators and drivers	8	7	8000-8999	8	8000-8999
[8] Other	6,9,10	8	6000-6999,9000-9999	6,9,10	6000-6999,9000-9999

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