

## Job requirements and lifelong learning for older workers: Support document

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This document was produced by the authors based on their research for the report *Skill matches to job requirements*, and is an added resource for further information. The report is available on NCVER's website:  
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# Contents

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Tables and figures	3
Definition of variables	4
Descriptive statistics	7
Additional figures	12
References	13

# Tables and figures

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## Tables

1	Description of variables	4
2	Descriptive statistics, 1996	7
3	Descriptive statistics, 2006	9

## Figures

1	Relative numeracy use measure of participants by age group, 2006	12
2	Relative numeracy use measure of non-participants by age group, 2006	12

# Definition of variables

The following table provides a description of the variables that were used in the empirical analysis of the report. A detailed description of the generated job task and literacy use measures used in the report can be found in the support document to the report “Skill matches and job requirements” (Ryan and Sinning 2008a,b).

**Table 1 Description of variables**

Variable	
Person ID	Person ID
Year	Year indicator
Weight	Person weight
Education and training participation	1996: Whether received any training or education in the last 12 months; 2006: Undertook a qualification course and/or non-qualification course in the last 12 months
VET study	1996: Provider of first course was a TAFE college; 2006: Enrolled in TAFE or technical college in the last 12 months
Currently studying	1996: Worked less than 35 hours because was studying; 2006: Currently studying most recent educational qualification in the last 12 months
AQF level: higher education	1996: Educational qualification towards which first course was taken: Bachelor degree, postgraduate diploma, higher degree; 2006: Level of most recent educational qualification studied in the last 12 months: Advanced diploma/diploma, bachelor degree, postgraduate degree, graduate diploma/graduate certificate
Other courses	Number of courses participated in over the last 12 months > 1
Weeks studying	Number of weeks first course lasted (1996 only)
Hours studying or training	Total hours spent on most recent educational qualification in the last 12 months (2006 only)
Literacy use at work (0-500)	Literacy use at work (generated scale), 1996: (i) How often reports or articles were written in main job, (ii) How often letters or memos were written in main job, (iii) How often directions or instructions for any products were used in main job, (iv) How often manuals or reference books were read or used in the main job, (v) How often reports, articles, magazines or journals were read or used in main job, (vi) How often letters or memos were read or used in main job; "At least once a week": 2, "Less than once a week": 1, "Never": 0; 2006: (i) How often reads letters, memos or emails, (ii) How often reads or uses reports, articles, magazines or journals, (iii) How often reads or uses manuals or reference books including catalogues, (iv) How often writes or fills in letters, memos or emails, (v) How often writes or fills in reports, articles, magazines or journals, (vi) How often writes or fills in manuals or reference books including catalogues; "At least once a week": 2, "Less than once a week": 1, "Never": 0; Scale takes on values from 0-500.

**Table 1 continued**

Variable	
Numeracy use at work (0-500)	Numeracy use at work (generated scale), 1996: (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; "At least once a week": 2, "Less than once a week": 1, "Never": 0; 2006: (i) How often calculates prices, costs or budgets, (ii) How often measures or estimates the size or weight of objects, (iii) How often writes or fills in bills, invoices, spreadsheets or budget tables, (iv) How often reads or uses bills, invoices, spreadsheets or budget tables, (v) How often reads or uses diagrams or plans; "At least once a week": 2, "Less than once a week": 1, "Never": 0
Skills (0-500)	Self-assessed skills (generated scale), 1996: Self-perception of (i) English reading skills for the needs of main job, (ii) English writing skills for the needs of main job, (iii) English reading skills for the needs of daily life, (iv) English writing skills for the needs of daily life; "Poor": 0, "Good or moderate": 1, "Excellent": 2; 2006: (i) Has reading skills in English to do main job well, (ii) Has writing skills in English to do main job well, (iii) Self-perception of English reading skills for daily life, (iv) Self-perception of English writing skills for daily life; (i)-(ii): "Disagree / Strongly disagree": 0, "Agree": 1, "Strongly agree": 2, (iii)-(iv): "Poor": 0, "Good or moderate": 1, "Excellent": 2; Scale takes on values from 0-500.
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 1-5 (0-500)
Relative literacy use	Literacy use at work relative to document literacy
Relative numeracy use	Numeracy use at work relative to numeracy skills
Age	Five year age ranges
Birth cohort	Identifier for individuals from common birth cohorts in each survey
Sex	Male or female
Full-time employed	Indicator variable for full-time employment
Employer size	Employer size; number of persons employed at the location of the individuals'
Educational attainment (ASCED 2006)	Highest level of completed schooling or post-school qualification; the following categories were used for 2006: [1] Year 8 or below, [2] Year 9, [3] Year 10, [4] Year 11, [5] Year 12, [6] Certificate I/II, [7] Certificate III/IV, [8] Advanced diploma/diploma, [9] Bachelor degree, [10] Postgraduate degree, graduate diploma/graduate certificate

**Table 1 continued**

Variable	
Educational attainment	Highest level of completed schooling or post-school qualification; the following categories could be used in 1996 and 2006: [1] 1996: Has not completed highest level of secondary school available / Never attended school; 2006: Level not determined / Year 8 or below including never attended school / Year 9-11, [2] 1996: Completed highest level of secondary school available; 2006: Year 12, [3] 1996: Basic vocational qualifications; 2006: Certificate I/II / Certificate not further defined, [4] 1996: Skilled vocational qualifications; 2006 Certificate III/IV, [5] 1996: Associate diploma / Undergraduate diploma; 2006: Advanced Diploma / Diploma, [6] 1996: Bachelor degree; 2006: Bachelor degree, [7] 1996: Postgraduate diploma / higher degree; 2006: Postgraduate Degree, Graduate Diploma/Graduate Certificate
Occupation (ANZSCO 2006)	Occupation of main job; the following categories were used in 2006: [1] Labourers, [2] Machinery Operators And Drivers, [3] Sales Workers, [4] Clerical and Administrative Workers, [5] Community and Personal Service Workers, [6] Technicians and Trades Workers, [7] Professionals, [8] Managers
Occupation	Occupation of main job; the following categories could be used in 1996 and 2006: [1] Managers and Administrators, [2] Professionals, [3] Para-professionals, [4] Clerks, [5] Salespersons and Personal Service Workers, [6] Craft and related trades workers, [7] Plant and Machine Operators, and Drivers, [8] Other
Industry	Industry of main job; the following categories could be used in 1996 and 2006: [1] Agriculture, Forestry and Fishing, [2] Mining, [3] Manufacturing, [4] Electricity, Gas and Water Supply, [5] Construction, [6] Wholesale Trade, [7] Retail Trade, [8] Accommodation, Cafes and Restaurants, [9] Transport and Storage, [10] Communication Services, [11] Finance and Insurance Services, [12] Property and Business Services, [13] Government Administration and Defence, [14] Education, [15] Health and Community Services, [16] Cultural and Recreational Services, [17] Other

# Descriptive statistics

**Table 2** Descriptive statistics, 1996

<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
<b>Education and training participation indicators</b>				
Education and training participation	0.481	0.499	0	1
VET study	0.085	0.279	0	1
Currently studying	0.045	0.208	0	1
AQF level: higher education	0.068	0.251	0	1
Other courses	0.259	0.438	0	1
Weeks studying	5.6	11.3	0	52
<b>Job task measures</b>				
Literacy use	283.6	108.4	45.6	450.6
Numeracy use	253.7	90.7	62.6	437.3
<b>Individual literacy measures</b>				
Document literacy	286.8	47.0	160.0	417.1
Prose literacy	287.6	47.1	163.8	416.8
<b>Self-assessed skills</b>	347.9	53.1	6.9	492.9
<b>Relative skill use measures</b>	347.9	53.1	6.9	492.9
Relative literacy use	0.994	0.381	0.133	2.2
<b>Age</b>				
Age 15 - 19 years	0.049	0.217	0	1
Age 20 - 24 years	0.097	0.296	0	1
Age 25 - 29 years	0.127	0.333	0	1
Age 30 - 34 years	0.140	0.347	0	1
Age 35 - 39 years	0.151	0.358	0	1
Age 40 - 44 years	0.125	0.331	0	1
Age 45 - 49 years	0.118	0.323	0	1
Age 50 - 54 years	0.085	0.279	0	1
Age 55 - 59 years	0.055	0.228	0	1
Age 60 - 64 years	0.032	0.177	0	1
Age 65 - 69 years	0.011	0.108	0	1
Age 70 - 74 years	0.004	0.067	0	1
<b>Gender</b>				
Male	0.524	0.499	0	1
Female	0.475	0.499	0	1

Note: Table continued on next page.

**Table 2 continued**

<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
<b>Industry</b>				
Agriculture, Forestry and Fishing	0.046	0.210	0	1
Mining	0.011	0.108	0	1
Manufacturing	0.125	0.331	0	1
Electricity, Gas and Water Supply	0.009	0.096	0	1
Construction	0.064	0.246	0	1
Wholesale Trade	0.046	0.210	0	1
Retail Trade	0.141	0.348	0	1
Accommodation, Cafes and Restaurants	0.039	0.193	0	1
Transport and Storage	0.040	0.196	0	1
Communication Services	0.018	0.135	0	1
Finance and Insurance Services	0.033	0.179	0	1
Property and Business Services	0.098	0.298	0	1
Government Administration and Defence	0.057	0.233	0	1
Education	0.085	0.278	0	1
Health and Community Services	0.111	0.314	0	1
Cultural and Recreational Services	0.025	0.157	0	1
Other	0.043	0.205	0	1
<b>Full-time employment</b>	0.708	0.454	0	1
<b>Employer size</b>				
Less than 20	0.385	0.486	0	1
20-99	0.133	0.339	0	1
100-499	0.106	0.308	0	1
500 and over	0.374	0.484	0	1
<b>State</b>				
New South Wales	0.221	0.415	0	1
Victoria	0.201	0.401	0	1
Queensland	0.173	0.378	0	1
South Australia	0.114	0.318	0	1
Western Australia	0.149	0.356	0	1
Other	0.139	0.346	0	1

Notes: This table includes descriptive statistics (unweighted numbers) of the sample that was used in the empirical analysis of the report. Number of observations: 5435.

Source: ABS, Survey of Aspects of Literacy, Australia, Basic Confidentialised Unit Record File, 1996, 4228.0.

**Table 3 Descriptive statistics, 2006**

<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
<b>Education and training participation indicators</b>				
Education and training participation	0.539	0.498	0	1
VET study	0.056	0.231	0	1
Currently studying	0.111	0.314	0	1
AQF level: higher education	0.100	0.300	0	1
Other courses	0.077	0.266	0	1
Hours studying or training	1.1	3.2	0	15
<b>Job task measures</b>				
Literacy use	297.6	116.6	27.1	473.8
Numeracy use	275.4	96.8	37.7	446.6
<b>Individual literacy measures</b>				
Document literacy	287.9	48.8	86.9	416.0
Prose literacy	286.4	47.0	89.4	405.8
<b>Self-assessed skills</b>				
	381.1	93.2	17.9	481.0
<b>Relative skill use measures</b>				
Relative literacy use	1.037	0.415	0.108	3.4
Relative numeracy use	0.994	0.377	0.152	4.6
<b>Age</b>				
Age 15 - 19 years	0.042	0.202	0	1
Age 20 - 24 years	0.076	0.265	0	1
Age 25 - 29 years	0.100	0.300	0	1
Age 30 - 34 years	0.117	0.322	0	1
Age 35 - 39 years	0.132	0.338	0	1
Age 40 - 44 years	0.129	0.335	0	1
Age 45 - 49 years	0.123	0.329	0	1
Age 50 - 54 years	0.106	0.308	0	1
Age 55 - 59 years	0.091	0.287	0	1
Age 60 - 64 years	0.055	0.228	0	1
Age 65 - 69 years	0.016	0.128	0	1
Age 70 - 74 years	0.007	0.088	0	1
<b>Gender</b>				
Male	0.520	0.499	0	1
Female	0.479	0.499	0	1

Note: Table continued on next page.

**Table 3 continued**

<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
<b>Level of highest educational attainment (ASCED)</b>				
Postgraduate degree, graduate diploma/graduate certificate	0.086	0.280	0	1
Bachelor degree	0.181	0.385	0	1
Advanced diploma/diploma	0.102	0.303	0	1
Certificate III/IV	0.189	0.391	0	1
Certificate I/II	0.011	0.107	0	1
Year 12	0.164	0.371	0	1
Year 11	0.068	0.251	0	1
Year 10	0.130	0.336	0	1
Year 9	0.032	0.178	0	1
Year 8 or below	0.032	0.176	0	1
<b>Occupation of main job (ANZSCO 2006)</b>				
Managers	0.163	0.369	0	1
Professionals	0.230	0.421	0	1
Technicians and Trades Workers	0.144	0.351	0	1
Community and Personal Service Workers	0.080	0.271	0	1
Clerical and Administrative Workers	0.157	0.363	0	1
Sales Workers	0.074	0.262	0	1
Machinery Operators And Drivers	0.059	0.236	0	1
Labourers	0.091	0.287	0	1
<b>Industry</b>				
Agriculture, Forestry and Fishing	0.037	0.189	0	1
Mining	0.016	0.126	0	1
Manufacturing	0.094	0.292	0	1
Electricity, Gas and Water Supply	0.009	0.095	0	1
Construction	0.082	0.275	0	1
Wholesale Trade	0.038	0.191	0	1
Retail Trade	0.104	0.306	0	1
Accommodation, Cafes and Restaurants	0.055	0.229	0	1
Transport and Storage	0.043	0.204	0	1
Communication Services	0.020	0.143	0	1
Finance and Insurance Services	0.037	0.190	0	1
Property and Business Services	0.018	0.136	0	1
Government Administration and Defence	0.079	0.270	0	1
Education	0.080	0.272	0	1
Health and Community Services	0.109	0.312	0	1
Cultural and Recreational Services	0.017	0.132	0	1
Other	0.150	0.358	0	1

Note: Table continued on next page.

**Table 3 continued**

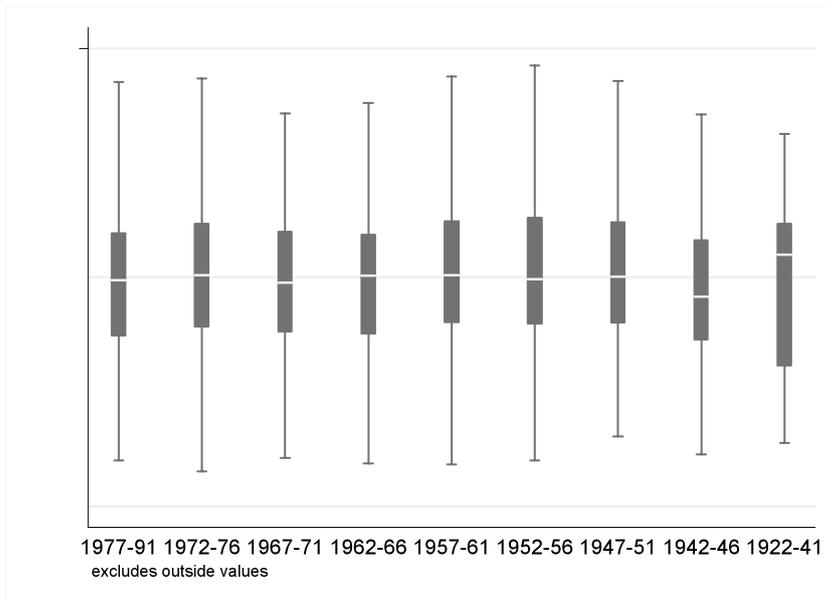
<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
<b>Full-time employment</b>	0.708	0.454	0	1
<b>Employer size</b>				
Less than 20	0.258	0.438	0	1
20-99	0.143	0.351	0	1
100-499	0.106	0.308	0	1
500 and over	0.362	0.480	0	1
<b>State</b>				
New South Wales	0.211	0.408	0	1
Victoria	0.195	0.396	0	1
Queensland	0.182	0.386	0	1
South Australia	0.118	0.323	0	1
Western Australia	0.143	0.350	0	1
Other	0.149	0.356	0	1

Notes: This table includes descriptive statistics (unweighted numbers) of the sample that was used in the empirical analysis of the report. Number of observations: 5286.

Source: ABS, Adult Literacy and Life Skills Survey, Australia, Basic Confidentialised Unit Record File, 2006, 4228.0.

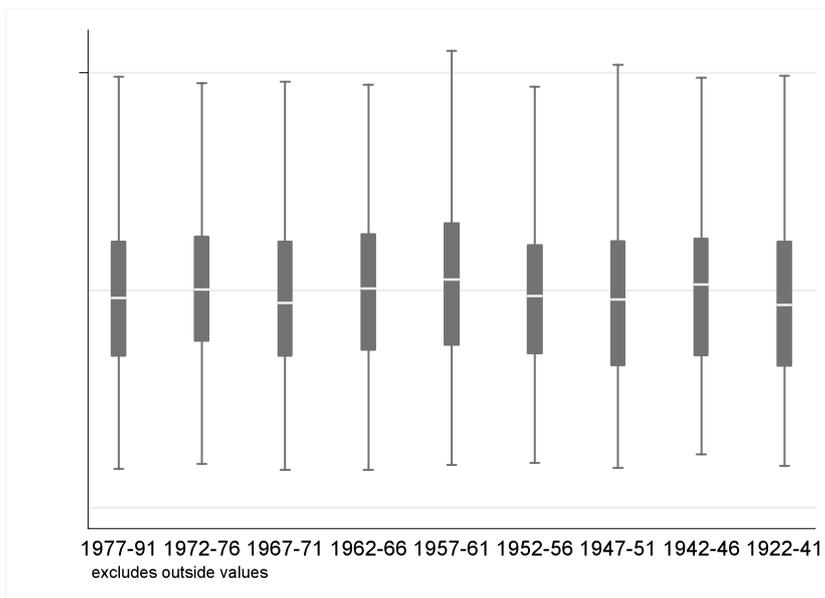
# Additional figures

**Figure 1** Relative numeracy use measure of participants by age group, 2006



Source: ABS, Adult Literacy and Life Skills Survey, Australia, Basic Confidentialised Unit Record File, 2006, 4228.0.

**Figure 2** Relative numeracy use measure of non-participants by age group, 2006



Source: ABS, Adult Literacy and Life Skills Survey, Australia, Basic Confidentialised Unit Record File, 2006, 4228.0.

# References

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- Ryan, C & Sinning, M 2008a, *Skill matches and job requirements*, National Centre for Vocational Education Research (NCVER), Adelaide.
- 2008b, *Skill matches and job requirements: Support document*, National Centre for Vocational Education Research (NCVER), Adelaide.