



NEW ISSUE

# **Aspects of Literacy: Assessed Skill Levels Australia**

**1996**

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AUSTRALIAN BUREAU OF STATISTICS

EMBARGO: 11:30AM (CANBERRA TIME) MON 8 SEP 1997

ABS Catalogue No. 4228.0

ISBN 0 642 23263 6

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## P R E F A C E . . . . .

The Survey of Aspects of Literacy (SAL) was a national survey designed to measure some elements of Australians' literacy and numeracy skills. The literacy and numeracy skills covered by the survey were the information processing skills necessary to use printed material found at work, at home, and in the community. The survey was conducted between May and July 1996.

There were two components to the survey:

- respondents were asked to rate their reading, writing and basic mathematical skills for the needs of daily life and for the needs of their main job and provide other background information; and
- respondents were asked to undertake a set of tasks to provide an objective assessment of their literacy and numeracy abilities.

This publication provides data from the second component of the survey and an explanation of the survey methodology. The results from the first component were released in May 1997 in *Aspects of Literacy: Profiles and Perceptions, Australia* (Cat. no. 4226.0).

My thanks to:

- the User Advisory Group, comprising experts in the fields of language and literacy, for providing the Australian Bureau of Statistics (ABS) with advice on the information to be collected and on some aspects of the survey methodology to ensure it was suitable in the Australian context. The group included representatives from State and Commonwealth education and training departments, language and literacy research organisations, academics, industry groups and the Australian Language and Literacy Council;
- the people who contributed the feature articles to this publication; and
- Statistics Canada and the Educational Testing Service in the United States of America, both of which had a major role in the development of the methodology and in the production of results.

The cooperation of those who participated in this survey is very much appreciated.

W. McLennan  
Australian Statistician

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## INTRODUCTION .....

The increasing complexity of our society and the need for a more flexible and highly educated workforce mean that individuals need to be able to read, comprehend and apply information of varying difficulty from a range of different sources to function effectively at work and in everyday life.

The Survey of Aspects of Literacy (SAL) aims to:

- identify 'at risk' groups with low literacy and numeracy skills;
- help evaluate literacy and numeracy assistance programs;
- identify barriers to individuals achieving skill levels sufficient for daily life and work; and
- provide statistical support for planning and decision making.

### THE SURVEY

The SAL covered people aged 15–74 across Australia, but excluded those living in remote and sparsely settled areas. Information was collected by personal interview. Of the people selected in the survey, 9,302 (87%) responded.

The survey was designed to measure certain aspects of the literacy and numeracy skills of Australians. The 'literacy and numeracy skills' covered in the survey were 'the information processing skills necessary to use printed material found at work, at home, and in the community'. The survey focussed on 'functional literacy and numeracy' — those skills necessary to understand and use information from material which is printed in English and found in everyday life.

There were two components to the survey, which was conducted in respondents' homes by interviewers with experience in ABS household surveys. The first was an interview, in which respondents were asked a series of questions to obtain background socio-demographic information. Respondents were also asked to separately rate their reading, writing and basic mathematical skills as either excellent, good, moderate or poor. Information was also collected about the frequency with which respondents undertook selected literacy and numeracy activities in daily life and at work, and about their use of different languages.

The second component was an objective assessment of some literacy skills. After the background interview was completed, the respondent was asked to complete a booklet containing six relatively simple literacy-related tasks. Those who completed two or more of these correctly were then given a much larger variety of tasks in a separate booklet which contained, on average, 46 tasks drawn from a pool of 108. Respondents were asked to use the textual materials provided in the booklet to complete these tasks. These tasks were drawn from a range of topic and knowledge areas using commonplace examples of printed material, and required varying degrees of comprehension and arithmetic skills. Examples include using a bus timetable, working out the cost of discounted items 'on sale', and following a manufacturer's warranty instructions for a refrigerator.



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## THREE TYPES OF LITERACY

The SAL objectively assessed three types of literacy.

### Prose literacy

Prose literacy is the ability to understand and use information from various kinds of prose texts, including texts from newspapers, magazines and brochures.

The skills required to use prose texts include locating information in the text, integrating two or more pieces of information, and generating information by processing information from the text or by making text-based inferences.

The difficulty associated with using a prose text is affected by features such as the length, density and content of the text; by the use of organisational aids such as headings, bullets, and special typefaces; and the number of categories of information a reader must process.

### Document literacy

Document literacy is the ability to locate and use information contained in materials such as tables, schedules, charts, graphs and maps.

The effective use of documents depends partly on being able to locate information in a variety of displays taking various conditions into account, to integrate information from different parts of the document, to generate information by processing information from the document or by making inferences, and to transfer information from one source to another, for example when completing order forms.

Characteristics of documents which affect how difficult they are to use include the structure and content of the document and the number of categories of information the reader must process.

### Quantitative literacy

Quantitative literacy is the ability to perform arithmetic operations using numbers contained in printed texts or documents.

The effective use of numbers contained in printed material involves being able to locate numbers and extract them from material that may contain similar but irrelevant information, and being able to perform arithmetic operations when the operations to be used must often be inferred.

The difficulty associated with extracting numbers contained in text and performing arithmetic operations to obtain the appropriate result is affected by the particular arithmetic operation to be used, the number of arithmetic operations, the extent to which the numbers are embedded in printed materials, and the extent to which the operation to be performed must be inferred.

This type of literacy clearly has a strong element of numeracy. However, because quantitative literacy relates to the ability to extract and use numbers from printed texts and documents, for the purposes of the SAL and this publication, it is referred to as a type of literacy.

## SKILL LEVELS

The SAL did not define literacy in terms of a basic threshold, above which someone is 'literate' and below which someone is 'illiterate'. Rather it defined literacy as a continuum for each of the three types of literacy (consistent with international practice, these are also referred to as the prose, document and quantitative *scales*) denoting how well people used material printed in English. Progression along this continuum was characterised by increased ability to 'process' information (for example to locate, integrate, match and generate information) and to draw correct inferences based on the information being used.

For analytical purposes, the scores on the literacy continuum for each of the three types of literacy were divided into five levels. However, it should be noted that because the tasks used to derive literacy ability vary in difficulty, there is a range of abilities even among people within each level.

## Level 1 (lowest) to Level 5 (highest)

- Level 1 — People at this level have very poor skills, and could be expected to experience considerable difficulties in using many of the printed materials that may be encountered in daily life. Some people at this level display the ability to locate a single piece of information in a relatively short piece of text, to enter a piece of information onto a document, or to perform simple arithmetic operations using numbers provided. However, Level 1 also includes those who could not successfully complete such tasks.
- Level 2 — People at this level could be expected to experience some difficulties in using many of the printed materials encountered in daily life. While they would be able to use some printed material, this would generally be relatively simple, short and clearly structured, or require simple arithmetic operations to be performed on numbers that are easily determined from the source text.
- Level 3 — This level represents the ability to cope with a varied range of material found in daily life and at work. People at this level would not be able to use all printed material with a high level of proficiency, but they would demonstrate the ability to use longer, more complex printed material. They would be able to take conditional information into account, to make inferences, to compare and contrast information, and to extract numbers embedded in complex displays and perform more varied arithmetic operations.
- Level 4 — People at this level have good literacy skills, and display the ability to use higher order skills associated with matching and integration of information, with making higher order inferences and with performing arithmetic operations where either the quantities or the operation to be performed are not easily determined.
- Level 5 — People at this level have very good literacy skills, and can make high-level inferences, use complex displays of information, process conditional information and perform multiple operations sequentially.

The table on the following page gives examples of the literacy-related tasks that people at each level were able to consistently complete successfully (except for some people at Level 1 – see above).

## WHAT COULD PEOPLE AT EACH LEVEL DO?

PROSE	DOCUMENT	QUANTITATIVE
<b>LEVEL 1 (lowest level)</b>		
Locate information on a medicine label giving the maximum number of days medicine should be taken	Using a simple chart, locate a specified percentage	Add a handling charge to total cost on an order form
Locate and underline a sentence in a newspaper article describing what a swimmer ate	Enter the number of theatre tickets required on an order form	
From a short recipe, identify the reason for including a particular ingredient	Using a simple chart, identify the country with the smallest projected quantity of radioactive waste	
Locate one piece of information in a short fire-safety article		
<b>LEVEL 2</b>		
Use information in an article to explain what happens when a plant is exposed to low temperatures	On a ticket order form, enter the intended date for a trip to the theatre	From a simple chart, calculate the percentage of men teachers, given the percentage of women teachers
Using a flyer from a personnel department, find where to get more information	Identify the country in which women are in the minority in the teaching profession, using a simple chart	Indicate quantity of a specified ingredient required if a given recipe is halved
In a fire-safety article, locate information about a suggested new law	Using a bus timetable, identify the latest bus available, given specified conditions	Using a bus timetable, calculate the duration of a given bus ride
Identify which movies are comedies in a set of short movie reviews	Using a compound interest table, list all the rates that will yield more than \$500 interest if \$100 is invested for 20 years	Using a weather chart for Asia, calculate the difference between today's temperatures in Bangkok and Seoul
<b>LEVEL 3</b>		
Determine, from textual information only, which movie review is least favourable	List two features not included on any basic clock radio in a consumer advice table	Calculate the difference in oil consumption by a specified group across two different years
List three situations for which a doctor should be consulted, according to information on a medicine label	Enter the number of original pages and the number of copies required on a printing requisition form	Using a chart, calculate the difference between Canada's energy production and its consumption
Explain how to check for correct seat height on a bicycle, according to a page from a bicycle maintenance manual	On a weather map of Europe, circle the area where heavy rain is expected over a specified period	Using a table of approximate distances, calculate the difference in kilometres between two journeys
<b>LEVEL 4</b>		
Extract three pieces of information from an employment pamphlet	Using a consumer advice table, identify which full-featured clock radio is rated highest on performance	On a timesheet, enter the number of hours worked during single-time pay periods and calculate total
Contrast two types of warranty described on a warranty card for an appliance	Use a table of approximate distances to identify the closest city to a specified location	Using a table of approximate distances, calculate the total distance travelled in two trips
Compare two types of child restraining device described in a road safety pamphlet	Write a brief summary contrasting the distribution of oil consumption in two pie charts	Using a compound interest table, calculate the total interest earned if investing \$100 at 6% for 10 years
<b>LEVEL 5 (highest level)</b>		
In own words, describe one difference between two types of job interview outlined in an employment pamphlet	Using a consumer advice table, identify the average advertised price for a clock radio meeting specified conditions	Using a table, calculate the percentage of calories derived from fat, given total fat (g), calories, and the number of calories contained in each gram of fat
List two examples from a lengthy newspaper article that illustrate the main argument of the article		From an advertisement, calculate the total savings on two sale items, each reduced by different percentages

## Skill level derivation

The 'task-based' methodology used to derive skill levels was developed and tested for the International Adult Literacy Survey by Statistics Canada, and the Educational Testing Service in the United States of America. This methodology has been shown to be valid for producing population estimates of literacy and numeracy abilities and to be a stable measurement tool across different countries. To ensure that the methodology was suitable for the Australian context, it was extensively pilot-tested in Australia and an independent evaluation of the results of one of the pilot tests was conducted by a panel of Australian experts in the fields of language and literacy.

The assessment utilised a wide range of prose, document and quantitative literacy texts containing the type of information that people would encounter in everyday life. Respondents were required to apply a variety of 'information processing skills' (such as locating and integrating information and performing arithmetic operations) to answer specific questions or tasks relating to the stimulus material. Respondents' answers were scored 'correct', 'incorrect', or 'not attempted'. The tasks were then ranked in order of their difficulty on a scale of 0 to 500, according to how well all respondents actually performed them. Individuals were then assigned scores (also on a scale of 0 to 500) according to how well they performed on the tasks they were given, which varied in difficulty. Individuals with a particular score will consistently be able to perform tasks at the same point on the scale.

Individuals' scores were then grouped into the five literacy levels described previously, each level being distinguished by qualitative differences in the skills required to succeed at that level.

More detailed information about the methodology can be found in Appendix A.

## PUBLICATION CONTENT

This publication is the second release of statistics from the SAL. It contains information about people's literacy skill levels derived through objective assessment, comparisons of the objective results with people's perceptions of their own literacy and numeracy abilities, and a description of the survey methodology.

Much of the data in this publication is reported in summary form. While each chapter concludes with a set of statistical tables for reference, they do not contain all the data referred to in the text. More detailed information is available on request. However, due to the relatively small sample size, only limited information can be provided for individual States and Territories.

The chapters in Part A present a detailed statistical profile of Australians' literacy skills. Part B contains four feature articles, contributed by people with expertise in the fields of language and literacy, which analyse and comment on the survey data from different perspectives. The opinions expressed in these articles are those of the authors and are not necessarily shared by the ABS. Part C provides more detailed information about the survey methodology.

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## INTERPRETATION OF THE STATISTICS

This publication analyses the relationship between literacy skills and a range of socio-demographic factors. While there is a close relationship between many individual factors and literacy skills, it is most likely that no single factor determines an individual's literacy ability. Rather, throughout life, individuals encounter different circumstances and the interaction of many factors will affect the development of literacy skills.

Furthermore, while the survey reveals relationships between certain characteristics and literacy skills, it is impossible to determine whether literacy skills affect particular aspects of our lives, or are affected by them. In many cases, there may be an effect in both directions. For example, there is a strong relationship between literacy skills and how often books are read — while someone with good literacy skills might be more likely to read books often, the act of reading books may help to develop good literacy skills.

## INTERNATIONAL ADULT LITERACY SURVEY

By conducting the SAL, Australia became part of the International Adult Literacy Survey coordinated by the Organisation for Economic Cooperation and Development (OECD) and Statistics Canada. This international study involves many countries undertaking similar surveys over a four-year period. This will enable international comparisons of various aspects of literacy measured by the International Adult Literacy Survey.

It is generally acknowledged that English literacy skills are vital for Australians to function effectively in daily life and at work:

Proficiency in our national language, Australian English, is obviously necessary for an individual to participate as fully as possible in Australian society ... English language proficiency has a vital bearing on the labour market prospects and the general welfare of individual Australians ... without appropriate intervention and assistance, those lacking effective English literacy are likely to become even more disadvantaged over time in a society which increasingly values skills and relevant employment experience (Department of Employment, Education and Training 1991a).

The results of the SAL help to answer the questions of whether Australians' literacy skills are adequate for the challenges placed upon them in daily life, and whether there are any groups in the community that may be disadvantaged by poor literacy skills.

**HOW GOOD ARE AUSTRALIANS' LITERACY SKILLS?**

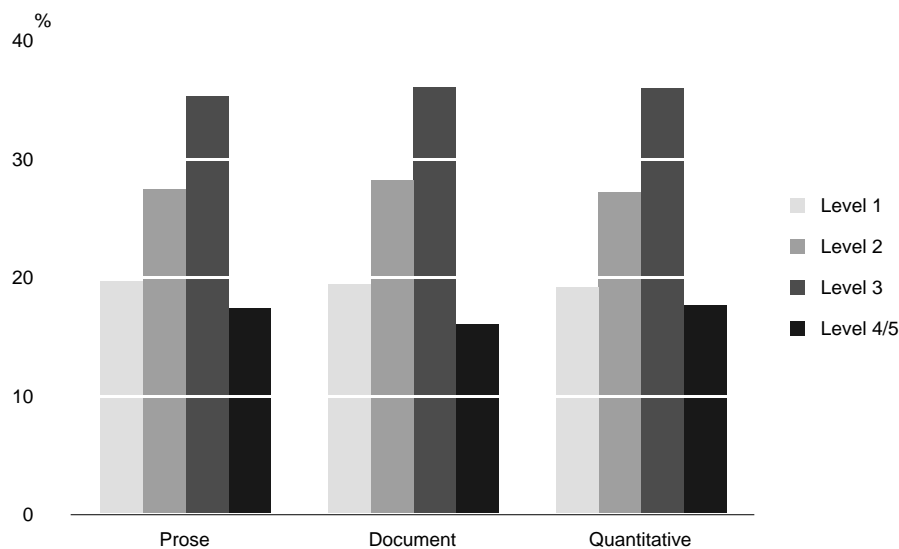
The skill level distribution of people aged 15–74 was similar on each of the prose, document and quantitative literacy scales. About 2.6 million people had very poor skills (Level 1) and could be expected to experience considerable difficulties in using many of the printed materials that may be encountered in daily life. About 3.6 million were at Level 2, and could be expected to experience some difficulties in using many of the printed materials that may be encountered in daily life. Level 3 was the largest category, and the skills of the 4.8 million people at this level would enable them to cope with many printed materials found in daily life and at work, though not always with a high level of proficiency. Some 2.0 million people were at Level 4, representing good skills, and a relatively small number (300,000) were at Level 5, representing very good skills. People at both Level 4 and Level 5 are considered capable of managing the literacy demands of everyday life.

**1.1 NUMBER AND PROPORTION AT EACH SKILL LEVEL**

Skill level	Prose scale.....		Document scale.....		Quantitative scale.....	
	'000	%	'000	%	'000	%
Level 1	2 607.4	19.7	2 580.3	19.5	2 531.8	19.2
Level 2	3 631.9	27.5	3 738.3	28.3	3 590.8	27.2
Level 3	4 668.9	35.3	4 774.2	36.1	4 764.0	36.0
Level 4	2 052.7	15.5	1 880.8	14.2	2 011.9	15.2
Level 5	259.9	2.0	247.2	1.9	322.3	2.4
<b>Total</b>	<b>13 220.8</b>	<b>100.0</b>	<b>13 220.8</b>	<b>100.0</b>	<b>13 220.8</b>	<b>100.0</b>

Because Level 5 is a comparatively small group, for the purpose of analysis, Level 4 and Level 5 have been combined in most instances.

1.2 PROPORTION AT EACH SKILL LEVEL



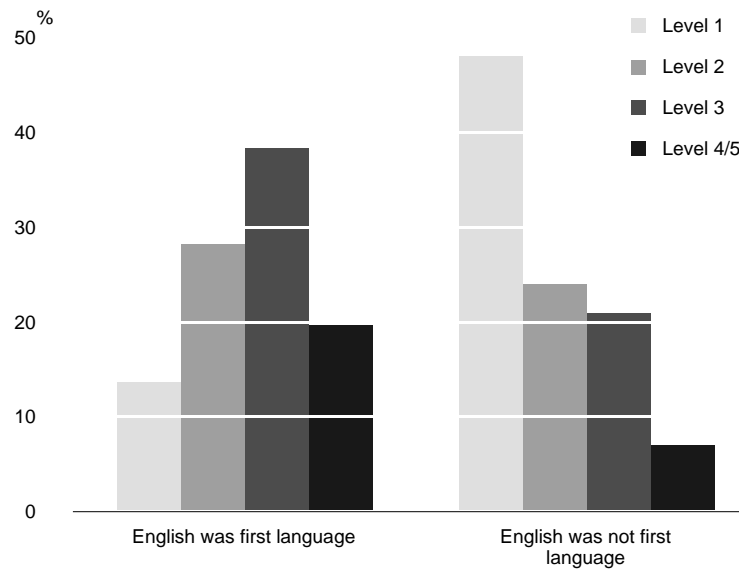
Although the distribution was similar across each of the three scales, people who were at a particular level on one scale were not necessarily at the same level on all three scales. For example, although about 20% of the population were at Level 1 on each scale, only 15% were at Level 1 on *all* three scales. Similarly, while 16% to 18% were at Level 4/5 on each scale, 11% were at Level 4/5 on all three scales. The results indicate that people with very poor (Level 1) or good (Level 4/5) skills were more likely to be at the same level on all three scales than those at Levels 2 and 3.

The following analyses focus on how the proportions at each level varied according to selected socio-demographic characteristics.

WHETHER ENGLISH WAS THE FIRST LANGUAGE SPOKEN

One characteristic which was strongly related to English literacy skill level was whether English was the first language spoken.

Of people who did not speak English as their first language, between 43% (on the quantitative scale) and 48% (on the prose scale) were at Level 1, representing approximately one million people. In comparison, of people whose first language was English, 14% (on each scale) were at Level 1, about 1.5 million people. Some 18% to 20% of those whose first language was English were at Level 4/5, compared with 7% to 8% for those whose first language was not English.

**1.3 PROPORTION AT EACH SKILL LEVEL, By First Language — Prose Scale****EDUCATIONAL ATTAINMENT**

Educational attainment was another characteristic strongly linked to literacy performance. In general, greater proportions of people with high skill levels had high levels of educational attainment compared with those at lower skill levels. For example, 65% of people at Level 4/5 on the prose scale had a post-school qualification, compared with 22% of people at Level 1.

**AGE**

Younger people tended to have higher levels of literacy than older people.

Compared with older people, larger proportions of people aged under 45 had good skills (Level 4/5), with the exception of those aged 15–19. Many 15–19 year olds will not yet have completed their education and will have little work experience, and therefore their literacy skills may develop further. The literacy performances of males and females aged 15–19 were similar on the document scale, but on the prose and quantitative scales there were some significant, and interesting, differences. On the prose scale, the proportion of females aged 15–19 at Levels 2, 3, and 4/5 consistently exceeded that of males in the same age group, with the corollary that the proportion of females with very poor skills (Level 1) was half that of males (10% of females had very poor skills compared with 20% of males). On the quantitative scale, however, there were larger proportions of females aged 15–19 at Levels 1, 2 and 3, and a correspondingly smaller proportion with good to very good skills (Level 4/5) compared with males in the same age group (some 8% of females aged 15–19 were at Level 4/5 on the quantitative scale compared with 15% of males).

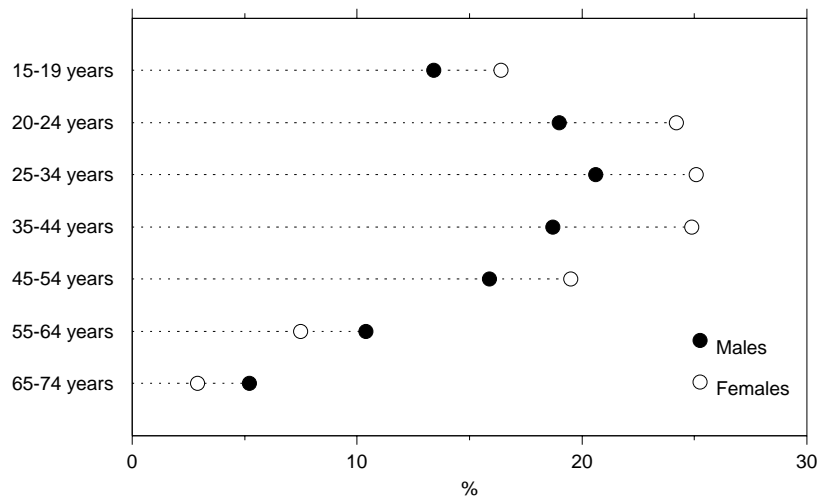


The literacy skills of people aged 45 and over declined markedly with age. Some 41% to 46% of those aged 65–74 had very poor skills, and three-quarters were at Levels 1 and 2. This may be related to greater proportions of older people having lower educational attainment levels, and/or the relatively high rate of disabilities (some of which would affect literacy skills) among older people.

SEX

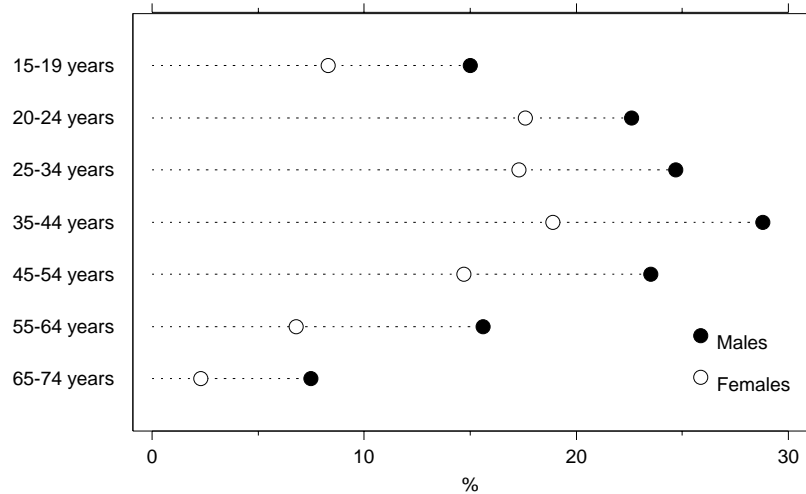
There were larger proportions of females at high levels of prose literacy for most age groups. However, in the 55–74 year age group, the proportion of males at Level 4/5 was greater than the proportion of females, possibly due to the (previous) better educational and labour force opportunities for males in this age group.

1.4 PROPORTION AT LEVEL 4/5, By Age — Prose Scale



On the quantitative scale, the proportions of males with Level 4/5 skills were larger than the corresponding proportions of females across all age groups. In total, 22% of males were at Level 4/5, compared with 14% of females.

1.5 PROPORTION AT LEVEL 4/5, By Age — Quantitative Scale



The proportion of older females at Level 1 on the quantitative scale was markedly greater than that of older males. For example, 45% of females aged 65–74 were at Level 1 compared with 37% of males.

On the document scale, the proportions of males and females with good skills (Level 4/5) were similar for those aged under 45, but older males tended to have better document skills than older females.

The different results for males and females may reflect to some extent traditional differences in the fields of study of males and females. The report *Girls in Schools 4* notes that:

Subject areas with predominantly male enrolments included technical and applied studies ... and physical sciences. Subject areas with predominantly female enrolments included home sciences ... creative and performing arts ... and language ... In addition, males tended to be enrolled to a greater extent in advanced levels of mathematics than females (Department of Employment, Education and Training 1991b).

#### LABOUR FORCE STATUS

There was a clear relationship between literacy skill level and labour force status. Depending on the literacy scale, 11% to 12% of employed people were at Level 1. The corresponding percentages for unemployed people were 30% to 31%, and for those who were not in the labour force, the proportions were even larger.

The proportions at Level 2 within each labour force category were similar, but significantly larger proportions of employed people were at Levels 3 and 4/5, compared with unemployed people and those not in the labour force.

#### INCOME

Just 6% of people at Level 1 on the prose scale received an annual income in the highest quintile, compared with 30% of people at Level 4/5. Some 63% of people at Level 1 on the prose scale were in the two lowest income quintiles. The income distributions for Levels 2 and 3 were similar to the distribution for the total population.

The results on the document and quantitative scales were similar, but the proportion of people at Level 4/5 on the quantitative scale who were in the top income quintile was the highest of all scales, at 37%. This may be because greater proportions of males were at Level 4/5 on the quantitative scale compared with females, and males tend to have larger incomes.

INDIGENOUS PEOPLES

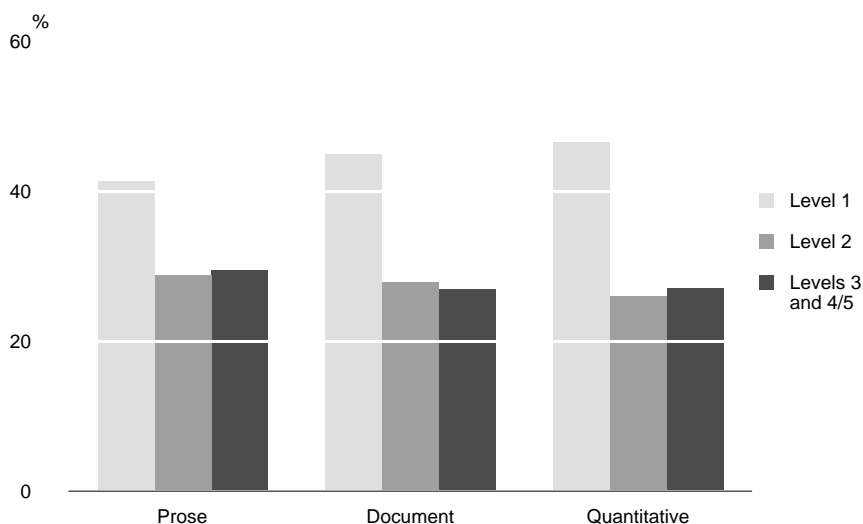
The SAL yielded some estimates for people who were of Aboriginal and Torres Strait Islander origin (Indigenous peoples). It should be noted that the exclusion of certain remote and sparsely settled areas from the SAL sample means that an estimated one-quarter of Indigenous peoples, who live in such areas, did not have a chance of being selected in the survey. As the English literacy skills of this group may differ from the skills of those Indigenous peoples living in urban areas, the following results should not be used as an indicator of the literacy skill levels of the total Indigenous population. Furthermore, because the number of people in the sample who identified themselves as Indigenous was small, the estimates produced have relatively high standard errors.

Of those Indigenous peoples represented by the sample, almost all (98%) reported speaking English as their first language.

Significantly greater proportions of Indigenous peoples were at low literacy levels compared with other people who spoke English as their first language, and their skills showed more variation across the three scales. Some 41% were at Level 1 on the prose scale, 45% were at Level 1 on the document scale, and 47% were at Level 1 on the quantitative scale.

Different levels of educational attainment may explain these results to some extent. Some 62% of Indigenous peoples did not complete the highest level of secondary school (the corresponding proportion for other people whose first language was English was 36%).

**1.6 PROPORTION OF INDIGENOUS PEOPLES AT EACH SKILL LEVEL**



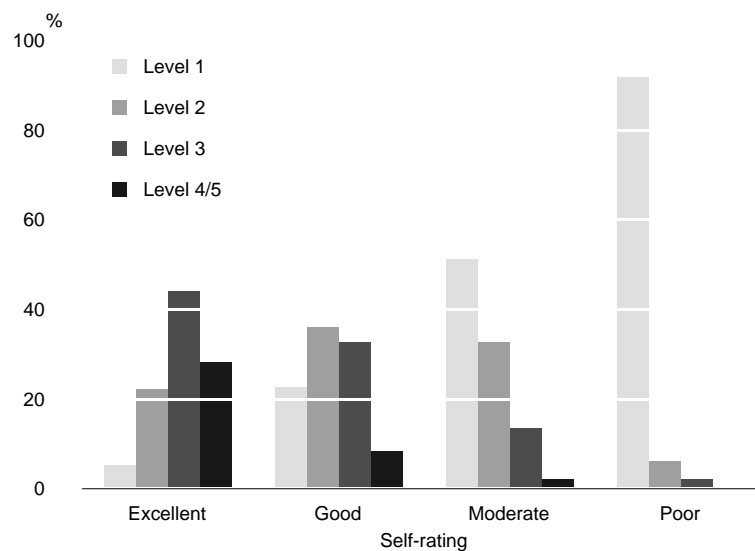
## HOW DID THE OBJECTIVE ASSESSMENT COMPARE WITH PEOPLE'S SELF-PERCEPTIONS?

The objective assessment measured skills on the prose, document and quantitative scales after survey respondents had rated their own reading, writing and basic mathematical skills in the context of 'the needs of daily life'.

## Self-rating of reading skills and objective assessment of prose skills

Almost all (92%) of those who rated their reading skills for the needs of daily life as poor were at the lowest level on the prose scale, with negligible proportions at each of the other levels.

Of those who rated their reading skills for the needs of daily life as excellent, 28% were at Levels 1 and 2 on the prose scale.

**1.7 SELF-RATING OF READING SKILLS, By Prose Skill Level**

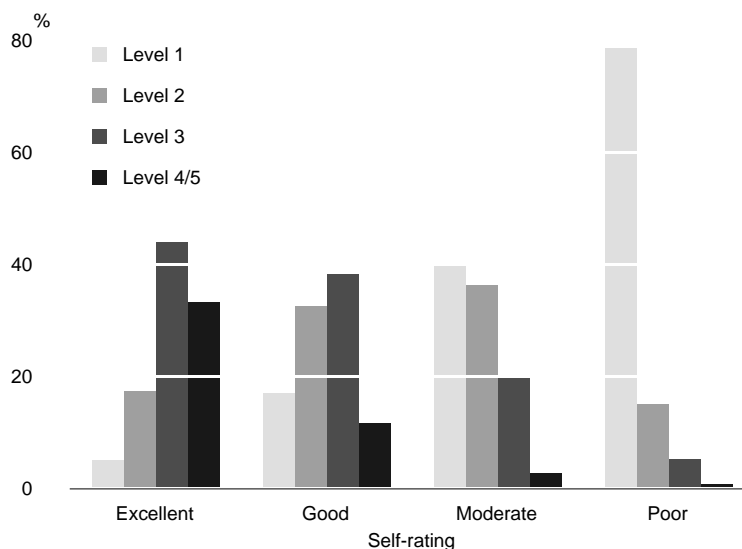
It may seem incongruous that some people who were objectively assessed as having relatively poor literacy skills rated their skills as excellent or good. One possible explanation for this is that people with lower skill levels (as measured by the objective assessment) who had little need to use advanced skills in daily life may consider that their skills are good enough to meet the demands placed on them, and, accordingly, rate their skills *for the needs of daily life* as good, or even excellent.

## Self-rating of basic mathematical skills and objective assessment of quantitative skills

Of those who rated their basic mathematical skills for the needs of daily life as poor, 79% were at Level 1 on the quantitative scale, and 15% were at Level 2. This pattern suggests that the relationship between self-rating of basic mathematical skills and assessed quantitative skills is not as close as the relationship between self-rating of reading skills and assessed prose skills, where almost all of those who rated themselves as poor were at the lowest skill level.

Most of those who rated their basic mathematical skills as good had low to mid-range skills (Levels 1 to 3) but a significant proportion (12%) were at Level 4/5. Of those who rated their basic mathematical skills as excellent, 44% were at Level 3 and 33% were at Level 4/5, but significant proportions were at Levels 1 and 2 (23%).

**1.8 SELF-RATING OF BASIC MATHS SKILLS, By Quantitative Skill Level**



**STATE OR TERRITORY OF USUAL RESIDENCE**

New South Wales and Victoria had the largest proportions at Level 1 of all the States and Territories for each literacy scale, while the two Territories<sup>1</sup> had the smallest proportions at Level 1.

The Australian Capital Territory contained the largest proportion of people at Level 4/5 on each literacy scale. Tasmania and New South Wales had relatively small proportions at Level 4/5 on each scale.

Some of the differences between States and Territories in terms of literacy performance may be explained by differences in the socio-demographic characteristics of their populations. For example, New South Wales and Victoria have relatively large proportions of people whose first language was not English while Tasmania and Queensland have relatively small proportions. There are also variations in the age structures across States and Territories.

<sup>1</sup> Northern Territory estimates are not fully representative. The SAL excluded people living in remote and sparsely settled parts of Australia and in the Northern Territory such regions account for over 20% of the population.

## 1.9 SKILL LEVEL, By State or Territory of Usual Residence

	Level 1	Level 2	Level 3	Level 4/5	Total
State or Territory of usual residence	%	%	%	%	'000
PROSE SCALE					
New South Wales	22.2	28.6	33.4	15.9	4 497.1
Victoria	21.7	26.1	35.6	16.6	3 329.0
Queensland	16.3	28.1	37.1	18.6	2 385.4
South Australia	18.1	24.9	36.4	20.7	1 070.9
Western Australia	16.1	28.9	34.9	20.1	1 270.3
Tasmania	19.2	29.0	38.0	13.7	340.5
Northern Territory	*10.2	30.6	42.7	16.5	102.6
Australian Capital Territory	12.1	19.6	41.1	27.3	225.0
<b>Australia</b>	<b>19.7</b>	<b>27.5</b>	<b>35.3</b>	<b>17.5</b>	<b>13 220.8</b>

DOCUMENT SCALE					
New South Wales	22.0	28.1	36.2	13.7	4 497.1
Victoria	22.0	26.3	35.7	16.0	3 329.0
Queensland	15.0	30.7	36.4	17.9	2 385.4
South Australia	17.9	27.4	36.3	18.4	1 070.9
Western Australia	15.9	30.4	35.7	18.0	1 270.3
Tasmania	20.6	32.7	34.5	12.3	340.5
Northern Territory	13.0	27.2	38.8	21.1	102.6
Australian Capital Territory	10.7	20.5	40.6	28.2	225.0
<b>Australia</b>	<b>19.5</b>	<b>28.3</b>	<b>36.1</b>	<b>16.1</b>	<b>13 220.8</b>

QUANTITATIVE SCALE					
New South Wales	21.1	27.2	35.6	16.1	4 497.1
Victoria	21.2	26.7	35.2	16.9	3 329.0
Queensland	16.4	27.4	37.1	19.0	2 385.4
South Australia	16.5	27.8	36.1	19.5	1 070.9
Western Australia	15.9	26.9	37.5	19.6	1 270.3
Tasmania	19.7	32.7	33.7	13.8	340.5
Northern Territory	*11.9	27.2	38.8	22.1	102.6
Australian Capital Territory	12.5	20.6	38.1	28.8	225.0
<b>Australia</b>	<b>19.2</b>	<b>27.2</b>	<b>36.0</b>	<b>17.7</b>	<b>13 220.8</b>

## INTERNATIONAL COMPARISONS

Australia participated in the second round of the International Adult Literacy Survey (IALS) in 1996, along with New Zealand, the United Kingdom, and Belgium (Flemish-speaking). Pending the availability of results from these countries, the following table compares the skill level distributions for Australia with those of the other countries that participated in the first round of the IALS in 1994.

To enable valid comparisons across countries, the following table is restricted to people aged 16–65 and consequently the estimates in this table will differ from others in this publication.

**1.10 INTERNATIONAL COMPARISONS(a), People Aged 16–65**

	Level 1	Level 2	Level 3	Level 4/5
Country	%	%	%	%
PROSE SCALE				
Australia	17.0	27.1	36.9	18.9
Canada(b)	16.6	25.6	35.1	22.7
Germany	14.4	34.2	38.0	13.4
Netherlands	10.5	30.1	44.1	15.3
Poland	42.6	34.5	19.8	3.1
Sweden	7.5	20.3	39.7	32.4
Switzerland (French)	17.6	33.7	38.6	10.0
Switzerland (German)	19.3	35.7	36.1	8.9
United States of America	20.7	25.9	32.4	21.1
DOCUMENT SCALE				
Australia	17.0	27.8	37.7	17.4
Canada(b)	18.2	24.7	32.1	25.1
Germany	9.0	32.7	39.5	18.9
Netherlands	10.1	25.7	44.2	20.0
Poland	45.4	30.7	18.0	5.8
Sweden	6.2	18.9	39.4	35.5
Switzerland (French)	16.2	28.8	38.9	16.0
Switzerland (German)	18.1	29.1	36.6	16.1
United States of America	23.7	25.9	31.4	19.0
QUANTITATIVE SCALE				
Australia	16.8	26.5	37.7	19.1
Canada(b)	16.9	26.1	34.8	22.2
Germany	6.7	26.6	43.2	23.5
Netherlands	10.3	25.5	44.3	19.9
Poland	39.1	30.1	23.9	6.8
Sweden	6.6	18.6	39.0	35.8
Switzerland (French)	12.9	24.5	42.2	20.4
Switzerland (German)	14.2	26.2	40.7	19.0
United States of America	21.0	25.3	31.3	22.5

(a) OECD 1995.

(b) Combined results for English and French languages.

## 1.11 SKILL LEVEL, By Sex and Age

Sex by age (years)	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
PROSE SCALE										
Males										
15-19	121.8	19.6	184.5	29.6	232.3	37.3	83.7	13.4	622.3	100.0
20-24	77.8	11.2	223.5	32.3	259.9	37.5	131.9	19.0	693.1	100.0
25-34	189.2	13.5	391.6	27.9	534.1	38.0	288.9	20.6	1 403.8	100.0
35-44	216.4	15.8	346.1	25.3	551.4	40.2	256.7	18.7	1 370.6	100.0
45-54	252.5	21.8	309.7	26.7	413.4	35.6	185.0	15.9	1 160.6	100.0
55-64	244.0	32.0	237.9	31.2	201.3	26.4	79.0	10.4	762.0	100.0
65-74	278.7	46.9	165.5	27.8	119.4	20.1	*31.1	*5.2	594.7	100.0
<b>Total</b>	<b>1 380.3</b>	<b>20.9</b>	<b>1 858.8</b>	<b>28.1</b>	<b>2 311.9</b>	<b>35.0</b>	<b>1 056.3</b>	<b>16.0</b>	<b>6 607.2</b>	<b>100.0</b>
Females										
15-19	57.6	9.7	184.5	31.1	254.0	42.8	97.2	16.4	593.3	100.0
20-24	52.6	7.8	145.9	21.6	313.0	46.4	163.4	24.2	674.9	100.0
25-34	146.9	10.4	371.4	26.3	539.4	38.2	354.2	25.1	1 411.9	100.0
35-44	179.8	13.0	298.5	21.5	565.0	40.7	345.1	24.9	1 388.4	100.0
45-54	250.4	22.1	296.8	26.2	364.8	32.2	221.0	19.5	1 133.0	100.0
55-64	242.4	32.3	267.3	35.6	185.7	24.7	56.0	7.5	751.4	100.0
65-74	297.3	45.0	208.7	31.6	135.2	20.5	*19.3	*2.9	660.6	100.0
<b>Total</b>	<b>1 227.0</b>	<b>18.6</b>	<b>1 773.1</b>	<b>26.8</b>	<b>2 357.1</b>	<b>35.6</b>	<b>1 256.3</b>	<b>19.0</b>	<b>6 613.5</b>	<b>100.0</b>
Persons										
15-19	179.5	14.8	369.0	30.4	486.2	40.0	180.9	14.9	1 215.6	100.0
20-24	130.4	9.5	369.4	27.0	572.9	41.9	295.3	21.6	1 368.0	100.0
25-34	336.0	11.9	763.0	27.1	1 073.5	38.1	643.1	22.8	2 815.7	100.0
35-44	396.2	14.4	644.6	23.4	1 116.4	40.5	601.8	21.8	2 759.0	100.0
45-54	502.9	21.9	606.5	26.4	778.2	33.9	406.0	17.7	2 293.6	100.0
55-64	486.4	32.1	505.2	33.4	387.1	25.6	135.0	8.9	1 513.7	100.0
65-74	576.0	45.9	374.2	29.8	254.6	20.3	50.4	4.0	1 255.2	100.0
<b>Total</b>	<b>2 607.4</b>	<b>19.7</b>	<b>3 631.9</b>	<b>27.5</b>	<b>4 668.9</b>	<b>35.3</b>	<b>2 312.5</b>	<b>17.5</b>	<b>13 220.8</b>	<b>100.0</b>
DOCUMENT SCALE										
Males										
15-19	82.2	13.2	196.8	31.6	246.3	39.6	97.0	15.6	622.3	100.0
20-24	63.3	9.1	191.8	27.7	287.1	41.4	150.8	21.8	693.1	100.0
25-34	160.2	11.4	376.1	26.8	563.3	40.1	304.1	21.7	1 434.3	100.0
35-44	210.6	15.4	306.0	22.3	539.5	39.4	314.5	22.9	1 370.6	100.0
45-54	230.2	19.8	294.4	25.4	411.7	35.5	224.3	19.3	1 160.6	100.0
55-64	230.8	30.3	218.8	28.7	240.5	31.6	72.1	9.5	782.0	100.0
65-74	246.9	41.5	191.2	32.2	124.9	21.0	*31.6	*5.3	594.7	100.0
<b>Total</b>	<b>1 224.3</b>	<b>18.5</b>	<b>1 775.3</b>	<b>26.9</b>	<b>2 413.3</b>	<b>36.5</b>	<b>1 194.3</b>	<b>18.1</b>	<b>6 607.2</b>	<b>100.0</b>
Females										
15-19	63.6	10.7	201.6	34.0	247.9	41.8	80.1	13.5	593.3	100.0
20-24	60.2	8.9	163.7	24.3	309.8	45.9	141.2	20.9	674.9	100.0
25-34	170.4	12.1	391.6	27.7	586.9	41.6	263.0	18.6	1 411.9	100.0
35-44	193.5	13.9	376.2	27.1	552.6	39.8	266.1	19.2	1 388.4	100.0
45-54	266.8	23.5	332.0	29.3	394.8	34.8	139.4	12.3	1 133.0	100.0
55-64	280.0	37.3	286.8	38.2	146.8	19.5	37.8	5.0	751.4	100.0
65-74	321.4	48.7	211.0	31.9	122.1	18.5	*6.0	*0.9	660.6	100.0
<b>Total</b>	<b>1 356.0</b>	<b>20.5</b>	<b>1 963.0</b>	<b>29.7</b>	<b>2 360.8</b>	<b>35.7</b>	<b>933.7</b>	<b>14.1</b>	<b>6 613.5</b>	<b>100.0</b>
Persons										
15-19	145.8	12.0	398.5	32.8	494.2	40.7	177.1	14.6	1 215.6	100.0
20-24	123.6	9.0	355.6	26.0	596.9	43.6	292.0	21.3	1 368.0	100.0
25-34	330.6	11.7	767.7	27.3	1 150.2	40.8	567.2	20.1	2 815.7	100.0
35-44	404.1	14.6	682.2	24.7	1 092.1	39.6	580.6	21.0	2 759.0	100.0
45-54	497.0	21.7	626.4	27.3	806.5	35.2	363.7	15.9	2 293.6	100.0
55-64	51.8	33.7	505.7	33.4	387.3	25.6	109.9	7.3	1 513.7	100.0
65-74	568.3	45.3	402.2	32.0	247.0	19.7	37.7	3.0	1 255.2	100.0
<b>Total</b>	<b>2 580.3</b>	<b>19.5</b>	<b>3 738.3</b>	<b>28.3</b>	<b>4 774.2</b>	<b>36.1</b>	<b>2 128.0</b>	<b>16.1</b>	<b>13 220.8</b>	<b>100.0</b>



1.11 SKILL LEVEL, By Sex and Age *continued*

Sex by age (years)	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
QUANTITATIVE SCALE										
Males										
15-19	97.7	15.7	204.8	32.9	226.3	36.4	93.5	15.0	622.3	100.0
20-24	72.0	10.4	170.7	24.6	294.1	42.4	156.4	22.6	693.1	100.0
25-34	159.0	11.3	325.2	23.2	573.0	40.8	346.5	24.7	1 437.6	100.0
35-44	186.4	13.6	274.3	20.0	514.9	37.6	395.0	28.8	1 370.6	100.0
45-54	208.1	17.9	236.6	20.4	443.1	38.2	272.8	23.5	1 160.6	100.0
55-64	200.6	26.3	205.2	26.9	237.5	31.2	119.0	15.6	7 862.0	100.0
65-74	220.9	37.2	188.3	31.7	10.9	23.7	44.5	7.5	594.7	100.0
<b>Total</b>	<b>1 144.7</b>	<b>17.3</b>	<b>1 605.2</b>	<b>24.3</b>	<b>2 429.7</b>	<b>36.8</b>	<b>1 427.8</b>	<b>21.6</b>	<b>6 607.2</b>	<b>100.0</b>
Females										
15-19	101.7	17.1	221.9	37.4	220.7	37.2	49.1	8.3	593.3	100.0
20-24	75.5	11.2	194.5	28.8	286.1	42.4	118.8	17.6	674.9	100.0
25-34	192.7	13.6	371.2	26.3	603.5	42.7	244.6	17.3	1 411.9	100.0
35-44	204.0	14.7	370.6	26.7	552.1	39.8	261.7	18.9	1 388.4	100.0
45-54	255.6	22.6	335.1	29.6	376.1	33.2	166.3	14.7	1 133.0	100.0
55-64	258.4	34.4	271.9	36.2	170.3	22.7	50.9	6.8	751.4	100.0
65-74	299.3	45.3	220.6	33.4	125.6	19.0	*15.0	*2.3	660.6	100.0
<b>Total</b>	<b>1 387.1</b>	<b>21.0</b>	<b>1 985.6</b>	<b>30.0</b>	<b>2 334.3</b>	<b>35.3</b>	<b>906.5</b>	<b>13.7</b>	<b>6 613.5</b>	<b>100.0</b>
Persons										
15-19	199.4	16.4	426.7	35.1	446.9	36.8	142.6	11.7	1 215.6	100.0
20-24	147.5	10.8	365.2	26.7	580.1	42.4	275.2	20.1	1 368.0	100.0
25-34	351.6	12.5	696.4	24.7	1 176.6	41.8	591.1	21.0	2 815.7	100.0
35-44	390.4	14.1	644.9	23.4	1 066.9	38.7	656.7	23.8	2 759.0	100.0
45-54	463.7	20.2	571.7	24.9	819.2	35.7	439.1	19.1	2 293.6	100.0
55-64	459.0	30.3	477.1	31.5	407.7	26.9	169.9	11.2	1 513.7	100.0
65-74	520.3	41.4	408.9	32.6	266.5	21.2	59.6	4.7	1 255.2	100.0
<b>Total</b>	<b>2 531.8</b>	<b>19.2</b>	<b>3 590.8</b>	<b>27.2</b>	<b>4 764.0</b>	<b>36.0</b>	<b>2 334.2</b>	<b>17.7</b>	<b>13 220.8</b>	<b>100.0</b>

## 1.12 SELF-RATING, By Skill Level

Skill level	Excellent.....		Good.....		Moderate.....		Poor.....		Total(a).....	
	'000	%	'000	%	'000	%	'000	%	'000	%
<b>READING SKILLS</b>										
Prose scale										
Level 1	356.7	5.3	1 054.0	22.7	699.4	51.4	4 653.0	91.8	2 607.4	19.7
Level 2	1 479.8	22.2	1 673.5	36.0	445.5	32.8	*30.9	*6.1	3 631.9	27.5
Level 3	2 947.9	44.2	1 522.2	32.8	186.3	13.7	*10.5	*2.1	4 668.9	35.3
Level 4/5	1 890.4	28.3	393.7	8.5	*28.4	*2.1	–	–	2 312.5	17.5
<b>Total</b>	<b>6 674.8</b>	<b>100.0</b>	<b>4 643.5</b>	<b>100.0</b>	<b>1 359.7</b>	<b>100.0</b>	<b>506.4</b>	<b>100.0</b>	<b>13 220.8</b>	<b>100.0</b>
<b>MATHEMATICAL SKILLS</b>										
Quantitative scale										
Level 1	244.0	5.1	972.7	17.2	921.2	40.4	378.7	78.7	2 531.8	19.2
Level 2	837.9	17.5	1 847.9	32.6	829.0	36.4	72.7	15.1	3 590.8	27.2
Level 3	2 100.0	44.0	2 173.9	38.4	464.3	20.4	*25.8	*5.4	4 764.0	36.0
Level 4/5	1 596.1	33.4	668.1	11.8	66.0	2.9	*4.1	*0.9	2 334.2	17.7
<b>Total</b>	<b>4 778.0</b>	<b>100.0</b>	<b>5 662.6</b>	<b>100.0</b>	<b>2 280.5</b>	<b>100.0</b>	<b>481.4</b>	<b>100.0</b>	<b>13 220.8</b>	<b>100.0</b>

(a) Includes people who had no opinion.

This chapter explores the relationship between literacy skill levels and factors such as educational attainment, parents' educational attainment, and the number of schools attended before the age of 15.

## EDUCATIONAL ATTAINMENT

Educational attainment is one of the strongest predictors of literacy, and is sometimes used as a surrogate indicator when objective literacy assessments are not available (Organisation for Economic Cooperation and Development 1992). While there is a strong relationship between educational attainment and literacy skills, this connection is not without exceptions — some people with little formal education have literacy skills at a very high level, and an extensive education does not guarantee high level literacy skill.

### Prose literacy

Most people with no formal schooling were at Level 1 on the prose scale (95% or 43,000).

Of people who attended school but did not complete the highest level of secondary school 35% were at Level 1, and 34% were at Level 2.

Relatively large proportions of people with bachelor degrees (44%) or postgraduate qualifications (55%) were at Level 4/5. However, some people in these educational categories were at lower skill levels: 10% of people with a postgraduate diploma or higher degree and 13% of people with a bachelor degree were at Level 2 (there may be other important factors in these results, such as age and whether English was the first language spoken).

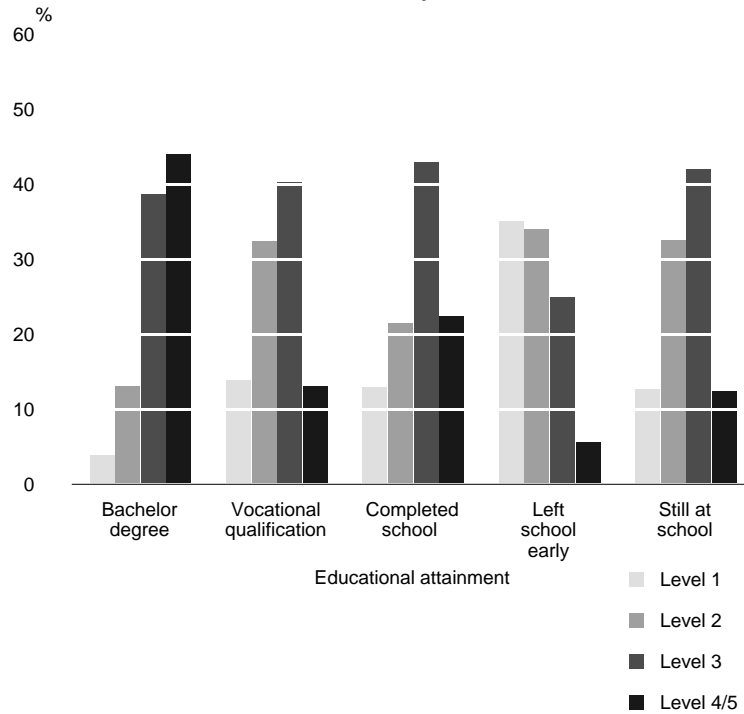
Within most other educational attainment groups, Level 3 was the largest category, comprising:

- 40% of people with vocational qualifications;
- 43% of people who had completed the highest level of secondary school available but obtained no post-school qualification (subsequently referred to as 'completed school');
- 45% of undergraduate or associate diploma holders; and
- 42% of people still attending school.

In general, larger proportions of people with post-school qualifications were at higher skill levels, compared with people without post-school qualifications. However, larger proportions of people who had completed only the highest level of secondary school were at Level 4/5 (22%), compared with people with vocational post-school qualifications (13%). This may be due to vocational qualifications being the only type of post-school qualification not requiring the completion of the highest level of secondary school as a prerequisite.

People still attending school were more heavily concentrated at Levels 2 and 3 (33% and 42% respectively), and less spread into the extremes (13% at Level 1 and 12% at Level 4/5) than the general population. This may be because people with very low prose skills are more likely to leave school early. Those who remain at school are likely to be still developing their skills, which may account for the smaller proportion at Level 4/5.

**2.1 PROPORTION AT EACH SKILL LEVEL, By Education — Prose Scale**



**Document literacy**

The pattern for document skills was similar to that for prose, though the proportions of people at Level 4/5 were somewhat smaller across most educational attainment categories. Of people with undergraduate or associate diplomas, 22% were at Level 4/5 on the document scale, compared with 27% on the prose scale.

On the document scale, Level 3 was the largest category for five of the eight educational attainment groups. The exceptions were postgraduate qualification holders, with 54% at Level 4/5; people who left school early, with 36% at Level 1 and the same proportion at Level 2; and people with no schooling, almost all of whom were at Level 1 (96%).

The pattern for quantitative skills was very similar to the pattern for prose skills.

## AGE AND EDUCATIONAL ATTAINMENT

Compared to older people, a larger proportion of people aged 15–24 had completed school. Of 15–24 year olds who were not currently attending school, 28% left school before completion, compared with 34% of people aged 25–54, and 51% of people aged 55–74.

It is difficult to analyse the relationship between skill levels, educational attainment and age because many younger people are still at school or studying at a tertiary institution. To account for this, the following analyses are restricted to those people who had completed the highest level of secondary school or a post-school qualification; and a sub-group containing those who had completed a degree or higher qualification.

## Completed highest level of secondary school or a post-school qualification

In general, among people who had completed the highest level of secondary school or a post-school qualification, larger proportions of older people were at low skill levels, while the proportions of people at high skill levels were similar for those aged 15–24 and 25–54, but lower for those aged 55–74.

When comparing the skill levels of people in different age groups who had completed the highest level of secondary school or a post-school qualification, smaller proportions of people aged 15–24 had Level 1 skills compared to their older counterparts. For example, 5% of 15–24 year olds in this educational attainment category had prose skills at Level 1, compared with 9% of 25–54 year olds and 23% of people aged 55–74.

On the document scale, the pattern was similar: approximately 4% of 15–24 year olds in this education category had Level 1 skills, compared with 8% of 25–54 year olds and 23% of 55–74 year olds.

Of 15–24 year olds who had completed the highest level of secondary school or a post-school qualification, approximately 6% had quantitative skills at Level 1. Among 25–54 year olds in this category, 8% had Level 1 skills, while 20% of 55–74 year olds had Level 1 skills.

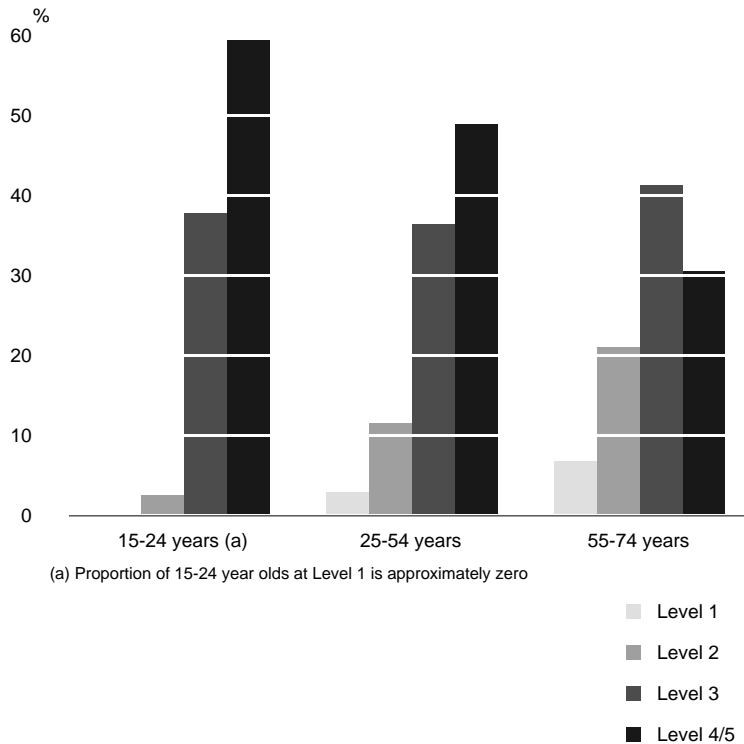
Similar proportions of 15–24 year olds and 25–54 year olds who had completed the highest level of secondary school or obtained a post-school qualification had Level 4/5 prose skills and similar proportions in each age group also had Level 4/5 document skills. However, a higher proportion of 25–54 year olds had Level 4/5 quantitative skills compared with the 15–24 year age group (29% and 22% respectively).

## Completed a degree or higher qualification

Among people who had completed a degree or higher qualification, the proportion at Level 4/5 on each scale decreased as age increased. On the prose scale, 60% of 15–24 year olds who had completed a degree or higher qualification were at Level 4/5, compared with 49% of 25–54 year olds and 31% of people aged 55–74. On the document scale, 54% of 15–24 year olds in this educational attainment category were at Level 4/5, compared with 47% of people aged 25–54 and 27% of people aged 55–74.

On the quantitative scale, the proportion of 15–24 year olds who had completed a degree or higher qualification who were at Level 4/5 was 53%, compared with 48% of 25–54 year olds and 35% of people aged 55–74 in the same educational attainment category.

**2.2 COMPLETED DEGREE/HIGHER, Proportion at Each Level – Prose Scale**



**NUMBER OF SCHOOLS ATTENDED BEFORE THE AGE OF 15**

The number of schools attended has been thought by education practitioners and researchers to be related to achievement in school: the more schools attended, the more disruption to education, resulting in lower literacy skills (Dymock 1985). This was not reflected in people's own perceptions of their skills (ABS 1997), nor did it appear to be the case for objectively assessed skill levels.

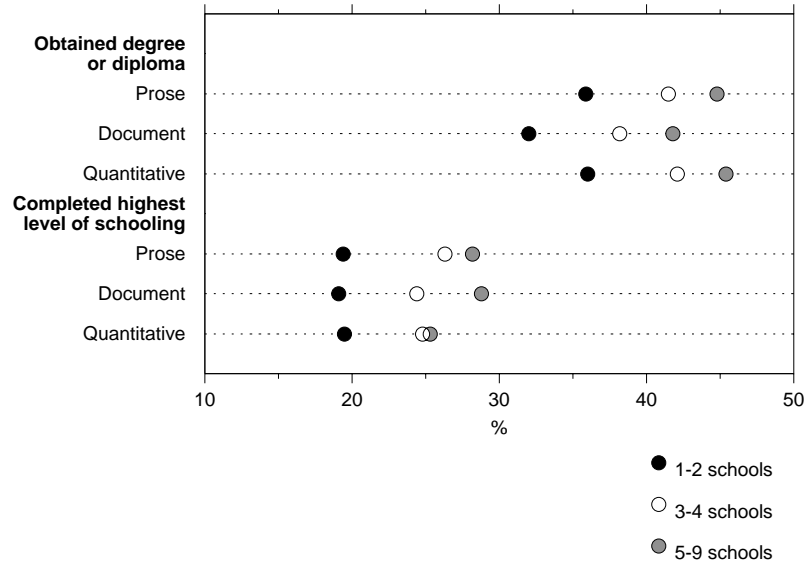
In general, as the number of schools attended before the age of 15 increased, the proportion of people at Level 1 decreased, and the proportion at Level 4/5 increased.

Some of this difference may be attributed to people who left school early being more likely to have attended fewer schools. For example, of people who attended one or two schools, 9% had less than eight years of education, compared with 3% of those who attended three to four schools, and 5% of people who attended five to nine schools. Compared with the rest of the population, a greater proportion of people with less than eight years of education were at low skill levels: of the 922,000 people with less than eight years of education, about three-quarters had Level 1 skills on each of the three literacy scales. The proportion of people with Level 1 skills dropped to less than a quarter among people with eight to eleven years of education (22% for prose, 23% for document and 22% for quantitative), and continued to decrease with increasing years of education.

However, even when considering only those people who had completed at least the highest level of secondary school, there was a rise in the proportion at Level 4/5 as the number of schools attended increased.

These results suggest that attending a large number of schools before the age of 15 does not necessarily result in lower literacy skill levels. However, there may be other important factors related to the number of schools attended before the age of 15 (for example, parents' occupations and educational attainment levels) which may be related to skill levels.

**2.3 PROPORTION AT LEVEL 4/5, By Schools Attended Before Age 15**



**REASON FOR LEAVING SCHOOL EARLY**

There is a relationship between certain reasons for leaving school early and poor literacy skills. For example, 63% (97,600) of people who left school early because school was not available or not accessible were at Level 1 on the prose scale, and 58% (50,500) of those who left school early because of personal illness or disability were at Level 1 on the prose scale. However, the unavailability of school and personal illness or disability were less commonly reported reasons for leaving school early.

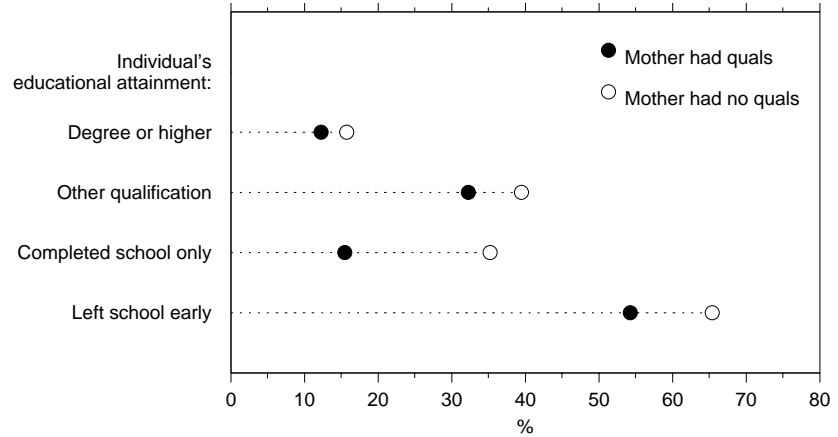
Among those reasons reported by larger proportions of people who left school early, 48% of people (426,000) who left school because they needed to work or for financial reasons were at Level 1 on the prose scale, and a similar proportion of people who left for family reasons were at this level (49% or 221,000). Of those who left because they were bored with school, did not like school, or did not do well at school, 35% (226,000) had Level 1 prose skills, and 22% (377,000) of those who left because they wanted to work or learn a trade had prose skills at this level.

**PARENTS' EDUCATIONAL ATTAINMENT**

While there was a relationship between people's literacy skills and their own level of educational attainment, there was also a relationship between people's literacy skills and their parents' education levels.

For example, greater proportions of people whose mothers had no post-school qualifications had Level 1 and 2 document skills compared with people whose mothers held a qualification (including vocational qualifications), irrespective of their own educational attainment categories. This was also generally true for prose and quantitative skills, and for father's educational attainment across the three scales. However, the difference was smaller where the individual's educational attainment level was high.

#### 2.4 PROPORTION AT LEVELS 1 AND 2, By Mother's Education — Prose Scale





## 2.5 SKILL LEVEL, By Educational Attainment

Highest level of educational attainment	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
PROSE SCALE										
Postgraduate diploma/higher degree	*10.8	*1.9	54.2	9.7	189.9	33.9	305.4	54.5	560.4	100.0
Bachelor degree	41.7	3.9	141.7	13.2	417.9	38.8	475.1	44.1	1 076.4	100.0
Undergraduate/associate diploma	106.0	8.4	249.3	19.8	567.3	45.1	335.0	26.6	1 257.6	100.0
Vocational qualifications	409.5	13.9	957.8	32.5	1 191.7	40.4	390.3	13.2	2 949.3	100.0
Completed highest level of secondary school available	274.3	13.0	451.3	21.5	905.0	43.0	472.3	22.5	2 102.8	100.0
Did not complete highest level of secondary school available	1 654.7	35.2	1 602.0	34.1	1 174.1	25.0	268.4	5.7	4 699.1	100.0
Still at school	67.5	12.7	173.2	32.7	223.0	42.1	66.1	12.5	529.9	100.0
No schooling	42.9	94.5	*2.5	*5.5	–	–	–	–	45.4	100.0
<b>Total persons</b>	<b>2 607.4</b>	<b>19.7</b>	<b>3 631.9</b>	<b>27.5</b>	<b>4 668.9</b>	<b>35.3</b>	<b>2 312.5</b>	<b>17.5</b>	<b>13 220.8</b>	<b>100.0</b>
DOCUMENT SCALE										
Postgraduate diploma/higher degree	*9.2	*1.6	39.7	7.1	209.2	37.3	302.3	53.9	560.4	100.0
Bachelor degree	38.4	3.6	116.1	10.8	488.4	45.4	433.5	40.3	1 076.4	100.0
Undergraduate/associate diploma	111.7	8.9	283.1	22.5	590.4	46.9	272.3	21.7	1 257.6	100.0
Vocational qualifications	396.9	13.5	962.4	32.6	1 211.9	41.1	378.0	12.8	2 949.3	100.0
Completed highest level of secondary school available	229.1	10.9	495.2	23.5	923.6	43.9	454.9	21.6	2 102.8	100.0
Did not complete highest level of secondary school available	1 700.6	36.2	1 686.8	35.9	1 086.5	23.1	225.1	4.8	4 699.1	100.0
Still at school	50.8	9.6	153.0	28.9	264.1	49.8	61.9	11.7	529.9	100.0
No schooling	43.5	95.9	*1.9	*4.1	–	–	–	–	45.4	100.0
<b>Total persons</b>	<b>2 580.3</b>	<b>19.5</b>	<b>3 738.3</b>	<b>28.3</b>	<b>4 774.2</b>	<b>36.1</b>	<b>2 128.0</b>	<b>16.1</b>	<b>13 220.8</b>	<b>100.0</b>
QUANTITATIVE SCALE										
Postgraduate diploma/higher degree	*7.5	*1.3	42.6	7.6	198.3	35.4	312.0	55.7	560.4	100.0
Bachelor degree	*24.3	*2.3	128.7	12.0	472.3	43.9	451.1	41.9	1 076.4	100.0
Undergraduate/associate diploma	105.7	8.4	243.9	19.4	549.0	43.7	359.0	28.5	1 257.6	100.0
Vocational qualifications	388.1	13.2	863.4	29.3	1 267.2	43.0	430.6	14.6	2 949.3	100.0
Completed highest level of secondary school available	225.0	10.7	518.4	24.7	903.7	43.0	455.8	21.7	2 102.8	100.0
Did not complete highest level of secondary school available	1 658.3	35.3	1 621.3	34.5	1 148.0	24.4	271.5	5.8	4 699.1	100.0
Still at school	81.5	15.4	168.5	31.8	225.6	42.6	54.3	10.2	529.9	100.0
No schooling	41.5	91.5	*3.9	*8.5	–	–	–	–	45.4	100.0
<b>Total persons</b>	<b>2 531.8</b>	<b>19.2</b>	<b>3 590.8</b>	<b>27.2</b>	<b>4 764.0</b>	<b>36.0</b>	<b>2 334.2</b>	<b>17.7</b>	<b>13 220.8</b>	<b>100.0</b>

2.6 SKILL LEVEL, By Selected Reasons for Leaving School Early

Reason for leaving school early	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
PROSE SCALE										
School not available or not accessible	97.6	63.5	*27.6	*17.9	*24.9	*16.2	*3.7	*2.4	<b>153.9</b>	100.0
Personal illness or disability	50.5	58.2	*13.9	*16.1	*17.8	*20.5	*4.5	*5.2	<b>86.7</b>	100.0
Had to work or financial reasons	426.2	48.2	268.3	30.3	161.5	18.3	*29.0	*3.3	<b>885.1</b>	100.0
Wanted to work or wanted to learn a trade	377.0	22.4	679.6	40.3	517.6	30.7	111.8	6.6	<b>1 685.9</b>	100.0
Had enough education	60.3	18.8	126.0	39.4	101.6	31.8	*31.8	*9.9	<b>319.7</b>	100.0
Family reasons	220.6	49.0	133.3	29.6	71.1	15.8	*24.9	*5.5	<b>449.9</b>	100.0
Did not like school/did not do well in school/boredom	226.0	34.7	238.6	36.6	157.6	24.2	*29.2	*4.5	<b>651.4</b>	100.0
DOCUMENT SCALE										
School not available or not accessible	100.1	65.0	36.4	23.7	*17.3	*11.3	–	–	<b>153.9</b>	100.0
Personal illness or disability	52.7	60.8	*17.4	*20.1	*13.8	*15.9	*2.8	*3.3	<b>86.7</b>	100.0
Had to work or financial reasons	441.9	49.9	285.2	32.2	128.0	14.5	*30.0	*3.4	<b>885.1</b>	100.0
Wanted to work or wanted to learn a trade	377.1	22.4	720.8	42.8	506.9	30.1	81.2	4.8	<b>1 685.9</b>	100.0
Had enough education	59.0	18.5	124.2	38.9	98.7	30.9	37.7	11.8	<b>319.7</b>	100.0
Family reasons	226.4	50.3	142.8	31.8	61.5	13.7	*19.2	*4.3	<b>449.9</b>	100.0
Did not like school/did not do well in school/boredom	250.3	38.4	226.4	34.8	150.4	23.1	*24.3	*3.7	<b>651.4</b>	100.0
QUANTITATIVE SCALE										
School not available or not accessible	89.0	57.9	42.9	27.9	*21.9	*14.3	–	–	<b>153.9</b>	100.0
Personal illness or disability	48.7	56.2	*23.3	*26.8	*11.9	*13.8	*2.8	3.3	<b>86.7</b>	100.0
Had to work or financial reasons	421.0	47.6	280.4	31.7	150.8	17.0	*32.9	*3.7	<b>885.1</b>	100.0
Wanted to work or wanted to learn a trade	389.9	23.1	650.1	38.6	530.8	31.5	115.1	6.8	<b>1 685.9</b>	100.0
Had enough education	57.8	18.1	110.6	34.6	108.6	34.0	42.7	13.4	<b>319.7</b>	100.0
Family reasons	219.0	48.7	147.8	32.8	66.5	14.8	*16.6	*3.7	<b>449.9</b>	100.0
Did not like school/did not do well in school/boredom	248.3	38.1	234.9	36.1	137.9	21.2	*30.3	*4.7	<b>651.4</b>	100.0

**2.7 SKILL LEVEL, By Number of Schools Attended Before the Age of 15**

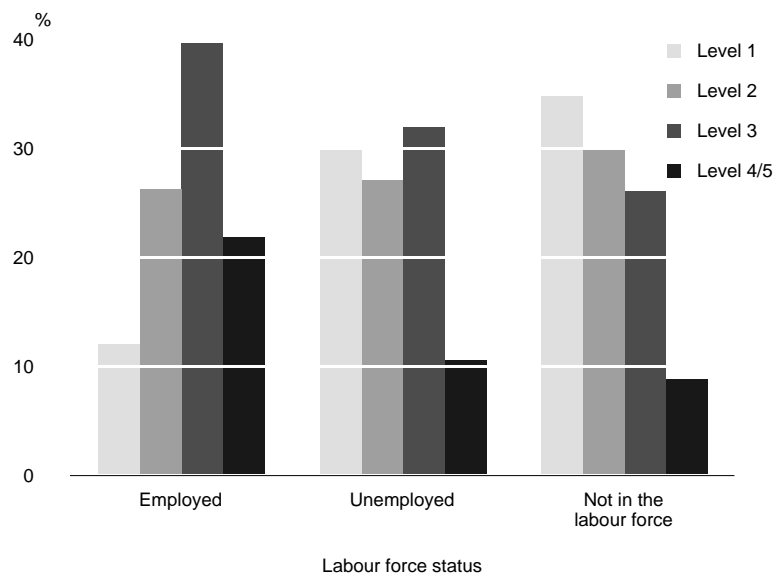
	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
<i>Schools attended before the age of 15</i>	'000	%	'000	%	'000	%	'000	%	'000	%
PROSE SCALE										
1-2 schools	1 817.6	23.2	2 163.9	27.7	2 606.1	33.3	1 230.0	15.7	<b>7 817.6</b>	100.0
3-4 schools	576.1	14.2	1 132.8	27.9	1 550.1	38.2	795.7	19.6	<b>4 054.6</b>	100.0
5-9 schools	138.1	12.0	293.4	25.6	458.0	39.9	257.8	22.5	<b>1 147.3</b>	100.0
DOCUMENT SCALE										
1-2 schools	1 814.3	23.2	2 184.4	27.9	2 712.7	34.7	1 106.2	14.2	<b>7 817.6</b>	100.0
3-4 schools	556.7	13.7	1 198.1	29.5	1 541.3	38.0	758.5	18.7	<b>4 054.6</b>	100.0
5-9 schools	133.4	11.6	305.8	26.7	462.5	40.3	245.5	21.4	<b>1 147.3</b>	100.0
QUANTITATIVE SCALE										
1-2 schools	1 733.1	22.2	2 118.0	27.1	2 732.3	35.0	1 234.3	15.8	<b>7 817.6</b>	100.0
3-4 schools	578.4	14.3	1 143.9	28.2	1 504.8	37.1	827.5	20.4	<b>4 054.6</b>	100.0
5-9 schools	140.9	12.3	289.7	25.3	467.4	40.7	249.3	21.7	<b>1 147.3</b>	100.0

Literacy skills play a major role in the workplace, and hence in our economy. Good literacy skills lead to a more flexible workforce that is better able to meet the demands of a changing society. As stated in *No Single Measure*, 'a successful economy needs the solid base of a literate and numerate workforce to be able to respond quickly and confidently to increasingly changing workplace demands' (Wickert and Kevin 1995). Poor literacy skills may prevent people from readily learning new skills and processes which may in turn lead to higher job turnover, higher production costs and lower productivity. This chapter focuses on the Australian workforce, and how people's literacy skills varied according to characteristics such as labour force status, industry and occupation.

LABOUR FORCE STATUS

The distribution of skill level by labour force status was similar across all three literacy scales. On the prose scale, the proportion of employed people at Level 4/5 (22%) was double that of unemployed people (11%) and about two and a half times the proportion of those not in the labour force (9%). The proportion of unemployed people at Level 1 (30%) and of those not in the labour force (35%) was almost three times that of employed people (12%).

**3.1 PROPORTION AT EACH LEVEL, By Labour Force Status — Prose Scale**



## EMPLOYED PEOPLE

## Industry

In the 17 broad industry groups the largest proportions of employed people were usually at Level 3. The exceptions to this were, on the prose scale, Education which had a larger proportion at Level 4/5, Construction which had a similar proportion at Level 2, and Communication services which had marginally larger proportions at Levels 2 and 4/5. Education had the largest proportion of employed people at Level 4/5, with 50% at this level on the prose scale, 44% at this level on the document scale, and 43% at this level on the quantitative scale. Depending on the scale, this was between 7 and 15 percentage points higher than any other industry. The industries with the largest proportions at Level 1 were Agriculture, forestry and fishing, Manufacturing, Electricity, gas and water supply, and Construction. In these industries the proportions at this level were 19% to 22% on the prose scale, 17% to 19% on the document scale, and 15% to 19% on the quantitative scale.

Most results in this publication are presented using skill levels 1 to 5 which represent groupings of scores on a continuum ranging from 0 to 500 (see Appendix A). In some cases, average or median scores are useful for comparing the literacy proficiency of different groups.

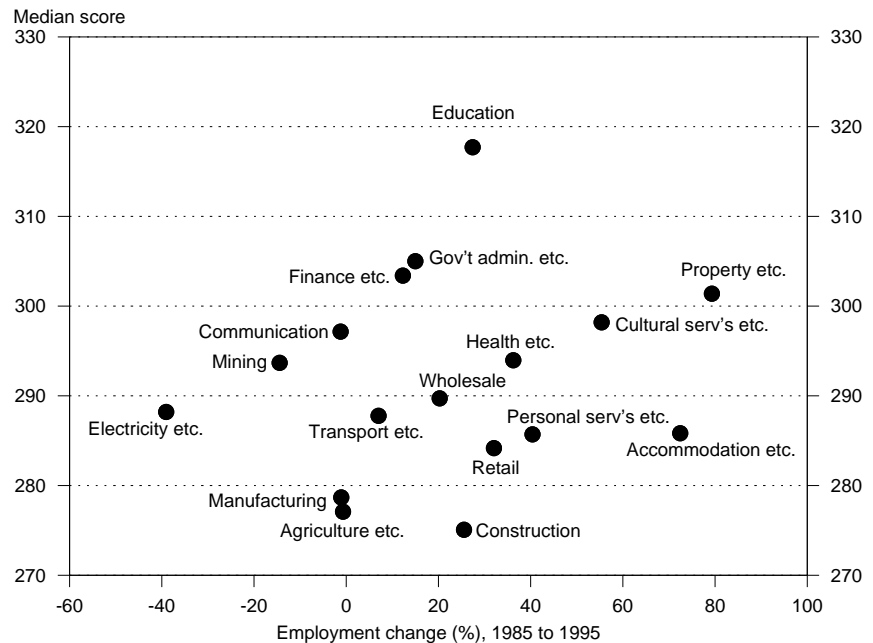
### 3.2 MEDIAN SCORE, By Industry

<i>Industry</i>	Prose scale	Document scale	Quantitative scale
Agriculture, forestry and fishing	274	277	283
Mining	305	294	303
Manufacturing	274	279	280
Electricity, gas and water supply	276	288	293
Construction	271	275	283
Wholesale trade	284	290	293
Retail trade	283	284	284
Accommodation, cafes and restaurants	284	286	280
Transport and storage	288	288	296
Communication services	291	297	304
Finance and insurance services	306	303	312
Property and business services	302	301	308
Government administration and defence	306	305	311
Education	326	318	317
Health and community services	305	294	293
Cultural and recreational services	296	298	301
Personal and other services	281	286	288
<b>Total employed</b>	<b>291</b>	<b>291</b>	<b>293</b>

The results from the first International Adult Literacy Survey showed that in industries with high employment growth between 1979 and 1990, workers had high levels of literacy skills, while in industries with low growth, workers had low skills (OECD 1995). In Australia, the relationship between growth and literacy skills from 1985 to 1995 was not so distinct. For example, on the document scale, Education, Government administration and defence and Finance and business services, had the highest median scores but a mid-range growth rate.

### 3.3 MEDIAN SCORE, By Employment Change, Industry(a) – Document Scale

(a) Full industry labels are shown in table 3.2.



### Occupation

On all three scales, Professionals had the largest proportion at Level 4/5, with about half at this level (52% on the prose scale, 47% on the document scale and 50% on the quantitative scale). Para-professionals had the second largest proportion at Level 4/5 but the proportions were much smaller than for Professionals, with 28% on the prose and quantitative scales, and 25% on the document scale. Generally, Professionals and Para-professionals also had the smallest proportions at Level 1. About one in four Labourers and related workers were at Level 1 (25% on the prose and document scales, and 24% on the quantitative scale), and Plant and machine operators and drivers had similar proportions at Level 1 (29% on the prose scale, 25% on the document scale and 22% on the quantitative scale).

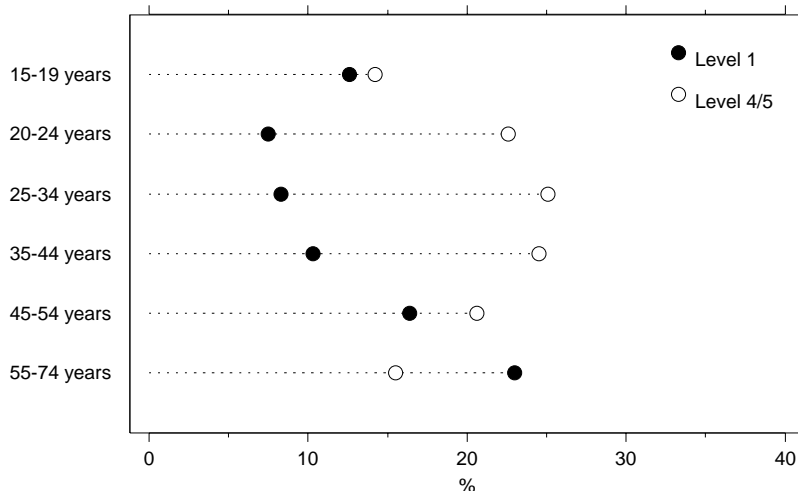
Some of these differences may be related to the frequency of literacy activities undertaken in the workplace. Occupations in which relatively large proportions of people performed literacy activities frequently were also those with the largest proportions of people at Level 4/5. Another reason for occupational differences in literacy skills may be educational attainment. Over 80% of Professionals had a degree, diploma or postgraduate qualification, compared with 10% of Plant and machine operators and drivers, and 7% of Labourers and related workers. In fact, more than half of those in the latter occupations did not complete the highest level of secondary school available (55% and 51% respectively).

### Age

When comparing the literacy skills of employed people across age groups, those aged 20–44 showed similar patterns for the three literacy scales. About 6% to 10% were at Level 1; Levels 2 and 4/5 ranged from 21% to 27%; and Level 3 contained by far the largest proportion (40% to 47%). The 15–19 year age group had a similar pattern but had larger proportions at Levels 1 and 2 and smaller proportions at Level 4/5.

As with the general population, the literacy skills of employed people tended to decrease with age. The largest proportion of people was usually at Level 3 and of the 20–44 year olds the proportion at Level 3 was 13 to 23 percentage points higher than the proportion at Level 2. This difference between Levels 2 and 3 decreased to 9 to 15 percentage points for 45–54 year olds and, on the prose scale, the 55–74 year age group had similar proportions at Level 2 and Level 3.

**3.4 PROPORTION OF EMPLOYED AT LEVELS 1 & 4/5, By Age — Prose Scale**



**Sex**

For each of the literacy scales, differences between the proportions of employed males and females at each level were quite small. However, females tended to have stronger prose skills than males, with 67% of employed females at Level 3 and above compared with 58% of males. The opposite was true for the quantitative scale, where 26% of males were at Level 4/5 compared with 19% of females.

**Full-time/part-time status**

When comparing employed people who worked full time with those who worked part time, the difference in the proportion at each skill level was less than 4 percentage points on both the prose and document scales. However, on the quantitative scale, 25% of full-time workers were at Level 4/5 compared with 17% of part-time workers. This difference may be due to the fact that nearly three-quarters (74%) of part-time workers were female and, on the quantitative scale, the proportion of females at Level 4/5 was smaller than for males.

**UNEMPLOYED PEOPLE**

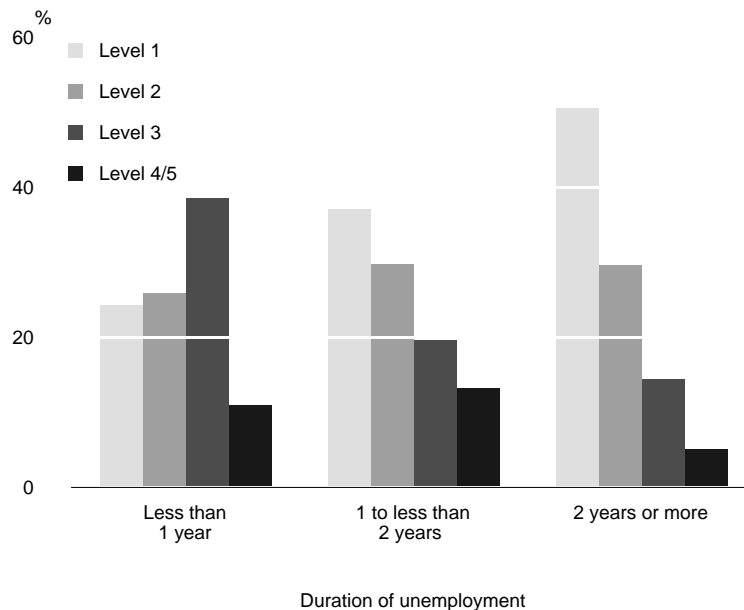
**Unemployment rate**

The unemployment rate as measured by the SAL varied by more than 10 percentage points across skill level. For example, on the document scale the unemployment rate for people at Level 1 was 17% and this dropped by more than half (to 8%) for people at Level 2, 5% for those at Level 3, and just 4% for people at Level 4/5. On all three scales the unemployment rate at Levels 1 and 2 was slightly higher for males than females (two to four percentage points).

### Duration of unemployment

The skill level of unemployed people varied with duration of unemployment. For example, on the prose scale the proportion of people at Level 1 increased as duration of unemployment increased. Nearly a quarter (24%) of people who had been unemployed for less than one year were at Level 1 but this proportion more than doubled (51%) for those who had been unemployed for two years or more. Document and quantitative scales showed a similar pattern.

#### 3.5 PROPORTION OF UNEMPLOYED AT EACH LEVEL, Duration — Prose Scale



### NOT IN THE LABOUR FORCE

The majority of people not in the labour force were at Levels 1 and 2. However, analysis showed that this pattern was not the same for all groups within this category.

#### Still studying

Of those not in the labour force, 14% were still studying. The skill levels of this group were similar to those of employed people.

#### Home duties

Over 30% of people not in the labour force were engaged in home duties. This group showed similar literacy skills to unemployed people with, depending on the scale, 59% to 66% at Levels 1 and 2, 27% to 29% at Level 3 and 7% to 12% at Level 4/5. Over half (58%) of people engaged in home duties were aged 25–44.

#### Retired

Of people aged 15–74 who were not in the labour force, 1,703,000 (44%) were retired. Depending on the scale, some 73% to 78% of retired people were at Levels 1 and 2, and no more than 5% were at Level 4/5. However, almost all (94%) of this group were aged 55–74 and, as mentioned in Chapter 1, the proportion of people at Level 1 generally increased with age. Both labour force status and age may be factors that contributed to the larger proportion of retired people at Level 1 compared with other groups.



## 3.6 SKILL LEVEL, By Labour Force Status

Labour force status	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
PROSE SCALE										
Employed	1 045.6	12.1	2 273.6	26.3	3 435.2	39.7	1 898.2	21.9	8 652.6	100.0
Unemployed	203.3	30.2	182.4	27.1	215.3	32.0	71.5	10.6	672.6	100.0
Not in the labour force	1 358.5	34.9	1 175.9	30.2	1 018.3	26.1	342.8	8.8	3 895.6	100.0
<b>Total</b>	<b>2 607.4</b>	<b>19.7</b>	<b>3 631.9</b>	<b>27.5</b>	<b>4 668.9</b>	<b>35.3</b>	<b>2 312.5</b>	<b>17.5</b>	<b>13 220.8</b>	<b>100.0</b>
DOCUMENT SCALE										
Employed	970.5	11.2	2 293.9	26.5	3 615.6	41.8	1 772.6	20.5	8 652.6	100.0
Unemployed	204.5	30.4	207.6	30.9	188.9	28.1	71.6	10.6	672.6	100.0
Not in the labour force	1 405.3	36.1	1 236.8	31.7	969.7	24.9	283.8	7.3	3 895.6	100.0
<b>Total</b>	<b>2 580.3</b>	<b>19.5</b>	<b>3 738.3</b>	<b>28.3</b>	<b>4 774.2</b>	<b>36.1</b>	<b>2 128.0</b>	<b>16.1</b>	<b>13 220.8</b>	<b>100.0</b>
QUANTITATIVE SCALE										
Employed	950.1	11.0	2 183.6	25.2	3 560.9	41.2	1 958.1	22.6	8 652.6	100.0
Unemployed	211.1	31.4	183.9	27.3	198.2	29.5	79.5	11.8	672.6	100.0
Not in the labour force	1 370.6	35.2	1 223.4	31.4	1 005.0	25.8	296.6	7.6	3 895.6	100.0
<b>Total</b>	<b>2 531.8</b>	<b>19.2</b>	<b>3 590.8</b>	<b>27.2</b>	<b>4 764.0</b>	<b>36.0</b>	<b>2 334.2</b>	<b>17.7</b>	<b>13 220.8</b>	<b>100.0</b>

## 3.7 SKILL LEVEL, By Industry

Industry	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
PROSE SCALE										
Agriculture, forestry and fishing	74.6	18.9	127.7	32.3	148.3	37.6	44.3	11.2	394.9	100.0
Mining	*5.1	*5.5	*24.2	*26.2	48.0	52.0	*15.1	*16.3	92.3	100.0
Manufacturing	250.6	21.7	352.9	30.6	376.1	32.6	173.3	15.0	1 153.0	100.0
Electricity, gas and water supply	*19.2	*21.5	*26.2	*29.3	33.1	*37.1	*10.7	*12.0	89.2	100.0
Construction	114.5	19.3	209.3	35.3	202.1	34.0	67.8	11.4	593.8	100.0
Wholesale trade	48.5	11.3	130.4	30.3	194.0	45.1	57.0	13.3	429.8	100.0
Retail trade	176.3	12.7	426.5	30.8	566.3	40.9	215.6	15.6	1 384.7	100.0
Accommodation, cafes and restaurants	51.2	13.9	113.5	30.9	162.6	44.2	40.5	11.0	367.8	100.0
Transport and storage	43.3	12.0	111.5	30.9	165.9	46.1	39.6	11.0	360.3	100.0
Communication services	*9.3	*6.0	50.7	32.8	45.9	29.7	48.6	31.5	154.5	100.0
Finance and insurance services	*9.5	*3.3	59.4	20.8	133.4	46.6	84.0	29.3	286.4	100.0
Property and business services	60.8	7.2	169.9	20.0	388.2	45.8	228.9	27.0	847.7	100.0
Government administration and defence	35.3	8.7	81.0	20.0	146.7	36.1	142.9	35.2	405.8	100.0
Education	*13.6	*2.1	49.0	7.5	266.6	40.6	326.9	49.8	656.1	100.0
Health and community services	65.1	7.6	189.3	22.1	348.0	40.6	255.4	29.8	857.7	100.0
Cultural and recreational services	*13.5	*6.2	47.1	21.7	99.0	45.6	57.4	26.4	217.0	100.0
Personal and other services	55.3	15.3	105.0	29.0	111.1	30.7	90.2	24.9	361.5	100.0
<b>Total employed</b>	<b>1 045.6</b>	<b>12.1</b>	<b>2 273.6</b>	<b>26.3</b>	<b>3 435.2</b>	<b>39.7</b>	<b>1 898.2</b>	<b>21.9</b>	<b>8 652.6</b>	<b>100.0</b>

3.7 SKILL LEVEL, By Industry *continued*

Industry	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
<b>DOCUMENT SCALE</b>										
Agriculture, forestry and fishing	70.7	17.9	121.7	30.8	149.9	38.0	52.6	13.3	394.9	100.0
Mining	*5.1	*5.5	*28.8	*31.2	38.5	41.7	*19.9	*21.5	92.3	100.0
Manufacturing	222.9	19.3	331.6	28.8	405.8	35.2	192.7	16.7	1 153.0	100.0
Electricity, gas and water supply	*16.8	*18.8	*22.8	*25.5	*33.2	*37.1	*16.5	*18.5	89.2	100.0
Construction	101.8	17.1	201.9	34.0	227.7	38.3	62.5	10.5	593.8	100.0
Wholesale trade	43.7	10.2	103.6	24.1	204.8	47.6	77.8	18.1	429.8	100.0
Retail trade	136.6	9.9	440.2	31.8	599.4	43.3	208.6	15.1	1 384.7	100.0
Accommodation, cafes and restaurants	56.6	15.4	110.3	30.0	171.9	46.8	*29.0	*7.9	367.8	100.0
Transport and storage	44.6	12.4	93.0	25.8	170.9	47.4	51.8	14.4	360.3	100.0
Communication services	*9.5	*6.1	47.2	30.5	52.7	34.1	45.1	29.2	154.5	100.0
Finance and insurance services	*6.4	*2.2	63.6	22.2	134.0	46.8	82.4	28.8	286.4	100.0
Property and business services	43.3	5.1	180.3	21.3	394.4	46.5	229.8	27.1	847.7	100.0
Government administration and defence	34.3	8.4	74.3	18.3	166.9	41.1	130.3	32.1	405.8	100.0
Education	*18.9	*2.9	89.1	13.6	259.8	39.6	288.2	43.9	656.1	100.0
Health and community services	80.1	9.3	239.9	28.0	371.5	43.3	166.2	19.4	857.7	100.0
Cultural and recreational services	*12.1	*5.6	52.7	24.3	101.6	46.8	50.5	23.3	217.0	100.0
Personal and other services	67.3	18.6	93.0	25.7	132.7	36.7	68.7	19.0	361.5	100.0
<b>Total employed</b>	<b>970.5</b>	<b>11.2</b>	<b>2 293.9</b>	<b>26.5</b>	<b>3 615.6</b>	<b>41.8</b>	<b>1 772.6</b>	<b>20.5</b>	<b>8 652.6</b>	<b>100.0</b>

**QUANTITATIVE SCALE**

Agriculture, forestry and fishing	73.9	18.7	102.8	26.0	152.8	38.7	65.4	16.6	394.9	100.0
Mining	*4.3	*4.6	*17.9	*19.4	42.3	45.8	*27.9	*30.2	92.3	100.0
Manufacturing	210.7	18.3	329.9	28.6	397.9	34.5	214.5	18.6	1 153.0	100.0
Electricity, gas and water supply	*15.6	*17.5	*22.9	*25.7	*32.2	*36.0	*18.5	*20.8	89.2	100.0
Construction	87.2	14.7	171.1	28.8	251.2	42.3	84.2	14.2	593.8	100.0
Wholesale trade	36.9	8.6	117.1	27.2	188.9	43.9	87.0	20.2	429.8	100.0
Retail trade	164.9	11.9	430.0	31.1	578.2	41.8	211.6	15.3	1 384.7	100.0
Accommodation, cafes and restaurants	53.3	14.5	119.6	32.5	161.8	44.0	*33.2	*9.0	367.8	100.0
Transport and storage	*22.4	*6.2	103.6	28.7	156.4	43.4	77.9	21.6	360.3	100.0
Communication services	*3.7	*2.4	37.2	24.1	72.3	46.8	41.3	26.7	154.5	100.0
Finance and insurance services	*6.4	*2.2	49.4	17.3	128.9	45.0	101.7	35.5	286.4	100.0
Property and business services	59.6	7.0	140.6	16.6	377.2	44.5	270.3	31.9	847.7	100.0
Government administration and defence	*26.9	*6.6	88.4	21.8	152.1	37.5	138.4	34.1	405.8	100.0
Education	*17.4	*2.7	92.8	14.1	263.8	40.2	282.1	43.0	656.1	100.0
Health and community services	83.6	9.7	215.7	25.2	380.2	44.3	178.2	20.8	857.7	100.0
Cultural and recreational services	*17.4	*8.0	49.1	22.6	100.9	46.5	49.5	22.8	217.0	100.0
Personal and other services	65.9	18.2	95.5	26.4	123.8	34.2	76.3	21.1	361.5	100.0
<b>Total employed</b>	<b>950.1</b>	<b>11.0</b>	<b>2 183.6</b>	<b>25.2</b>	<b>3 560.9</b>	<b>41.2</b>	<b>1 958.1</b>	<b>22.6</b>	<b>8 652.6</b>	<b>100.0</b>

## 3.8 SKILL LEVEL, By Occupation

Occupation	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
PROSE SCALE										
Managers and administrators	93.7	9.8	238.4	24.8	431.7	45.0	195.9	20.4	959.7	100.0
Professionals	*14.4	*1.2	137.2	11.2	442.0	35.9	636.8	51.8	1 230.4	100.0
Para-professionals	34.4	5.7	83.6	13.9	312.1	51.9	171.4	28.5	601.6	100.0
Tradespersons	219.0	17.9	467.1	38.2	408.7	33.4	127.6	10.4	1 222.4	100.0
Clerks	74.7	5.4	299.2	21.4	631.3	45.3	389.9	27.9	1 395.1	100.0
Salespersons and personal service workers	141.1	9.8	419.5	29.2	642.1	44.7	235.4	16.4	1 438.2	100.0
Plant and machine operators, and drivers	153.4	29.3	189.3	36.2	152.8	29.2	*28.1	*5.4	523.6	100.0
Labourers and related workers	314.9	24.6	439.3	34.3	414.5	32.3	113.0	8.8	1 281.7	100.0
<b>Total employed</b>	<b>1 045.6</b>	<b>12.1</b>	<b>2 273.6</b>	<b>26.3</b>	<b>3 435.2</b>	<b>39.7</b>	<b>1 898.2</b>	<b>21.9</b>	<b>8 652.6</b>	<b>100.0</b>
DOCUMENT SCALE										
Managers and administrators	85.3	8.9	206.9	21.6	440.5	45.9	226.9	23.6	959.7	100.0
Professionals	*20.3	*1.6	121.7	9.9	507.9	41.3	580.7	47.2	1 230.4	100.0
Para-professionals	*27.9	*4.6	95.2	15.8	328.3	54.6	150.2	25.0	601.6	100.0
Tradespersons	194.9	15.9	415.7	34.0	479.5	39.2	132.3	10.8	1 222.4	100.0
Clerks	72.2	5.2	350.7	25.1	661.5	47.4	310.7	22.3	1 395.1	100.0
Salespersons and personal service workers	118.5	8.2	466.2	32.4	621.5	43.2	231.9	16.1	1 438.2	100.0
Plant and machine operators, and drivers	132.4	25.3	162.7	31.1	180.9	34.6	47.5	9.1	523.6	100.0
Labourers and related workers	318.9	24.9	474.9	37.1	395.4	30.9	92.5	7.2	1 281.7	100.0
<b>Total employed</b>	<b>970.5</b>	<b>11.2</b>	<b>2 293.9</b>	<b>26.5</b>	<b>3 615.6</b>	<b>41.8</b>	<b>1 772.6</b>	<b>20.5</b>	<b>8 652.6</b>	<b>100.0</b>
QUANTITATIVE SCALE										
Managers and administrators	81.1	8.4	163.4	17.0	417.2	43.5	298.0	31.1	959.7	100.0
Professionals	*19.5	*1.6	119.5	9.7	481.7	39.1	609.8	49.6	1 230.4	100.0
Para-professionals	*24.5	*4.1	103.5	17.2	302.2	50.2	171.4	28.5	601.6	100.0
Tradespersons	187.4	15.3	380.9	31.2	505.6	41.4	148.6	12.2	1 222.4	100.0
Clerks	72.8	5.2	347.5	24.9	657.9	47.2	316.9	22.7	1 395.1	100.0
Salespersons and personal service workers	139.9	9.7	469.8	32.7	601.6	41.8	226.8	15.8	1 438.2	100.0
Plant and machine operators, and drivers	115.4	22.0	161.7	30.9	171.2	32.7	75.2	14.4	523.6	100.0
Labourers and related workers	309.4	24.1	437.3	34.1	423.6	33.0	111.4	8.7	1 281.7	100.0
<b>Total employed</b>	<b>950.1</b>	<b>11.0</b>	<b>2 183.6</b>	<b>25.2</b>	<b>3 560.9</b>	<b>41.2</b>	<b>1 958.1</b>	<b>22.6</b>	<b>8 652.6</b>	<b>100.0</b>

## 3.9 SKILL LEVEL OF EMPLOYED PEOPLE, By Selected Characteristics

	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
PROSE SCALE										
Age (years)										
15-19	88.8	12.6	197.6	28.1	316.7	45.0	100.2	14.2	703.2	100.0
20-24	77.8	7.5	260.1	25.0	466.9	44.9	234.4	22.6	1 039.2	100.0
25-34	179.1	8.3	573.3	26.7	855.6	39.8	539.0	25.1	2 147.1	100.0
35-44	224.3	10.3	493.9	22.6	932.6	42.7	535.2	24.5	2 186.0	100.0
45-54	290.1	16.4	479.5	27.0	638.0	36.0	365.0	20.6	1 772.6	100.0
55-74	185.4	23.0	269.3	33.5	225.4	28.0	124.4	15.5	804.5	100.0
Sex										
Males	702.3	14.5	1 359.9	28.0	1 870.8	38.5	926.9	19.1	4 859.9	100.0
Females	343.3	9.1	913.7	24.1	1 564.5	41.2	971.3	25.6	3 792.8	100.0
Full-time/part-time status										
Full time	779.3	12.8	1 663.9	27.2	2 381.0	39.0	1 285.4	21.0	6 109.6	100.0
Part time	266.3	10.5	609.7	24.0	1 054.2	41.5	612.8	24.1	2 543.1	100.0
<b>Total employed</b>	<b>1 045.6</b>	<b>12.1</b>	<b>2 273.6</b>	<b>26.3</b>	<b>3 435.2</b>	<b>39.7</b>	<b>1 898.2</b>	<b>21.9</b>	<b>8 652.6</b>	<b>100.0</b>
DOCUMENT SCALE										
Age (years)										
15-19	57.5	8.2	242.7	34.5	302.7	43.0	100.3	14.3	703.2	100.0
20-24	58.9	5.7	261.9	25.2	490.5	47.2	227.9	21.9	1 039.2	100.0
25-34	162.9	7.6	562.2	26.2	932.2	43.4	489.8	22.8	2 147.1	100.0
35-44	224.7	10.3	504.8	23.1	934.3	42.7	522.3	23.9	2 186.0	100.0
45-54	277.2	15.6	479.8	27.1	676.3	38.2	339.3	19.1	1 772.6	100.0
55-74	189.3	23.5	242.4	30.1	279.6	34.8	93.1	11.6	804.5	100.0
Sex										
Males	595.6	12.3	1 251.0	25.7	1 985.6	40.9	1 027.6	21.1	4 859.9	100.0
Females	374.9	9.9	1 042.9	27.5	1 629.9	43.0	745.0	19.6	3 792.8	100.0
Full-time/part-time status										
Full time	685.4	11.2	1 599.6	26.2	2 507.6	41.0	1 317.1	21.6	6 109.6	100.0
Part time	285.1	11.2	694.3	27.3	1 108.0	43.6	455.6	17.9	2 543.1	100.0
<b>Total employed</b>	<b>970.5</b>	<b>11.2</b>	<b>2 293.9</b>	<b>26.5</b>	<b>3 615.6</b>	<b>41.8</b>	<b>1 772.6</b>	<b>20.5</b>	<b>8 652.6</b>	<b>100.0</b>
QUANTITATIVE SCALE										
Age (years)										
15-19	89.6	12.7	261.6	37.2	260.9	37.1	91.1	13.0	703.2	100.0
20-24	71.9	6.9	278.3	26.8	466.2	44.9	222.8	21.4	1 039.2	100.0
25-34	170.6	7.9	490.4	22.8	974.7	45.4	511.3	23.8	2 147.1	100.0
35-44	205.9	9.4	484.9	22.2	901.5	41.2	593.6	27.2	2 186.0	100.0
45-54	248.7	14.0	433.1	24.4	690.8	39.0	400.1	22.6	1 772.6	100.0
55-74	163.3	20.3	235.2	29.2	266.8	33.2	139.2	17.3	804.5	100.0
Sex										
Males	541.9	11.2	1 109.3	22.8	1 963.1	40.4	1 245.5	25.6	4 859.9	100.0
Females	408.1	10.8	1 074.2	28.3	1 597.8	42.1	712.6	18.8	3 792.8	100.0
Full time/part time status										
Full time	632.6	10.4	1 473.6	24.1	2 481.6	40.6	1 521.8	24.9	6 109.6	100.0
Part time	317.5	12.5	710.0	27.9	1 079.2	42.4	436.3	17.2	2 543.1	100.0
<b>Total employed</b>	<b>950.1</b>	<b>11.0</b>	<b>2 183.6</b>	<b>25.2</b>	<b>3 560.9</b>	<b>41.2</b>	<b>1 958.1</b>	<b>22.6</b>	<b>8 652.6</b>	<b>100.0</b>

The relationship between people's literacy skill levels and their participation in literacy-related activities is a complex one. Statistics Canada's publication *Reading the Future: A Portrait of Literacy in Canada* states:

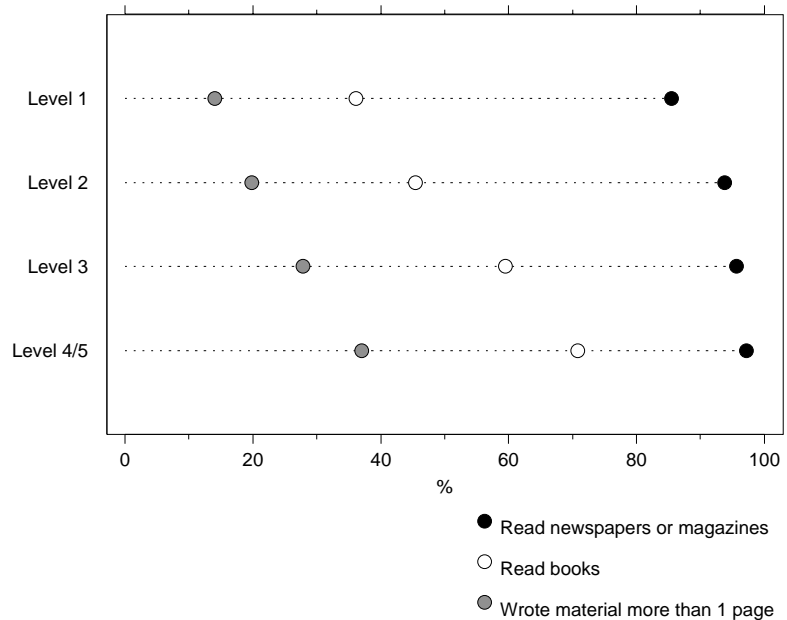
... it is likely that practice contributes to skill both through more frequent use of the skill and through greater variety by providing opportunities to use and expand the skill in new situations. Of course, skill contributes to practice by allowing individuals to enter and succeed in situations with opportunities for practice. (Statistics Canada 1996).

This chapter examines the relationship between people's literacy skill levels and their participation in literacy-related activities at home and at work. It also includes information on how participation in social activities varied according to literacy skill level, and on the relationship between skill level and the need for help with literacy-related activities.

LITERACY-RELATED ACTIVITIES IN DAILY LIFE

On each of the three scales, larger proportions of people at the higher skill levels undertook literacy-related activities at least once a week compared with those at lower skill levels.

Scale 1 PROPORTION UNDERTAKING ACTIVITIES AT LEAST WEEKLY – Prose



On all scales, very large proportions of people at Levels 2, 3 and 4/5 read newspapers or magazines at least weekly and these proportions increased slightly with skill level (approximately 93%, 96% and 97% respectively). However, the proportion at Level 1 who read newspapers or magazines at least weekly was smaller (about 85% on all scales). Large proportions of people also read newspapers or magazines *daily*, irrespective of skill level. Depending on the scale, 51% to 53% of those at Level 1 read newspapers or magazines daily, compared with 69% to 71% of people at Level 4/5. Some 62% to 64% of people at Level 2 read newspapers or magazines daily, and 67% to 68% of people at Level 3 read daily.

The proportion of people who read books at least weekly increased as skill level increased. On the prose scale, 36% of people at Level 1 read books at least weekly, compared with 45% at Level 2, 60% at Level 3 and 71% at Level 4/5. Clearly, frequent reading of books was more closely related to prose skill level than was reading of newspapers or magazines. Although smaller proportions of people at each skill level read books *daily* (less than 50% of people at each skill level) compared with those at the same skill level who read newspapers or magazines daily, the proportion of people at each level who read books daily increased markedly with higher skill levels. On the prose scale, 21% of people at Level 1 read books daily, compared with 27% at Level 2, 37% at Level 3 and 47% at Level 4/5.

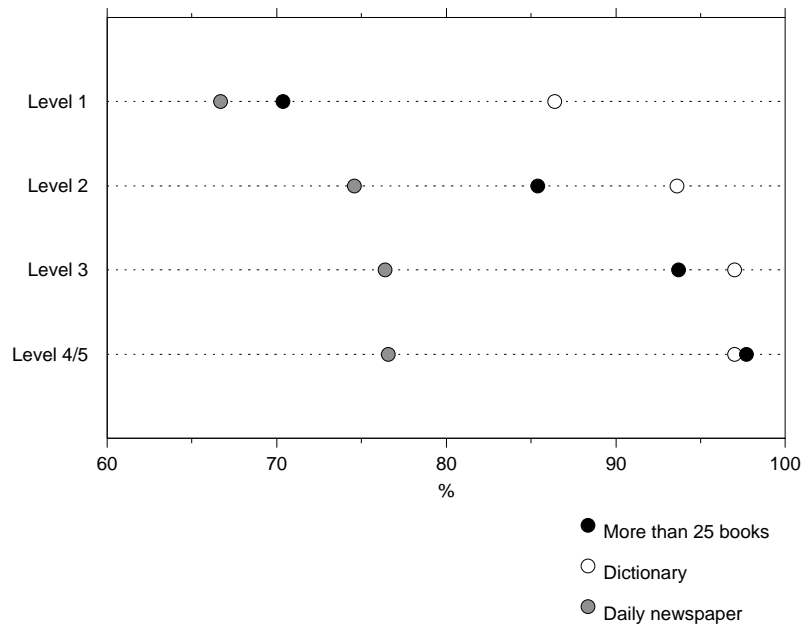
The proportion of people at Level 1 who wrote material more than one page in length at least weekly was less than half the proportion at Level 4/5. On the prose scale, 14% of people at Level 1 wrote such material at least weekly compared with 37% at Level 4/5.

On all scales, the proportion of people at Level 4/5 who used a public library at least weekly was larger than the proportion at Level 1 (for example, on the prose scale, 16% of those at Level 4/5 used a public library at least weekly, compared with 6% at Level 1). However, a smaller proportion of people at Level 4/5 on the quantitative scale attended a public library, compared with those at Level 4/5 on the prose scale (12% compared with 16%). This emphasises that performance on one scale does not necessarily relate to performance on a different scale. For example, 32% of those who were at Level 4/5 on the quantitative scale were at lower levels on the prose scale. It is to be expected that prose skills are more relevant to regular library attendance than quantitative skills, and this helps to explain the different results on the two scales.

## READING MATERIALS IN THE HOME

The proportions of people at Level 1 who had more than 25 books, a dictionary, or a daily newspaper in the home were markedly smaller than the corresponding proportions of people at higher skill levels. Having more than 25 books in the home appeared to be more closely related to performance on the prose scale than did having a dictionary or a daily newspaper. On the prose scale, 70% of people at Level 1 had more than 25 books in the home, compared with 85% at Level 2, 94% at Level 3 and 98% at Level 4/5.

### 4.2 PROPORTION WITH READING MATERIALS IN THE HOME — Prose Scale



LITERACY-RELATED ACTIVITIES IN THE WORKPLACE

People who had worked in the 12 months before the survey were asked questions about literacy-related activities performed in their main job. Some 9,589,000 people aged 15–74 had worked in the 12 months before the survey.

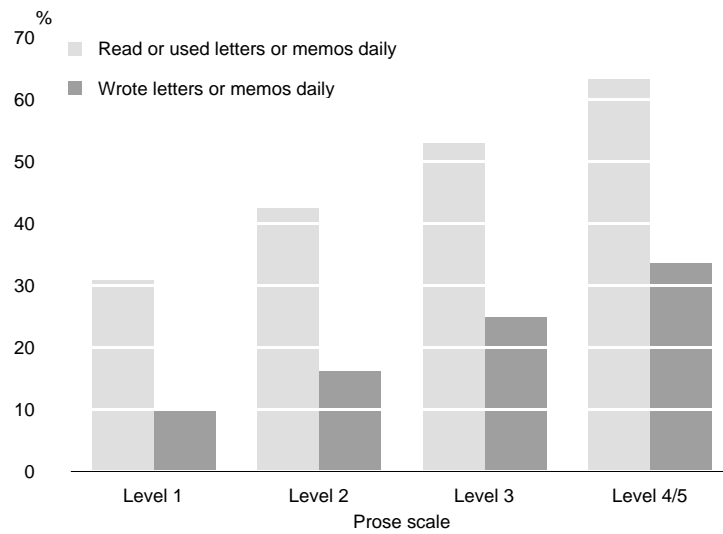
A larger proportion of workers at Level 4/5 performed four or more reading activities at least weekly than did those at Level 1 (62% to 65% compared with 22% to 25% depending on the scale).

Similarly, depending on the scale, 52% to 55% of those at Level 4/5 performed two or more writing activities at least weekly, compared with 16% to 19% of workers at Level 1.

Prose literacy

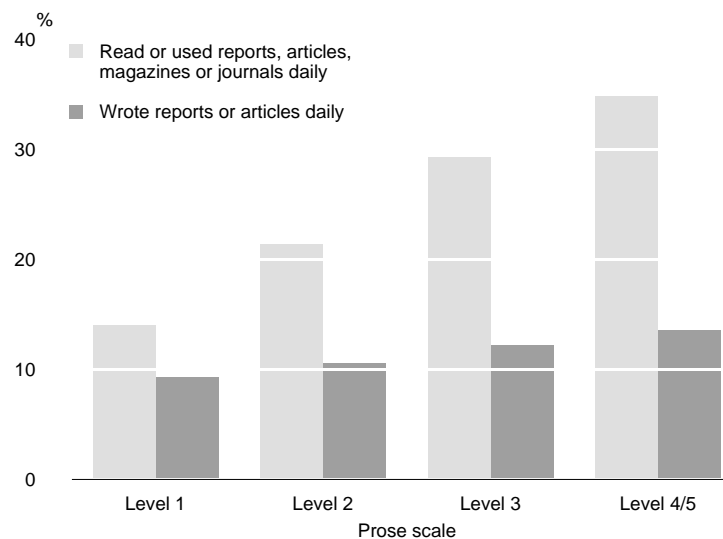
The proportion of workers at each level on the prose scale who read or used letters or memos daily increased with higher skill levels. Of workers at Level 1, 31% read or used letters or memos daily, compared with 43% at Level 2, 53% at Level 3 and 63% at Level 4/5. Similarly, the proportion of workers who wrote letters or memos daily increased with skill level. However, at each skill level, smaller proportions wrote letters or memos daily compared with the proportion that read or used letters or memos daily.

### 4.3 DAILY USE OF LETTERS OR MEMOS



The proportion of workers at each level on the prose scale who read or used reports, articles, magazines or journals daily also increased with higher skill levels. Of workers at Level 1, 14% read or used reports, articles, magazines or journals daily, compared with 21% at Level 2, 29% at Level 3 and 35% at Level 4/5. However, the proportion of people at each level on the prose scale who wrote reports or articles daily increased less markedly with higher skill levels, rising from 9% at Level 1 to 14% at Level 4/5. The proportions at Levels 2 and 3 who wrote such material daily were similar (11% and 12% respectively).

### 4.4 DAILY USE OF REPORTS, ARTICLES, MAGAZINES OR JOURNALS

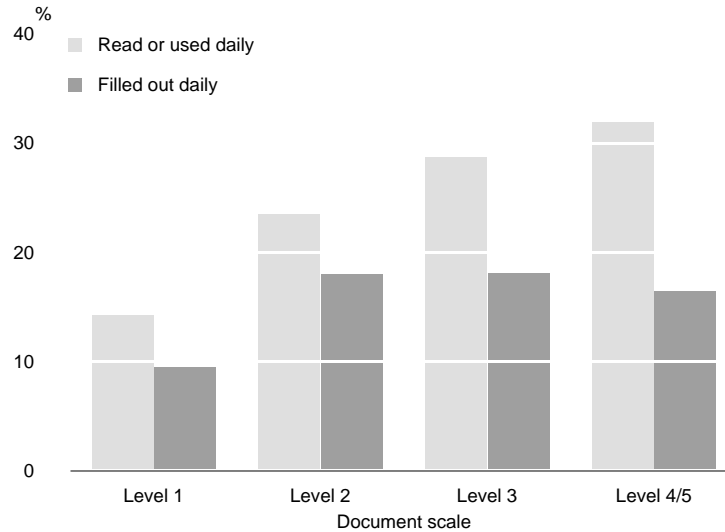




Document literacy

The proportion of workers who read or used bills, invoices, spreadsheets or budget tables daily increased with higher skill levels, rising from 14% at Level 1 to 32% at Level 4/5. However, the proportions who filled out forms such as bills, invoices or budgets daily were largest at Levels 2 and 3 (18% at both levels).

**4.5 DAILY USE OF BILLS, INVOICES, SPREADSHEETS OR BUDGETS**

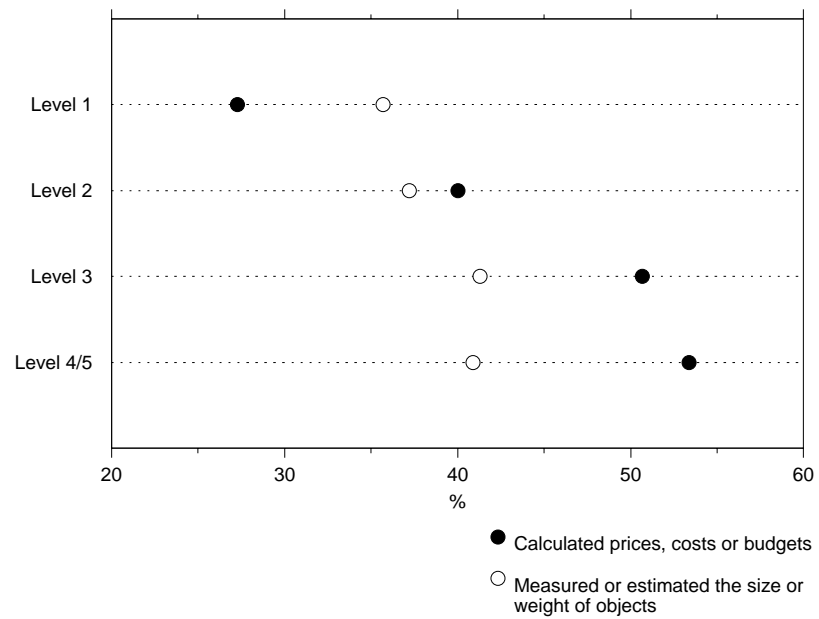


The proportion of workers who read or used diagrams or plans daily was largest at Levels 3 and 4/5 (20% and 21% respectively). However, for those who read or used diagrams or plans *at least weekly*, the difference between Level 3 and 4/5 was more marked: 41% of those at Level 3 read or used diagrams or plans at least weekly compared with 48% at Level 4/5.

Quantitative literacy

The proportion of workers at Level 1 on the quantitative scale who used arithmetic or mathematics at least weekly to measure or estimate the size or weight of objects was larger than the proportion that used arithmetic or mathematics at least weekly to calculate prices, costs or budgets (36% and 27% respectively). However, at Levels 3 and 4/5, larger proportions of workers used arithmetic or mathematics at least weekly to calculate prices, costs or budgets (51% at Level 3 and 53% at Level 4/5) than to measure or estimate the size or weight of objects (41% at Levels 3 and 4/5).

## 4.6 USED ARITHMETIC OR MATHS AT LEAST WEEKLY — Quantitative Scale



The proportions of people who used arithmetic or mathematics at least weekly to measure or estimate the size or weight of objects were largest at Levels 3 and 4/5 (41%), closely followed by those at Level 2 (37%) and Level 1 (36%).

In comparison, the proportions of workers who used arithmetic or mathematics at least weekly to calculate prices, costs or budgets increased markedly with higher skill levels (27% at Level 1, 40% at Level 2, 51% at Level 3 and 53% at Level 4/5).

## SOCIAL ACTIVITIES

People with high literacy skills had larger rates of participation in the following social activities nominated in the survey: attending a movie, play or concert; attending or taking part in a sporting event; and participating in volunteer or community organisations. On all scales, at Level 4/5, approximately 14% of people undertook two or more activities at least weekly, compared with 5% at Level 1.

On all scales, the proportions of people who did not undertake any of the activities at least weekly decreased as skill level increased: approximately 70% at Level 1 did not undertake any of the activities at least weekly, compared with about 53% at Level 2, 46% at Level 3 and 43% at Level 4/5.

For individual social activities, on all scales, the clearest difference in participation was between Level 1 and the other levels. On all scales, the proportion of people at Level 4/5 who attended a movie, play or concert at least weekly was more than twice the proportion at Level 1 (10% to 11% compared with 3% to 5% depending on the scale). Low attendance at movies, plays or concerts by people at lower skill levels may be partly attributable to the expense of such activities, as survey results showed that people at lower skill levels tended to have lower incomes: depending on the scale, 63% to 69% of people at Level 1 were in the two lowest income quintiles, whereas 52% to 60% of those at Level 4/5 were in the two highest income quintiles.

On all scales, larger proportions of people at Levels 2, 3 and 4/5 attended or took part in a sporting event at least weekly or participated in volunteer or community organisations at least weekly, compared with those at Level 1. For both activities, the proportions of people at Level 4/5 who took part at least once a week were approximately twice the proportions at Level 1.

Compared to other social activities, large proportions of people at all levels listened to radio, records, tapes, cassettes or compact discs, and this increased with higher skill levels. On all scales, approximately 97% of people at Level 4/5 listened to radio, records, tapes, cassettes or compact discs at least weekly, compared with 90% at Level 1.

#### NEEDING HELP WITH SELECTED LITERACY-RELATED ACTIVITIES

People were asked whether they needed help from family members or friends to undertake any of the following literacy-related activities in English: read information from government agencies, businesses and other institutions; read newspaper articles; read instructions such as on a medicine bottle; read instructions on packaged goods; write notes or letters; or fill out forms such as applications or bank deposit slips. They were also asked whether they needed help with basic arithmetic.

Compared to all other levels, much larger proportions of people at Level 1 (on each scale) reported needing help often with various activities. On all scales, approximately 7% of people at Level 1 reported needing help often with basic arithmetic, ranging up to 19% who reported needing help often to read information (in English) from government agencies, businesses or other institutions. Negligible proportions of people at other levels on each scale reported needing help often with any of the activities. However, small proportions of people at Levels 2, 3 and 4/5 reported needing help sometimes with various activities.

Reading information (in English) from government agencies, businesses or other institutions was the activity with which the largest proportions of people at Levels 2, 3 and 4/5 reported needing help.

#### 4.7 SELECTED LITERACY-RELATED ACTIVITIES IN DAILY LIFE, By Skill Level

Skill level	Read newspapers or magazines daily.....		Read books daily..		Wrote material more than one page in length at least weekly.....		Used a public library at least weekly.....		Total persons.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
PROSE SCALE										
Level 1	1 373.1	52.7	557.6	21.4	366.9	14.1	164.4	6.3	2 607.4	100.0
Level 2	2 310.0	63.6	997.9	27.5	720.7	19.8	323.4	8.9	3 631.9	100.0
Level 3	3 124.6	66.9	1 748.6	37.5	1 299.8	27.8	612.4	13.1	4 668.9	100.0
Level 4/5	1 627.1	70.4	1 086.7	47.0	856.6	37.0	366.0	15.8	2 312.5	100.0
<b>Total</b>	<b>8 434.8</b>	<b>63.8</b>	<b>4 390.7</b>	<b>33.2</b>	<b>3 244.0</b>	<b>24.5</b>	<b>1 466.3</b>	<b>11.1</b>	<b>13 220.8</b>	<b>100.0</b>
DOCUMENT SCALE										
Level 1	1 377.3	53.4	577.9	22.4	369.2	14.3	169.8	6.6	2 580.3	100.0
Level 2	2 376.2	63.6	1 098.8	29.4	765.6	20.5	367.8	9.8	3 738.3	100.0
Level 3	3 204.5	67.1	1 744.8	36.5	1 375.3	28.8	609.7	12.8	4 774.2	100.0
Level 4/5	1 476.8	69.4	969.2	45.5	733.8	34.5	319.0	15.0	2 128.0	100.0
<b>Total</b>	<b>8 434.8</b>	<b>63.8</b>	<b>4 390.7</b>	<b>33.2</b>	<b>3 244.0</b>	<b>24.5</b>	<b>1 466.3</b>	<b>11.1</b>	<b>13 220.8</b>	<b>100.0</b>
QUANTITATIVE SCALE										
Level 1	1 292.5	51.0	594.8	23.5	394.3	15.6	196.1	7.7	2 531.8	100.0
Level 2	2 242.3	62.4	1 108.5	30.9	748.2	20.8	356.3	9.9	3 590.8	100.0
Level 3	3 244.8	68.1	1 703.5	35.8	1 336.5	28.1	630.0	13.2	4 764.0	100.0
Level 4/5	1 655.2	70.9	984.0	42.2	765.0	32.8	283.9	12.2	2 334.2	100.0
<b>Total</b>	<b>8 434.8</b>	<b>63.8</b>	<b>4 390.7</b>	<b>33.2</b>	<b>3 244.0</b>	<b>24.5</b>	<b>1 466.3</b>	<b>11.1</b>	<b>13 220.8</b>	<b>100.0</b>

#### 4.8 SELECTED READING MATERIALS IN THE HOME, By Prose Skill Level

Skill level	Dictionary.....		Daily newspaper...		Magazine or weekly newspaper.....		More than 25 books.....		Total persons.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
Level 1	2 254.0	86.4	1 737.9	66.7	2 167.4	83.1	1 835.7	70.4	2 607.4	100.0
Level 2	3 398.7	93.6	2 710.2	74.6	3 281.4	90.3	3 101.0	85.4	3 631.9	100.0
Level 3	4 527.9	97.0	3 568.1	76.4	4 387.4	94.0	4 372.5	93.7	4 668.9	100.0
Level 4/5	2 243.7	97.0	1 771.0	76.6	2 210.3	95.6	2 259.6	97.7	2 312.5	100.0
<b>Total</b>	<b>12 424.4</b>	<b>94.0</b>	<b>9 787.1</b>	<b>74.0</b>	<b>12 046.6</b>	<b>91.1</b>	<b>11 568.7</b>	<b>87.5</b>	<b>13 220.8</b>	<b>100.0</b>

## 4.9 SELECTED LITERACY-RELATED ACTIVITIES AT WORK, By Prose Skill Level

Skill level	<i>Read or used letters or memos daily.....</i>		<i>Wrote letters or memos daily.....</i>		<i>Read or used reports, articles, magazines or journals daily.....</i>		<i>Wrote reports or articles daily.....</i>		<i>Total persons.....</i>	
	'000	%	'000	%	'000	%	'000	%	'000	%
Level 1	376.1	30.9	123.3	10.1	171.9	14.1	113.5	9.3	1 218.7	100.0
Level 2	1 085.8	42.6	414.7	16.3	544.6	21.4	269.2	10.6	2 549.2	100.0
Level 3	1 995.9	52.9	934.1	24.8	1 108.9	29.4	458.6	12.2	3 772.3	100.0
Level 4/5	1 297.0	63.3	687.8	33.6	715.6	34.9	277.9	13.6	2 048.2	100.0
<b>Total</b>	<b>4 754.8</b>	<b>49.6</b>	<b>2 159.9</b>	<b>22.5</b>	<b>2 541.1</b>	<b>26.5</b>	<b>1 119.2</b>	<b>11.7</b>	<b>9 588.5</b>	<b>100.0</b>

## 4.10 SELECTED LITERACY-RELATED ACTIVITIES AT WORK, By Document Skill Level

Skill level	<i>Read or used bills, invoices, spreadsheets or budget tables daily.....</i>		<i>Filled out forms such as bills, invoices or budgets daily.....</i>		<i>Read or used diagrams or plans daily.....</i>		<i>Read or used diagrams or plans at least weekly.....</i>		<i>Total persons.....</i>	
	'000	%	'000	%	'000	%	'000	%	'000	%
Level 1	163.6	14.3	108.6	9.5	159.3	13.9	299.9	26.2	1 143.5	100.0
Level 2	608.5	23.5	466.2	18.0	435.3	16.8	887.9	34.4	2 584.1	100.0
Level 3	1 129.5	28.7	713.1	18.1	799.6	20.3	1 609.5	40.9	3 936.7	100.0
Level 4/5	614.7	31.9	316.8	16.5	404.0	21.0	931.8	48.4	1 924.1	100.0
<b>Total</b>	<b>2 516.4</b>	<b>26.2</b>	<b>1 604.6</b>	<b>16.7</b>	<b>1 798.2</b>	<b>18.8</b>	<b>3 729.0</b>	<b>38.9</b>	<b>9 588.5</b>	<b>100.0</b>

#### 4.11 SELECTED LITERACY-RELATED ACTIVITIES AT WORK, By Quantitative Skill Level

Skill level	<i>Used arithmetic or mathematics to measure or estimate the size or weight of objects daily.....</i>		<i>Used arithmetic or mathematics to measure or estimate the size or weight of objects at least weekly.....</i>		<i>Used arithmetic or mathematics to calculate prices, costs or budgets daily.....</i>		<i>Used arithmetic or mathematics to calculate prices, costs or budgets at least weekly.....</i>		<i>Total persons.....</i>	
	'000	%	'000	%	'000	%	'000	%	'000	%
Level 1	275.6	24.3	405.7	35.7	182.8	16.1	310.6	27.3	1 135.7	100.0
Level 2	632.4	25.5	922.3	37.2	517.1	20.9	991.4	40.0	2 477.2	100.0
Level 3	1 073.5	27.7	1 600.0	41.3	1 146.1	29.6	1 964.6	50.7	3 872.8	100.0
Level 4/5	518.7	24.7	861.0	40.9	611.1	29.1	1 123.3	53.4	2 102.8	100.0
<b>Total</b>	<b>2 500.3</b>	<b>26.1</b>	<b>3 788.9</b>	<b>39.5</b>	<b>2 457.1</b>	<b>25.6</b>	<b>4 389.9</b>	<b>45.8</b>	<b>9 588.5</b>	<b>100.0</b>

#### 4.12 SELECTED SOCIAL ACTIVITIES, By Skill Level

Skill level	<i>Attended a movie, play or concert at least weekly.....</i>		<i>Attended or took part in a sporting event at least weekly.....</i>		<i>Participated in volunteer or community organisations at least weekly.....</i>		<i>Listened to radio, records, tapes, cassettes or compact discs at least weekly.....</i>		<i>Total persons.....</i>	
	'000	%	'000	%	'000	%	'000	%	'000	%
PROSE SCALE										
Level 1	117.6	4.5	578.7	22.2	216.2	8.3	2 347.8	90.0	2 607.4	100.0
Level 2	294.0	8.1	1 316.7	36.3	534.0	14.7	3 455.1	95.1	3 631.9	100.0
Level 3	430.6	9.2	1 921.8	41.2	787.2	16.9	4 478.5	95.9	4 668.9	100.0
Level 4/5	251.1	10.9	973.2	42.1	427.3	18.5	2 226.4	96.3	2 312.5	100.0
<b>Total</b>	<b>1 093.4</b>	<b>8.3</b>	<b>4 790.3</b>	<b>36.2</b>	<b>1 964.7</b>	<b>14.9</b>	<b>12 507.8</b>	<b>94.6</b>	<b>13 220.8</b>	<b>100.0</b>
DOCUMENT SCALE										
Level 1	88.9	3.4	567.2	22.0	243.6	9.4	2 318.7	89.9	2 580.3	100.0
Level 2	287.3	7.7	1 304.5	34.9	537.2	14.4	3 556.4	95.1	3 738.3	100.0
Level 3	496.3	10.4	1 998.5	41.9	795.5	16.7	4 571.9	95.8	4 774.2	100.0
Level 4/5	221.0	10.4	920.2	43.2	388.4	18.2	2 060.8	96.8	2 128.0	100.0
<b>Total</b>	<b>1 093.4</b>	<b>8.3</b>	<b>4 790.3</b>	<b>36.2</b>	<b>1 964.7</b>	<b>14.9</b>	<b>12 507.8</b>	<b>94.6</b>	<b>13 220.8</b>	<b>100.0</b>
QUANTITATIVE SCALE										
Level 1	111.9	4.4	553.4	21.9	231.5	9.1	2 288.8	90.4	2 531.8	100.0
Level 2	269.9	7.5	1 235.3	34.4	544.9	15.2	3 384.6	94.3	3 590.8	100.0
Level 3	480.8	10.1	1 983.8	41.6	763.1	16.0	4 574.9	96.0	4 764.0	100.0
Level 4/5	230.8	9.9	1 017.7	43.6	425.2	18.2	2 259.6	96.8	2 334.2	100.0
<b>Total</b>	<b>1 093.4</b>	<b>8.3</b>	<b>4 790.3</b>	<b>36.2</b>	<b>1 964.7</b>	<b>14.9</b>	<b>12 507.8</b>	<b>94.6</b>	<b>13 220.8</b>	<b>100.0</b>

4.13 SELECTED LITERACY-RELATED ACTIVITIES, By People Who Needed Help Often

PEOPLE WHO NEEDED HELP WITH.....

Skill level	Reading information from government agencies, businesses and other institutions.....		Writing notes or letters.....		Filling out forms such as applications or bank deposit slips.....		Reading instructions such as on a medicine bottle.....		Basic arithmetic..		Total persons.....	
	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%
PROSE SCALE												
Level 1	497.8	19.1	455.6	17.5	429.9	16.5	302.8	11.6	184.0	7.1	2 607.4	100.0
Level 2	38.9	1.1	*18.7	*0.5	47.5	1.3	*2.8	*0.1	*33.2	*0.9	3 631.9	100.0
Level 3	*31.0	*0.7	*4.9	*0.1	*10.2	*0.2	–	–	*19.7	*0.4	4 668.9	100.0
Level 4/5	*0.2	–	–	–	–	–	–	–	*4.6	*0.2	2 312.5	100.0
<b>Total</b>	<b>567.9</b>	<b>4.3</b>	<b>479.2</b>	<b>3.6</b>	<b>487.7</b>	<b>3.7</b>	<b>305.6</b>	<b>2.3</b>	<b>241.5</b>	<b>1.8</b>	<b>13 220.8</b>	<b>100.0</b>
DOCUMENT SCALE												
Level 1	494.4	19.2	454.9	17.6	423.4	16.4	300.8	11.7	192.2	7.5	2 580.3	100.0
Level 2	39.9	1.1	*19.4	*0.5	47.3	1.3	*4.8	*0.1	*24.3	*0.7	3 738.3	100.0
Level 3	*30.2	*0.6	*4.9	*0.1	*17.1	*0.4	–	–	*23.9	*0.5	4 774.2	100.0
Level 4/5	*3.4	*0.2	–	–	–	–	–	–	*1.0	–	2 128.0	100.0
<b>Total</b>	<b>567.9</b>	<b>4.3</b>	<b>479.2</b>	<b>3.6</b>	<b>487.7</b>	<b>3.7</b>	<b>305.6</b>	<b>2.3</b>	<b>241.5</b>	<b>1.8</b>	<b>13 220.8</b>	<b>100.0</b>
QUANTITATIVE SCALE												
Level 1	489.5	19.3	437.1	17.3	421.0	16.6	300.3	11.9	210.5	8.3	2 531.8	100.0
Level 2	44.2	1.2	37.4	1.0	53.8	1.5	*4.5	*0.1	*23.4	*0.7	3 590.8	100.0
Level 3	*28.3	*0.6	*4.7	*0.1	*12.9	*0.3	*0.8	–	*6.5	*0.1	4 764.0	100.0
Level 4/5	*6.0	*0.3	–	–	–	–	–	–	*1.0	–	2 334.2	100.0
<b>Total</b>	<b>567.9</b>	<b>4.3</b>	<b>479.2</b>	<b>3.6</b>	<b>487.7</b>	<b>3.7</b>	<b>305.6</b>	<b>2.3</b>	<b>241.5</b>	<b>1.8</b>	<b>13 220.8</b>	<b>100.0</b>

It is generally recognised that lack of proficiency in English literacy results in significant disadvantage in terms of employment opportunity and participation in Australian society generally. It is important for all Australians to develop and maintain a level of spoken and written English which is appropriate for a range of contexts (Department of Employment, Education and Training 1991a).

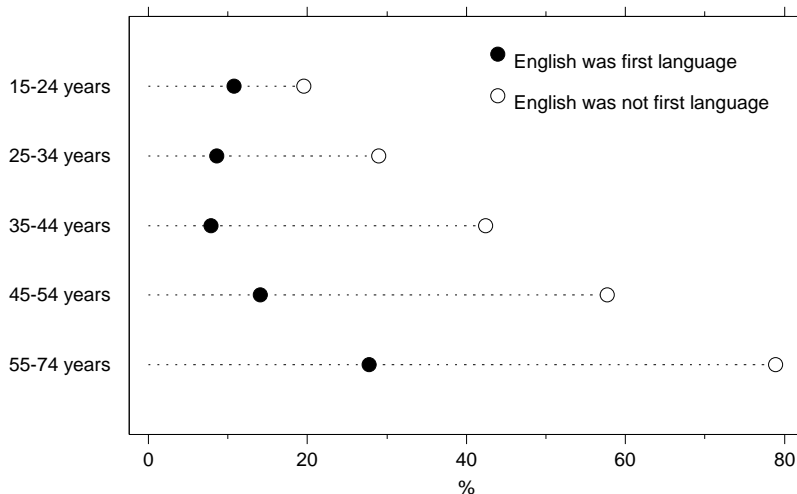
This chapter presents information about Australians who first spoke a language other than English, and compares their English literacy skills with those of people whose first language was English. Variations in skill levels are related to factors such as age, year of arrival in Australia, language background, self-perceptions of English proficiency and age learned to speak English.

Compared with people whose first language was English, larger proportions of people who first spoke a language other than English were at the lowest skill level on each of the three literacy scales. Of the 2,304,000 people whose first language was not English, 1,109,000 (48%) were at Level 1 on the prose scale. In comparison, of the 10,917,000 people whose first language was English, 1,498,000 (14%) were at Level 1 on the prose scale. On the document scale, the pattern was similar. On the quantitative scale, people whose first language was not English performed better than on the prose and document scales, with 43% at Level 1 compared with 14% of those whose first language was English.

AGE

Of people whose first language was not English, the proportion at Level 1 increased significantly with age: for example, on the prose scale, 20% of people aged 15–24 were at Level 1, compared with 79% of people aged 55–74. Of people whose first language was English, 11% of those aged 15–24 were at Level 1, compared with 28% of those aged 55–74.

5.1 PROPORTION AT LEVEL 1, By Age And First Language — Prose Scale





BIRTHPLACE

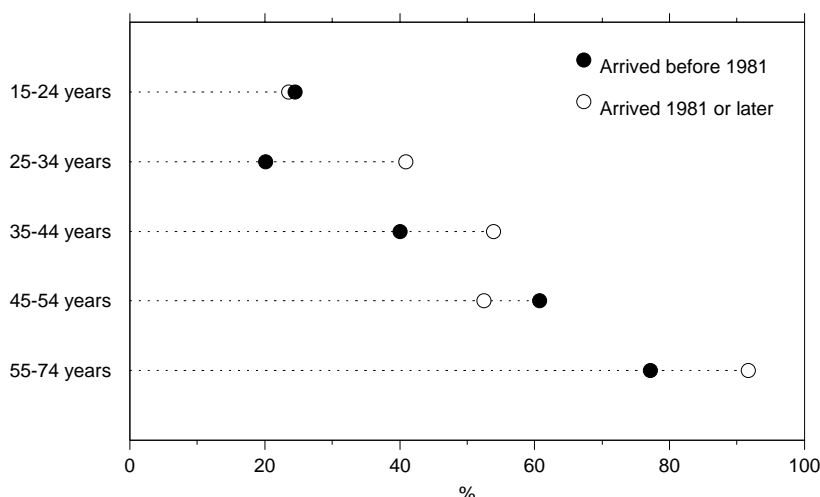
Of people who first spoke a language other than English, greater proportions of those born in Australia were at high skill levels compared with those born outside Australia. The skill level distribution of the former group was similar to that of people whose first language was English. For example, of people whose first language was not English but who were born in Australia, 16% were at Level 1 on the document scale, compared with 14% of those whose first language was English, irrespective of birthplace, 29% were at Level 2 (compared with 30%), 39% were at Level 3 (compared with 38%), and 15% were at Level 4/5 (compared with 18%).

YEAR OF ARRIVAL

Of people whose first language was not English and who were born outside Australia, greater proportions of those who arrived before 1981 were at Level 1 compared with those who arrived in 1981 or later. On the prose scale, 59% of those who arrived before 1981 were at Level 1 compared with 47% of those who arrived in 1981 or later; on the document scale the comparison was 56% to 43%; and on the quantitative scale, 53% compared with 40%.

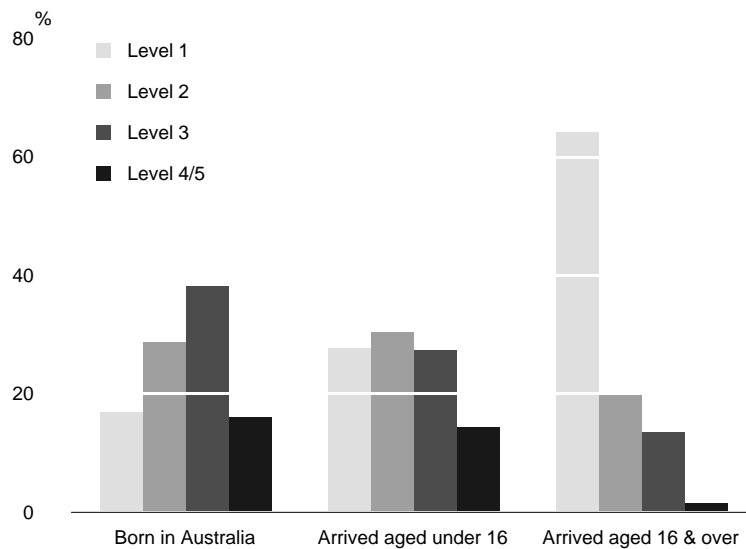
Age appeared to be a factor in these skill level differences. A large proportion (81%) of those who arrived in 1981 or later were aged under 45 at the time of the survey, while 29% of those who arrived before 1981 were in this age group. A comparison of the skill levels of those aged under 45 shows that 41% of people who arrived in 1981 or later and whose first language was not English were at Level 1 on the prose scale, compared with 32% of those who arrived before 1981. Characteristics such as time spent in Australia and age on arrival in Australia will also differ between these groups, with earlier arrivals having spent more time in Australia. These factors will also contribute to differences in literacy skill levels.

5.2 FIRST LANGUAGE NOT ENGLISH, Proportion at Level 1 — Prose Scale



## AGE ON ARRIVAL IN AUSTRALIA

Of people who first spoke a language other than English and arrived in Australia before the age of 16, 28% were at Level 1 on the prose scale, 30% were at Level 2, 27% were at Level 3 and 14% were at Level 4/5. In comparison, of those who arrived aged 16 and over, 64% were at Level 1, 20% were at Level 2, and 15% were at Level 3 and above. The distributions were similar on the document and quantitative scales.

**5.3 PROPORTION AT EACH SKILL LEVEL, By Age On Arrival — Prose Scale**

## EDUCATIONAL ATTAINMENT

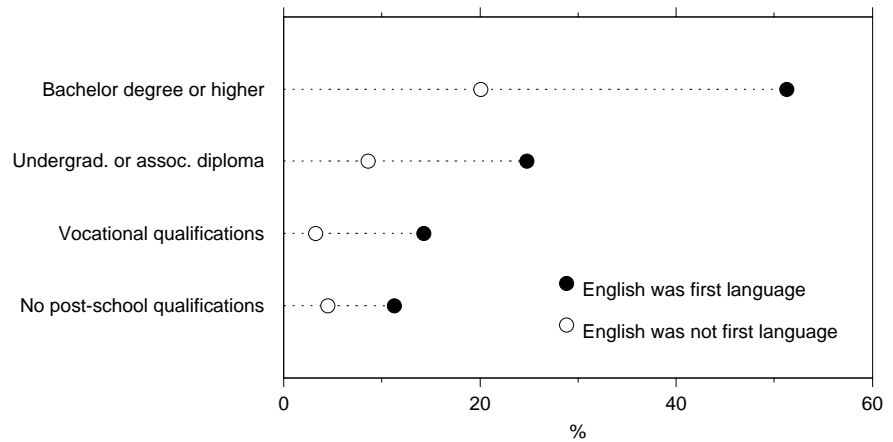
Of people who first spoke a language other than English, 971,000 had obtained post-school qualifications, representing 42% of this group. On each of the three literacy scales, much larger proportions of people without post-school qualifications had low skill levels than those with post-school qualifications. For example, on the quantitative scale, 23% of those with post-school qualifications were at Level 1, 23% were at Level 2, 41% were at Level 3 and 12% were at Level 4/5. Of people who did not have post-school qualifications, 57% were at Level 1, 20% were at Level 2, 18% were at Level 3 and 4% were at Level 4/5. On the prose scale, 30% of people with post-school qualifications were at Level 1, compared with 62% of those without post-school qualifications, and on the document scale, 27% of those with post-school qualifications were at Level 1, compared with 58% of those without post-school qualifications.

Of people who first spoke a language other than English, 12% of those who had obtained a bachelor degree or higher were at Level 1 on the prose scale, and 17% were at Level 4/5. In comparison, for those with vocational qualifications, 44% were at Level 1 on the prose scale and a further 27% were at Level 2.

Across all levels of educational attainment, smaller proportions of people who first spoke a language other than English were at the highest skill level than those whose first language was English. This was most noticeable at the higher levels of education. For example, on the document scale, of people who had a bachelor degree or higher, 20% of people who first spoke a language other than English were at Level 4/5, compared with 51% of those whose first language was English. For those who had no post-school

qualifications, 4% of people who first spoke a language other than English were at Level 4/5, compared with 11% of those whose first language was English.

**5.4 PROPORTION AT LEVEL 4/5, By Education — Document Scale**



**LABOUR FORCE STATUS**

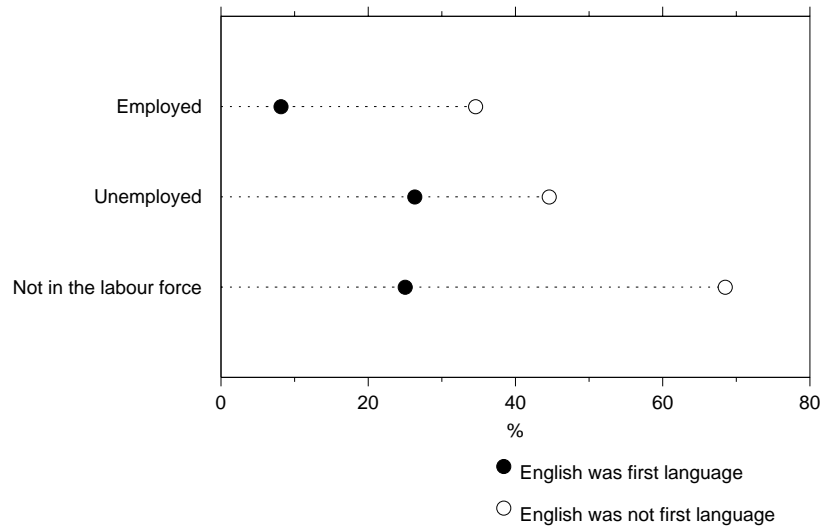
Over one-third (35%) of employed people who first spoke a language other than English were at Level 1 on the prose scale, compared with 8% of employed people whose first language was English.

The difference in the proportions at Level 1 was not so large for unemployed people. Some 45% of unemployed people whose first language was not English were at Level 1 on the prose scale, compared with 26% of unemployed people whose first language was English.

Of people not in the labour force, there were large differences between the skill levels of those who first spoke a language other than English and those whose first language was English. On the prose scale the proportions at Level 1 were 69% and 25% respectively, and on the document and quantitative scales the differences were similar.

Almost half (48%) of people not in the labour force who first spoke a language other than English were aged 55–74. This proportion was similar for people whose first language was English (49%). However, on each scale, of people who first spoke a language other than English, the proportion at Level 1 increased more markedly with age than for those whose first language was English. As a result, there is a larger difference in the proportions at Level 1 between the two groups for those not in the labour force.

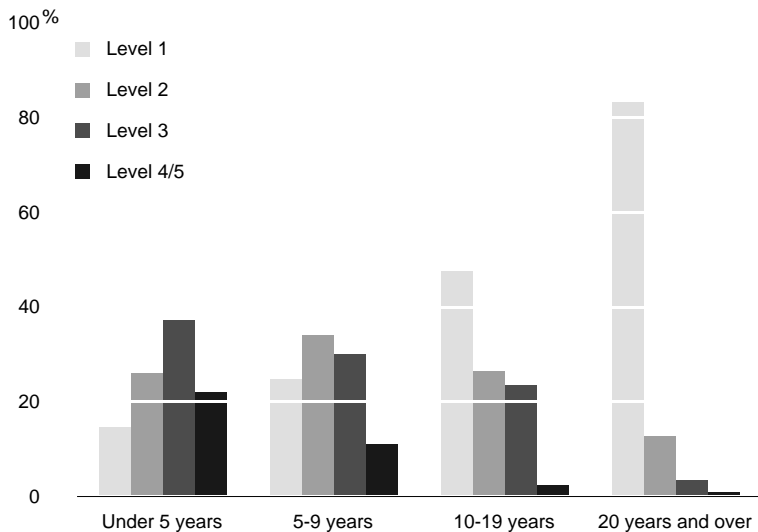
**5.5 PROPORTION AT LEVEL 1, By Labour Force Status — Prose Scale**



**AGE LEARNED TO SPEAK ENGLISH AND ENGLISH LANGUAGE TRAINING**

The English literacy skills of people whose first language was not English were closely related to the age at which they learned to speak English. On the prose scale, people who learned to speak English before the age of five had skills that were as good as those of people whose first language was English, with 15% at Level 1 and 22% at Level 4/5. However, those who learned English from age 5–9 had markedly lower skills than those who learned English earlier, with 25% at Level 1 and 11% at Level 4/5. For those who learned English at age 20 and over, prose skill levels dropped dramatically, with 83% of this group at Level 1. There were similar distributions on the document scale. On the quantitative scale the pattern was not quite so noticeable across the different age groups, with slightly larger proportions at Level 3 and Level 4/5: for example, on the prose scale, of those who learned to speak English from age 10–19, 26% were at Level 3 and above, whereas on the quantitative scale, 34% were at Level 3 and 7% were at Level 4/5.

**5.6 PROPORTION AT EACH LEVEL, By Age Learned English — Prose Scale**



Overall, people who first spoke a language other than English who had attended classes to learn English had poorer skills than those who had not. Some 55% of people who had attended English language classes were at Level 1 on the prose scale, compared with 44% of those who had not attended English language classes. This may be due to factors such as the age at which English was learned, as people who learned English as young children would have little need to attend English language classes, or the fact that people with poorer skills would be more likely to seek assistance.

## LANGUAGE USAGE

Of people who first spoke a language other than English who stated that they were most at ease speaking English, 26% were at Level 1 on the prose scale, 29% were at Level 2, 32% were at Level 3 and 13% were at Level 4/5. In contrast, of people who were most at ease speaking another European language, 77% were at Level 1, 15% were at Level 2, and 8% were at Level 3 and above. Of people who were most at ease speaking an Asian<sup>1</sup> language, 60% were at Level 1, 25% were at Level 2, and 15% were at Level 3 or above. Of people who usually spoke English at home (regardless of what language they felt most at ease with), 30% were at Level 1 on the prose scale, 29% were at Level 2, 30% were at Level 3, and 11% were at Level 4/5. Of those who usually spoke another European language at home, 71% were at Level 1, 13% were at Level 2, and 15% were at Level 3 and above on the prose scale. Of those who usually spoke an Asian language at home, 56% were at Level 1, 27% were at Level 2, and 17% were at Level 3 and above. The patterns were similar on the document and quantitative scales.

## SELF-PERCEPTION OF ABILITY COMPARED TO OBJECTIVE ASSESSMENT

People at Level 1 on the prose scale who first spoke a language other than English appeared to have a more realistic view of their English reading skills than did those whose first language was English — 38% rated their English reading skills as excellent or good, compared with 66% of people at Level 1 whose first language was English. At Level 3 and above, most (96% to 99%) rated their reading skills as excellent or good, irrespective of whether their first language was English or not.

For quantitative skills, the proportions of those at Level 1 who rated their mathematical skills as excellent or good were more uniform. Of people who first spoke a language other than English who were at Level 1 on the quantitative scale, 56% rated their mathematical skills as excellent or good, compared with 43% of people at Level 1 whose first language was English.

It should be noted that when people whose first language was not English were asked to rate their reading and writing skills for the needs of daily life, they were explicitly asked to rate their *English* reading and writing skills. When asked to rate their basic mathematical skills, the language context did not apply. However, in the objective assessment the quantitative tasks were embedded in English text, meaning that there was a language context. This may partly explain why those people whose first language was not English, and who were at the lowest level on the quantitative scale, were relatively confident in their mathematical abilities, while those at the lowest level on the prose scale were not so confident.

<sup>1</sup> This term is used in this chapter to mean 'Southern, Southeast and Eastern Asian languages' and excludes a few Central Asian languages such as Mongol classified under 'Southwest Asian and North African languages'. See Australian Bureau of Statistics 1996, *Australian Standard Classification of Languages* (Cat. no. 1267.0), ABS, Canberra.

## 5.7 FIRST LANGUAGE WAS NOT ENGLISH, SKILL LEVEL, By Selected Characteristics

Selected characteristics	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
<b>PROSE SCALE</b>										
<b>Sex</b>										
Males	545.8	48.5	274.3	24.4	237.3	21.1	67.5	6.0	1 124.8	100.0
Females	563.4	47.8	278.9	23.7	243.5	20.7	93.0	7.9	1 178.8	100.0
<b>Age (years)</b>										
15–24	67.2	19.6	108.8	31.8	125.8	36.7	40.6	11.9	342.3	100.0
25–34	134.1	29.0	163.0	35.3	118.0	25.5	47.1	10.2	462.2	100.0
35–44	217.8	42.4	105.6	20.6	143.8	28.0	46.4	9.0	513.6	100.0
45–54	237.3	57.7	95.3	23.2	57.3	13.9	*21.6	*5.3	411.5	100.0
55–74	452.8	78.9	80.5	14.0	35.8	6.2	*4.9	*0.9	573.9	100.0
<b>Birthplace and year of arrival</b>										
Born in Australia	66.5	16.9	113.4	28.8	150.9	38.3	63.2	16.0	393.9	100.0
Born outside Australia	1 042.7	54.6	439.8	23.0	329.9	17.3	97.4	5.1	1 909.7	100.0
Arrived before 1981	679.7	59.4	236.8	20.7	172.2	15.1	55.2	4.8	1 143.9	100.0
Arrived 1981 or later	363.0	47.4	203.0	26.5	157.6	20.6	42.2	5.5	765.8	100.0
<b>Age on arrival</b>										
Under 16 years	141.1	27.8	154.4	30.4	139.8	27.5	73.1	14.4	508.5	100.0
16 years and over	901.5	64.3	285.4	20.4	190.1	13.6	*24.3	*1.7	1 401.3	100.0
<b>Level of educational attainment</b>										
With a post-school qualification	289.0	29.8	288.6	29.7	301.8	31.1	91.7	9.4	971.2	100.0
Bachelor degree or higher	41.2	12.4	106.9	32.1	127.0	38.2	57.6	17.3	332.8	100.0
Undergraduate or associate diploma	74.4	30.6	75.4	31.0	74.8	30.7	*18.9	*7.8	243.5	100.0
Skilled or basic vocational qualifications	173.4	43.9	106.3	26.9	100.0	25.3	*15.2	*3.9	394.8	100.0
Without a post-school qualification	820.1	61.5	264.6	19.9	179.0	13.4	68.9	5.2	1 332.5	100.0
<b>Labour force status</b>										
Employed	445.0	34.6	364.2	28.3	355.6	27.6	121.6	9.5	1 286.4	100.0
Unemployed	62.7	44.6	*31.8	*22.6	35.3	25.1	*10.7	*7.6	140.5	100.0
Not in the labour force	601.4	68.6	157.2	17.9	89.8	10.2	*28.2	*3.2	876.7	100.0
<b>Total</b>	<b>1 109.1</b>	<b>48.1</b>	<b>553.2</b>	<b>24.0</b>	<b>480.8</b>	<b>20.9</b>	<b>160.6</b>	<b>7.0</b>	<b>2 303.7</b>	<b>100.0</b>

5.7 FIRST LANGUAGE WAS NOT ENGLISH, SKILL LEVEL, By Selected Characteristics *continued*

Selected characteristics	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
DOCUMENT SCALE										
Sex										
Males	489.2	43.5	238.5	21.2	311.2	27.7	86.0	7.6	1 124.8	100.0
Females	547.0	46.4	272.5	23.1	285.3	24.2	74.0	6.3	1 178.8	100.0
Age (years)										
15–24	55.1	16.1	99.1	29.0	147.9	43.2	40.2	11.7	342.3	100.0
25–34	130.4	28.2	139.8	30.2	147.2	31.8	44.9	9.7	462.2	100.0
35–44	202.4	39.4	114.6	22.3	149.9	29.2	46.7	9.1	513.6	100.0
45–54	217.1	52.8	81.3	19.7	88.4	21.5	*24.7	*6.0	411.5	100.0
55–74	431.2	75.1	76.2	13.3	63.1	11.0	*3.5	*0.6	573.9	100.0
Birthplace and year of arrival										
Born in Australia	63.8	16.2	114.7	29.1	155.3	39.4	60.0	15.2	393.9	100.0
Born outside Australia	972.5	50.9	396.2	20.7	441.2	23.1	99.9	5.2	1 909.7	100.0
Arrived before 1981	639.7	55.9	224.7	19.6	219.2	19.2	60.4	5.3	1 143.9	100.0
Arrived 1981 or later	332.7	43.5	171.6	22.4	222.0	29.0	39.5	5.2	765.8	100.0
Age on arrival										
Under 16 years	117.0	23.0	158.2	31.1	175.0	34.4	58.3	11.5	508.5	100.0
16 years and over	855.4	61.0	238.1	17.0	266.1	19.0	41.6	3.0	1 401.3	100.0
Level of educational attainment										
With a post-school qualification	260.2	26.8	236.3	24.3	374.1	38.5	100.6	10.4	971.2	100.0
Bachelor degree or higher	40.1	12.0	66.5	20.0	159.4	47.9	66.8	20.1	332.8	100.0
Undergraduate or associate diploma	65.2	26.8	71.1	29.2	86.3	35.4	*21.0	*8.6	243.5	100.0
Skilled or basic vocational qualifications	154.8	39.2	98.7	25.0	128.4	32.5	*12.9	*3.3	394.8	100.0
Without a post-school qualification	776.1	58.2	274.7	20.6	222.4	16.7	59.3	4.5	1 332.5	100.0
Labour force status										
Employed	394.4	30.7	318.7	24.8	444.2	34.5	129.0	10.0	1 286.4	100.0
Unemployed	63.6	45.3	*29.3	*20.9	34.8	24.7	*12.8	*9.1	140.5	100.0
Not in the labour force	578.3	66.0	162.9	18.6	117.5	13.4	*18.1	*2.1	876.7	100.0
<b>Total</b>	<b>1 036.3</b>	<b>45.0</b>	<b>511.0</b>	<b>22.2</b>	<b>596.5</b>	<b>25.9</b>	<b>159.9</b>	<b>6.9</b>	<b>2 303.7</b>	<b>100.0</b>

5.7 FIRST LANGUAGE WAS NOT ENGLISH, SKILL LEVEL, By Selected Characteristics *continued*

Selected characteristics	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
QUANTITATIVE SCALE										
Sex										
Males	454.9	40.4	220.8	19.6	348.0	30.9	101.2	9.0	1 124.8	100.0
Females	533.5	45.3	275.4	23.4	297.2	25.2	72.7	6.2	1 178.8	100.0
Age (years)										
15–24	71.8	21.0	88.3	25.8	153.5	44.9	*28.7	*8.4	342.3	100.0
25–34	120.4	26.0	133.0	28.8	158.2	34.2	50.6	10.9	462.2	100.0
35–44	187.1	36.4	100.3	19.5	158.1	30.8	68.0	13.2	513.6	100.0
45–54	207.2	50.3	79.0	19.2	106.8	26.0	*18.5	*4.5	411.5	100.0
55–74	401.9	70.0	95.5	16.6	68.5	11.9	*8.0	*1.4	573.9	100.0
Birthplace and year of arrival										
Born in Australia	74.5	18.9	109.2	27.7	159.9	40.6	50.3	12.8	393.9	100.0
Born outside Australia	913.8	47.9	387.0	20.3	485.3	25.4	123.6	6.5	1 909.7	100.0
Arrived before 1981	609.3	53.3	223.2	19.5	259.5	22.7	51.9	4.5	1 143.9	100.0
Arrived 1981 or later	304.5	39.8	163.8	21.4	225.8	29.5	71.7	9.4	765.8	100.0
Age on arrival										
Under 16 years	122.1	24.0	131.3	25.8	207.1	40.7	47.9	9.4	508.5	100.0
16 years and over	791.8	56.5	255.7	18.2	278.2	19.9	75.6	5.4	1 401.3	100.0
Level of educational attainment										
With a post-school qualification	224.5	23.1	226.3	23.3	399.5	41.1	121.0	12.5	971.2	100.0
Bachelor degree or higher	*24.5	*7.4	67.9	20.4	158.3	47.6	82.0	24.7	332.8	100.0
Undergraduate or associate diploma	58.4	24.0	66.9	27.5	94.2	38.7	*24.0	*9.9	243.5	100.0
Skilled or basic vocational qualifications	141.5	35.8	91.4	23.2	147.0	37.2	*14.9	*3.8	394.8	100.0
Without a post-school qualification	763.9	57.3	270.0	20.3	245.7	18.4	52.9	4.0	1 332.5	100.0
Labour force status										
Employed	368.5	28.6	303.5	23.6	473.8	36.8	140.5	10.9	1 286.4	100.0
Unemployed	58.7	41.8	*28.4	*20.2	41.3	29.4	*12.2	*8.7	140.5	100.0
Not in the labour force	561.2	64.0	164.3	18.7	130.1	14.8	*21.2	*2.4	876.7	100.0
<b>Total</b>	<b>988.4</b>	<b>42.9</b>	<b>496.2</b>	<b>21.5</b>	<b>645.2</b>	<b>28.0</b>	<b>173.9</b>	<b>7.5</b>	<b>2 303.7</b>	<b>100.0</b>



## 5.8 FIRST LANGUAGE WAS NOT ENGLISH, SKILL LEVEL, By Language Characteristics

Language characteristics	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
PROSE SCALE										
Age learned to speak English										
Under 5 years	44.1	14.7	77.7	26.0	111.3	37.2	66.2	22.1	299.4	100.0
5 to under 10 years	169.9	24.8	233.4	34.0	205.6	30.0	76.7	11.2	685.7	100.0
10 to under 20 years	286.8	47.7	159.4	26.5	140.9	23.4	*14.8	*2.5	601.9	100.0
20 years and over	539.2	83.3	82.7	12.8	*23.0	*3.5	*2.8	*0.4	647.7	100.0
Can't speak English	69.1	100.0	–	–	–	–	–	–	69.1	100.0
Self-perception of English speaking skills										
Excellent or good	467.7	30.9	443.3	29.3	445.2	29.4	155.8	10.3	1 512.0	100.0
Moderate or poor	572.4	79.2	109.9	15.2	35.5	4.9	*4.8	*0.7	722.6	100.0
Can't speak English	69.1	100.0	–	–	–	–	–	–	69.1	100.0
Attendance at English language classes										
Attended in Australia	422.6	59.8	171.0	24.2	88.3	12.5	*24.8	*3.5	706.7	100.0
Attended only overseas	91.4	38.8	62.5	26.5	78.0	33.1	*3.7	*1.6	235.7	100.0
Have not attended classes	595.1	43.7	319.7	23.5	314.4	23.1	132.1	9.7	1 361.2	100.0
Language in which most at ease										
English	291.4	25.7	329.7	29.0	364.5	32.1	149.8	13.2	1 135.3	100.0
Other European languages	467.2	77.2	89.1	14.7	46.0	7.6	*3.2	*0.5	605.4	100.0
Asian languages	259.7	59.9	108.0	24.9	58.4	13.5	*7.7	*1.8	433.8	100.0
Other languages	90.9	70.4	*26.4	*20.4	*11.9	*9.2	–	–	129.1	100.0
Language usually spoken at home										
English	340.7	30.1	325.8	28.8	339.5	30.0	126.3	11.2	1 132.3	100.0
Other European languages	434.2	71.1	82.3	13.5	76.1	12.5	*18.0	*3.0	610.7	100.0
Asian languages	245.5	56.3	117.0	26.9	57.0	13.1	*16.3	*3.7	435.7	100.0
Other languages	88.7	71.0	*28.1	*22.5	*8.2	*6.6	–	–	125.0	100.0
<b>Total</b>	<b>1 109.1</b>	<b>48.1</b>	<b>553.2</b>	<b>24.0</b>	<b>480.8</b>	<b>20.9</b>	<b>160.6</b>	<b>7.0</b>	<b>2 303.7</b>	<b>100.0</b>
DOCUMENT SCALE										
Age learned to speak English										
Under 5 years	46.2	15.4	75.3	25.2	117.5	39.3	60.3	20.2	299.4	100.0
5 to under 10 years	149.4	21.8	210.2	30.7	253.9	37.0	72.1	10.5	685.7	100.0
10 to under 20 years	265.1	44.0	132.1	21.9	181.9	30.2	*22.8	*3.8	601.9	100.0
20 years and over	506.5	78.2	93.3	14.4	43.1	6.7	*4.7	*0.7	647.7	100.0
Can't speak English	69.1	100.0	–	–	–	–	–	–	69.1	100.0
Self-perception of English speaking skills										
Excellent or good	433.7	28.7	395.4	26.2	529.1	35.0	153.6	10.2	1 512.0	100.0
Moderate or poor	533.4	73.8	115.5	16.0	67.3	9.3	*6.3	*0.9	722.6	100.0
Can't speak English	69.1	100.0	–	–	–	–	–	–	69.1	100.0
Attendance at English language classes										
Attended in Australia	380.7	53.9	152.4	21.6	133.6	18.9	40.1	5.7	706.7	100.0
Attended only overseas	85.7	36.4	44.6	18.9	98.2	41.6	*7.2	*3.1	235.7	100.0
Have not attended classes	569.9	41.9	314.0	23.1	364.7	26.8	112.7	8.3	1 361.2	100.0
Language in which most at ease										
English	255.1	22.5	309.5	27.3	424.8	37.4	146.0	12.9	1 135.3	100.0
Other European languages	444.2	73.4	90.8	15.0	66.1	10.9	*4.3	*0.7	605.4	100.0
Asian languages	244.6	56.4	90.4	20.8	89.2	20.6	*9.6	*2.2	433.8	100.0
Other languages	92.4	71.6	*20.3	*15.7	*16.4	*12.7	–	–	129.1	100.0
Language usually spoken at home										
English	315.4	27.9	279.0	24.6	420.6	37.1	117.3	10.4	1 132.3	100.0
Other European languages	404.3	66.2	111.7	18.3	74.1	12.1	*20.6	*3.4	610.7	100.0
Asian languages	229.6	52.7	94.6	21.7	89.5	20.5	*22.1	*5.1	435.7	100.0
Other languages	87.0	69.6	*25.7	*20.6	*12.3	*9.8	–	–	125.0	100.0
<b>Total</b>	<b>1 036.3</b>	<b>45.0</b>	<b>511.0</b>	<b>22.2</b>	<b>596.5</b>	<b>25.9</b>	<b>159.9</b>	<b>6.9</b>	<b>2 303.7</b>	<b>100.0</b>

## 5.8 FIRST LANGUAGE WAS NOT ENGLISH, SKILL LEVEL, By Language Characteristics *continued*

Language characteristics	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
QUANTITATIVE SCALE										
Age learned to speak English										
Under 5 years	52.9	17.7	74.6	24.9	121.2	40.5	50.7	16.9	299.4	100.0
5 to under 10 years	148.3	21.6	194.7	28.4	268.7	39.2	74.1	10.8	685.7	100.0
10 to under 20 years	237.7	39.5	121.0	20.1	203.4	33.8	39.8	6.6	601.9	100.0
20 years and over	482.8	74.5	103.5	16.0	51.9	8.0	*9.4	*1.5	647.7	100.0
Can't speak English	66.6	96.4	*2.5	*3.6	–	–	–	–	69.1	100.0
Self-perception of English speaking skills										
Excellent or good	401.4	26.5	402.9	26.6	555.3	36.7	152.4	10.1	1 512.0	100.0
Moderate or poor	520.4	72.0	90.8	12.6	89.9	12.4	*21.5	*3.0	722.6	100.0
Can't speak English	66.6	96.4	*2.5	*3.6	–	–	–	–	69.1	100.0
Attendance at English language classes										
Attended in Australia	374.5	53.0	136.8	19.4	152.6	21.6	42.8	6.1	706.7	100.0
Attended only overseas	80.0	34.0	39.4	16.7	94.3	40.0	*22.0	*9.3	235.7	100.0
Have not attended classes	533.9	39.2	320.0	23.5	398.3	29.3	109.1	8.0	1 361.2	100.0
Language in which most at ease										
English	251.9	22.2	310.6	27.4	442.5	39.0	130.4	11.5	1 135.3	100.0
Other European languages	419.0	69.2	93.3	15.4	83.7	13.8	*9.4	*1.6	605.4	100.0
Asian languages	228.4	52.6	76.0	17.5	95.3	22.0	34.1	7.9	433.8	100.0
Other languages	89.2	69.1	*16.3	*12.7	*23.6	*18.3	–	–	129.1	100.0
Language usually spoken at home										
English	296.5	26.2	270.5	23.9	447.8	39.6	117.4	10.4	1 132.3	100.0
Other European languages	391.6	64.1	122.5	20.1	73.6	12.1	*22.9	*3.8	610.7	100.0
Asian languages	216.2	49.6	79.7	18.3	106.3	24.4	*33.5	*7.7	435.7	100.0
Other languages	84.0	67.2	*23.5	*18.8	*17.5	*14.0	–	–	125.0	100.0
<b>Total</b>	<b>988.4</b>	<b>42.9</b>	<b>496.2</b>	<b>21.5</b>	<b>645.2</b>	<b>28.0</b>	<b>173.9</b>	<b>7.5</b>	<b>2 303.7</b>	<b>100.0</b>

## 5.9 SELF-RATING OF READING SKILLS, By Prose Skill Level

Self-rating	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
ENGLISH WAS FIRST LANGUAGE										
Excellent or good	988.2	66.0	2 691.2	87.4	4 008.2	95.7	2 124.3	98.7	9 811.9	89.9
Moderate or poor	501.5	33.5	385.4	12.5	178.0	4.2	*27.6	*1.3	1 092.6	10.0
<b>Total(a)</b>	<b>1 498.2</b>	<b>100</b>	<b>3 078.7</b>	<b>100.0</b>	<b>4 188.2</b>	<b>100.0</b>	<b>2 152.0</b>	<b>100.0</b>	<b>10 917.1</b>	<b>100.0</b>
ENGLISH WAS NOT FIRST LANGUAGE										
Excellent or good	422.5	38.1	462.1	83.5	462.0	96.1	159.8	99.5	1 506.4	65.4
Moderate or poor	662.8	59.8	91.1	16.5	*18.8	*3.9	*0.8	*0.5	773.5	33.6
<b>Total(a)</b>	<b>1 109.1</b>	<b>100.0</b>	<b>553.2</b>	<b>100.0</b>	<b>480.8</b>	<b>100.0</b>	<b>160.6</b>	<b>100.0</b>	<b>2 303.7</b>	<b>100.0</b>

(a) Includes persons who had no opinion.

## 5.10 SELF-RATING OF MATHEMATICAL SKILLS, By Quantitative Skill Level

Self-rating	Level 1.....		Level 2.....		Level 3.....		Level 4/5.....		Total.....	
	'000	%	'000	%	'000	%	'000	%	'000	%
ENGLISH WAS FIRST LANGUAGE										
Excellent or good	660.5	42.8	2 261.3	73.1	3 688.7	89.6	2 095.8	97.0	8 706.2	79.7
Moderate or poor	873.0	56.6	830.1	26.8	430.1	10.4	64.5	3.0	2 197.7	20.1
<b>Total(a)</b>	<b>1 543.4</b>	<b>100.0</b>	<b>3 094.6</b>	<b>100.0</b>	<b>4 118.8</b>	<b>100.0</b>	<b>2 160.3</b>	<b>100.0</b>	<b>10 917.1</b>	<b>100.0</b>
ENGLISH WAS NOT FIRST LANGUAGE										
Excellent or good	556.3	56.3	424.6	85.6	585.2	90.7	168.3	96.8	1 734.4	75.3
Moderate or poor	427.0	43.2	71.6	14.4	60.0	9.3	*5.6	*3.2	564.1	24.5
<b>Total(a)</b>	<b>988.4</b>	<b>100.0</b>	<b>496.2</b>	<b>100.0</b>	<b>645.2</b>	<b>100.0</b>	<b>173.9</b>	<b>100.0</b>	<b>2 303.7</b>	<b>100.0</b>

(a) Includes persons who had no opinion.

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The opinions expressed in this article are those of the author and are not necessarily shared by the Australian Bureau of Statistics.

## INTRODUCTION

Since the growth of mass education in the late 1800s, western societies have assumed that education systems can provide the literacy skills needed by the adult population for their entire lives. Hence countries such as Australia have frequently reported literacy rates of nearly 100% on the basis of compulsory schooling exceeding four years, making allowance only for immigrants who were from a non-English-speaking background (UNESCO 1957, 1964; World Book Encyclopaedia 1986). The results of the SAL show the inadequacy of such an approach.

The SAL demonstrates that there is, in fact, a very wide range of reading skills which are affected by the difficulty of the text. Therefore there is no simple answer to the question 'How many people can't read?' The question has to be 'How many people can't read *something* for the purposes they need?' This approach emphasises the view of reading as an interactive process in which readers bring prior knowledge and experience to the text and use new information for their own purposes.

## PEOPLE AT LEVELS 1 AND 2 ON THE PROSE AND DOCUMENT SCALES

The results of the SAL suggest that nearly half the population are likely to have difficulty in consistently carrying out literacy tasks at Levels 3 to 5. Nevertheless, it is important to note that many Level 1 and Level 2 people can do some literacy tasks some of the time, depending on both the reader's experience and the particular features of the text and the task.

This article will describe the people who operate predominantly at Levels 1 and 2 on the prose and document scales and compare the features of literacy materials at different difficulty levels to show how the texts and tasks affect the way in which people can gain information and use everyday print materials.

## Where do Level 1 and 2 people live?

Across Australia, the proportion of Level 1 and 2 people was higher outside the capital cities than in the capital cities. In some States, the difference between the capital and non-capital city was marked. Tasmania showed the highest difference, from 44% for document literacy for Levels 1 and 2 in the capital city to 60% outside the capital. In Western Australia the proportion of Level 1 and 2 people outside the capital city was around 10 percentage points higher than in the capital for prose, document and quantitative literacy.

Compared with other States and Territories, a high percentage of New South Wales residents performed at Levels 1 and 2 (51%) for prose literacy and Tasmanian residents for document and quantitative literacy (53%, 52%). The Australian Capital Territory had the smallest proportion of people at Levels 1 and 2 (32% for prose and 31% for document literacy).

There is a temptation for direct causation to be assumed, that is, for the State that has the smallest proportion of residents at Levels 1 and 2 to attribute the results to wiser educational planning and systems. This would ignore several demographic differences between States that may impact on literacy acquisition and current skills, e.g. income, length of education, parents' education, patterns of external and internal migration, age of population and employment status.

#### Gender and age

Literacy skills related to gender and age are affected by such factors as access to education, length of education and the effect of labour force status on familiarity with types of text. There were more males at Levels 1 and 2 for prose literacy (49%; 45%) and more females for document literacy (45%; 50%). Fewer women than men tended to be at Level 1 in the younger age groups for prose and document literacy (e.g. 10% females and 20% males for 15–19 year olds on the prose scale).

Generally, the proportion of people at Levels 1 and 2 increased by age group. In the older age groups, more women were at Levels 1 and 2. For example, on the document scale, 81% of females aged 65 and over were at Levels 1 and 2 compared with 74% of males. This high proportion of the age group performing at Levels 1 and 2 indicates that written health instructions and other public information affecting senior citizens need to contain features of Level 1 and Level 2 text. It is important to note that 45% of 15–19 year olds were at Levels 1 and 2. This has implications for high school and post-school training programs which need to be appropriately pitched for these young people to gain new vocational skills as well as to continue to develop skills in using more difficult literacy materials.

#### Education of Level 1 and 2 people

Length of education is both a cause and an effect. People at Levels 1 and 2 tended to have less schooling than people at Levels 3 and 4/5. This reflects the opportunity to learn higher level literacy skills in the upper high school years, as well as the likelihood that students with skills at Levels 1 and 2 will not continue once learning depends on literacy materials at higher levels of difficulty. All of the people who never went to school performed at Levels 1 and 2 and compared with those at Levels 3 and 4/5, there were higher proportions of Level 1 and 2 people with less than eight years schooling. Of those at Level 1, 27% had less than eight years schooling and 53% had between eight and 11 years.

Interestingly, Level 1 and 2 people did not attend a higher number of schools than other performance levels, although frequent changes of schooling is often considered to be a reason for failure to acquire literacy skills.

### Labour force status of Level 1 and 2 people

Employment also affects reading skills at the same time as being affected by them. Employed people were not as likely to be at Levels 1 and 2 as people who were unemployed or those not in the labour force. For example, on the prose scale, some 38% of employed people were at Levels 1 and 2, 57% of unemployed people were at Levels 1 and 2, and 65% of those not in the labour force were at Levels 1 and 2 (with age being a related factor for this group).

### What reading tasks do Level 1 and 2 people do at work?

The SAL shows that many workers at Levels 1 and 2 do literacy-related tasks daily. For example, on the prose scale, some 17% of Level 1 and 26% of Level 2 workers read or use bills, invoices, spreadsheets or budget tables as a part of their main job. Some 22% of Level 1 and 23% of Level 2 workers use directions or instructions daily. On the other hand, 64% of Level 1 and 48% of Level 2 workers never use bills, invoices, spreadsheets or budget tables and 52% of Level 1 and 41% of Level 2 workers never use directions or instructions for any products. Welch and Freebody (1993) argue that demand for increased skills may not impact evenly across the population. Some jobs are deskilling operators in literacy usage. As work practices change, it is important that job designers acknowledge that Level 1 and 2 people are able to do literacy tasks which are familiar, explicit, highly contextualised and routine, so that the valuable work skills these workers bring to the workplace are not lost, and their communication skills are maintained and developed.

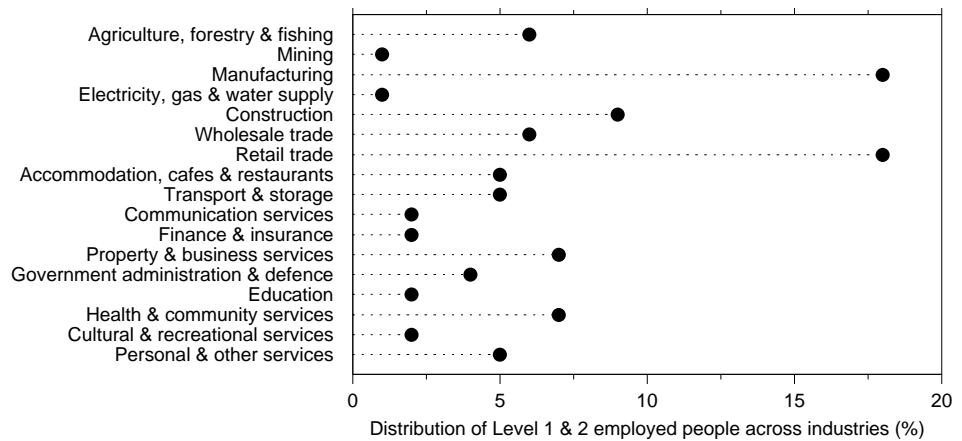
### What job-related training is done by Level 1 and 2 employed people?

Some 21% of employed people who were at Level 1 and 34% of employed people who were at Level 2 on the prose scale had undertaken at least one education or training course in the last 12 months. The courses were scattered across all types of training. Of employed people at Level 1 who had not done any training in the last 12 months, 62% stated that there were not any job-related courses they wanted to take. Of those at Level 2, the proportion was 52%; at Level 3, 36% and at Level 4/5, 25%. As people at Levels 1 and 2 are the most vulnerable part of the workforce and the least likely to have any formal qualifications, this finding is concerning at both the personal level of maintaining a job amidst increasing technology and rapid change and at the national level for increasing Australia's skills base. Further work is needed to investigate ways in which the benefits and opportunities of training can be marketed to employed persons who are at Levels 1 and 2 to increase their rate of participation in training to ensure that their skills remain current and useable.

### INDUSTRY

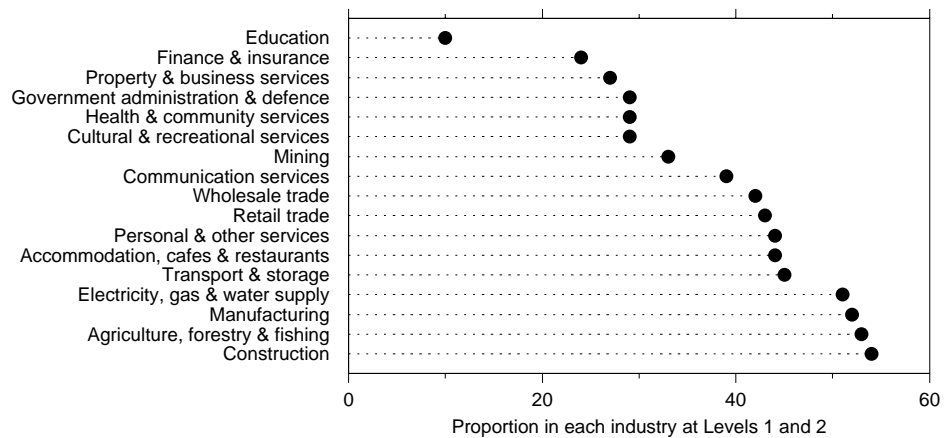
Some 18% of employed people performing at Levels 1 and 2 for prose literacy are in the Manufacturing industry and 18% are in the Retail trade industry. Graph 1 shows, of all employed people at Levels 1 and 2 (for prose literacy) the proportions that are in each industry.

**GRAPH 1** EMPLOYED PEOPLE AT LEVELS 1 AND 2 ACROSS INDUSTRIES



These results, of course, reflect the total number of employed people in the industry and also the traditional entry level requirements of industries. Hence, a small industry such as Electricity, gas and water supply accounts for only a small proportion of the total number of employed persons at Levels 1 and 2, even though within that industry the proportion of people at Levels 1 and 2 is relatively large. Also, in industries such as Manufacturing, where there have been large numbers of positions available for people without formal qualifications, the proportion of people performing at Levels 1 and 2 is high. This is more clearly shown by looking at the proportion of people performing at Levels 1 and 2 within each industry as shown in Graph 2.

**GRAPH 2** PROPORTIONS IN EACH INDUSTRY WHO WERE AT LEVELS 1 AND 2



More than half of those employed in Construction, Agriculture, forestry and fishing, Manufacturing, and Electricity, gas and water supply perform at Levels 1 and 2 for prose literacy. These people could have difficulty with many literacy tasks that are now taken for granted within the workforce, such as completing non-routine aspects of safety audits, following written safety procedures especially in new situations, completing an incident report and reading the minutes of safety meetings. In all industries, the introduction of new policies and legislation such as industrial legislation and new work practices such as quality assurance increases the demand on employees for reading, understanding and using complex documents with more responsibility placed on individuals to gather and record information. These changes within the workplace need to take into account the proportion of people within the industry who are likely to have difficulty with literacy tasks at Level 3 or higher or they may unnecessarily exclude these employees from the workplace and lose other valuable and reliable workplace skills. Seeking people with higher education to carry out the tasks usually done by Level 1 and 2 employees may not be a successful strategy unless the wage rates and career prospects of the jobs are enhanced.

Workplace changes such as multiskilling and the introduction of hi-tech machinery place higher literacy demands on employees because of greater variation in work which generally means that people need to rely more on written information. If an employee is required to do a task monthly rather than daily, there is less likelihood of depending on practised and rehearsed actions and employees will often need to refer to standard operating procedures. The increased dependence on print will impact more on industries where a large proportion of employees are operating at Levels 1 and 2. It is possible for job redesign to take into account the literacy level of the employees and ensure that literacy tasks are within the reach of employees, as well as to develop the literacy skills further through job-related training. To do this, the workplace literacy tasks must be recognised as core workplace competencies so that they will be incorporated into industry-based training packages.

Moves to enterprise-based training need to acknowledge the level of literacy skill of such a significant proportion of the workforce who may be asked to assist in training apprentices. While they may have excellent practical skills and knowledge of the enterprise, Level 1 and 2 employees are likely to have difficulty understanding training materials and assessment tasks unless the terminology is highly familiar, relevant and concrete.

#### What tasks can Level 1 and 2 people do?

Most Level 1 tasks require the reader to locate one explicit piece of information where there are no distractors. Using a reproduction of a Medco Aspirin pack, readers were required to answer:

*What is the maximum number of days you should take this medicine?*

In the text, the only number next to the word 'days' is the correct answer, meaning the task is easy because there are no distractions. The item is also easy because the sentence containing the answer is short and set out from the other text so the reader does not have to search through a whole paragraph. Nevertheless, readers have to transfer the wording of the question which uses the term 'maximum' to the phrase in the text 'for not longer than.'



Considering the very high numbers of people aged 60 and over who were performing predominantly at Level 1, and the higher need for medications of people in this age group, it is important that medicine labels and medical instructions are kept at the explicit level of Level 1 tasks and that information is not only given through print but is backed up by clear oral explanations and coaching from medical support staff.

Level 2 adds distractors and some low level inference, and may require integrating information from various parts of the text or document. The following examples relate to a reproduction of an order form for some tickets to attend *Les Miserables*. The task states:

*Pat Evans wants to order two \$25 tickets to see Les Miserables on Saturday evening, October 29.*

Examples of Level 2 tasks are the first two items requiring the reader to complete the date and the time. In these items, the reader firstly has to work out the intention of the question. That is, the reader has to know to pretend to be Pat Evans filling in the form and to understand that she has already filled in a part of the form. Familiarity with tests as well as forms will make this easier.

Features of the text that would have been difficult for Level 1 people include: the purpose and meaning of the question; familiarity of ordering tickets by completing a form rather than ringing or buying at the counter of a movie cinema; the foreign word title of the show and lack of knowledge of the form. The first item required filling in the date. This required an inference that it should be the date required for the performance which was stated in the question and not the current date which is usually the date required on a form.

Part of the difficulty for Level 2 people is holding more pieces of information while another piece is sought. Document tasks, in particular, require the reader to work out the category in which the reader will find or place some information. This is demonstrated by a reproduction of an advertisement requiring the reader to identify the effective maximum yearly interest rate for a long-term line of credit of \$20,000. All the information in the task is given in exactly the same terms as in the advertisement, keeping it at a Level 2 task. The reader has to choose the section of the table called 'long-term lines of credit', probably refer back to the question and decide to look for the amount of \$20,000, match this with the row of the table, look across at the heading 'effective annual interest' and then choose 'maximum'.

This type of task is very frequently used in workplaces in manuals, catalogues, price lists, accounts and timetables. It is important that the words used in the headings are the most commonly used terms and are not made short in order to fit the column at the expense of losing their meaning. Level 2 people can often use relevant, routine texts of this type quite proficiently because of their high product knowledge, knowledge of terminology and routine use. If this type of text is required by Level 2 people, the remainder of the text around the table needs to be kept at the same level of difficulty, especially if it provides information about non-routine cases.

### Increased difficulty of Levels 3 and 4/5 tasks

Tasks at Level 3 add the dimension of requiring the reader to integrate information from dense or lengthy text without the aid of headings and to integrate multiple pieces of information from one or more documents as well as selecting from information that is irrelevant or inappropriate. Level 3 tasks include information given to the public about government services, using a bus timetable for specified conditions, interpreting information from editorials and lengthy articles.

One Level 3 task ('Quick Copy Printing Requisition') requires the reader to state whether 'Quick Copy' can do a job of 105 pages to distribute 300 copies. The reader has to identify the part of the form that specifies the limits of runs. The numbers given in the question are not repeated in the text so the reader has to combine pieces of information to work out that as the order is over 100 pages and more than 200 copies are required, 'Quick Copy' could not do it unless it split the job. This task also requires basic concepts of number such as more than and less than.

A further task is to explain the answer on paper. Although the readers were not judged for the accuracy of their writing skill, the task still requires putting the answer in words ('generating' an answer) to state the two specifications, which together, mean that the job does not fit into the guidelines. 'Meaning is not transmitted absolutely from text to reader, but is itself relative. It is relative to: the implied questions, purposes, ways of making sense of and taking sense from the world the reading brings; the context and nature of particular reading tasks, as well as to the demands and nature of the texts.' (Grant 1986b).

This type of task requiring readers to assess whether a particular case fits into set criteria frequently occurs in the workplace and in vocational training. The performance of Level 1 and 2 people shows that when safety and productivity are involved as for example, in the efficient use of agricultural chemicals, the instructions need to be very clear and should not require the reader to make inferences or integrate multiple pieces of information. In employment-based training, assessment tasks should not inadvertently raise the level of difficulty of job-related tasks. The difficulty level of a task or text can shift up one or more levels with slight variations in the text and with different prior knowledge of a particular set of readers. The answers that readers give and their explanations for those answers, can provide insight into the effect of elements of the text on comprehension.

### CONCLUSION

Overall, for both the prose and document literacy dimensions, nearly 48% of the population are at Levels 1 and 2. As the level of difficulty of the tasks increased, more Level 1 and 2 people did not attempt the tasks. Recent developments in critical literacy (Gee 1990) illustrate the impact of the relationship between the author and the reader and the value placed on the text by the reader. Such factors affect not only readers' understanding of the message but also their attention to print, a factor that advertisers understand very well. Hence it is important for those who provide print information to the public to know more about the skills and attitudes to text that Level 1 and 2 people, a large segment of the population, have in order to maximise their understanding and their willingness to use print materials.

The SAL provides a way to study performance on certain literacy tasks that are generally taken for granted as tasks that adult Australians can do. The survey reinforces that literacy is not a neutral set of definable skills (Street 1984). Importantly, it shows people providing written information to the public, the features of texts and tasks that are likely to be understood. The wide variety of tasks contained in the SAL demonstrates a shift from the traditional concept of functional literacy where minimal reading competency was taken to be the ability to decipher a simple written passage.

In the SAL literacy includes skills such as the ability to analyse and summarise and the ability to interpret passages inferentially as well as literally. The SAL shows that many Level 1 and 2 people have literacy skills that they can use. It is up to those needing to communicate with them to understand the complexity of the process of reading and not only take into account what people are able to read and comprehend but also what they are likely to read, register, and pay sufficient attention to in order to relate new information to their own situation.

**THE QUANTITATIVE LITERACY  
PERFORMANCE OF AUSTRALIANS:  
IMPLICATIONS OF LOW SKILL LEVELS . . . . .**

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The opinions expressed in this article are those of the author and are not necessarily shared by the Australian Bureau of Statistics.

INTRODUCTION

The Survey of Aspects of Literacy outcomes indicate that the quantitative literacy skill levels for the Australian population as a whole are: 19% at Level 1, 27% at Level 2, 36% at Level 3, and 18% at Level 4/5. These percentages translate into approximately: 2,532,000 people at Level 1, 3,591,000 at Level 2, 4,764,000 at Level 3, and 2,334,000 at Level 4/5.

Australians with Level 4/5 skills are considered capable of managing the quantitative literacy demands of everyday life, including the demands of personal and social activities, and work and education or training activities. Level 3 skills are considered sufficient to handle most demands although not all at a proficient level.

Level 2 performance indicates that some difficulty is expected in handling effectively the demands of everyday life, while a Level 1 standard indicates a group who will experience considerable difficulties. To 'cope' and to 'function effectively' are very different strategies that affect quality of life.

This discussion focuses on the characteristics of those who were grouped at Levels 1 and 2 on the quantitative literacy tasks, that is, the Australians experiencing difficulty. What does this outcome mean for these people and for Australian society? What is quantitative literacy meant to represent? What should be done?

QUANTITATIVE LITERACY

Quantitative literacy involves making sense of printed material in terms of its arithmetic and computational demands and being able to follow through on these demands. It is not mathematics in the school sense but requires a person to be able to read and understand text and embedded mathematics. These types of materials surround us: instructions on a paint tin, a cooking recipe, a knitting pattern, medicines, tax forms. The 32 quantitative skill tasks in the survey were not about how much mathematics education people have had, or about how much 'difficult' mathematics they have learned. The tasks were about information that is presented to us frequently. The findings of the survey indicate that over six million Australians could have some difficulty adequately using such information.

Surveys such as this raise the issue of how well the survey tasks replicate everyday approaches to such activities. After all, if the findings of the study conflict with notions of an educated society, it may seem preferable to reject the results and the way they were obtained. However, this is difficult to do. Firstly, the results were obtained from standard sets of tasks completed by Australians during individual interviews. Australia had one of the lowest non-participation rates of international countries. Personal experience in collecting similar information has shown that most people are happy and earnest in their involvement.

The survey tasks do have to have a form that is not quite lifelike, although the materials used for questions are drawn from real life examples. There is no evidence that the style of the tasks could not be handled by those interviewed. If this were to be true, then people would not have been successful on any tasks. Yet, as an example discussed later shows, success rates were different for connected tasks belonging to one item. This difference, then, is one of ability in quantitative literacy, not ability to cope with the task format.

What are the skill levels described by Levels 1 and 2 in quantitative literacy?

Consideration of two tasks in the survey can help to demonstrate differences in performance between the two levels as well as the types of difficulties Australians at these skill levels could encounter in daily life.

The survey form showed a pictorial advertisement for the musical 'Les Miserables' containing a simple order form partially completed. The advertisement provided information on performance dates, times and prices. The task was:

*Pat Evans wants to order two \$25 tickets to see Les Miserables on Saturday evening, October 29. Finish completing the order form on the opposite page to place the order.*

This required completion of six tasks which involved filling in different parts of a column on the form: insertion of the date (given), the time (from advertisement), price of one ticket (given), number of tickets (given), Total for Tickets ( $\$50 = 2 \times \$25$ , to be calculated), and the Total with Handling ( $\$2$  (specified) to be added to the ticket total).

Completion of the 'Total with Handling' computation was a Level 1 task. It was judged 'correct' if the Total with Handling was the correct sum of \$2 plus whatever amount was entered for the Total for Tickets, regardless of the accuracy of the latter calculation. The relatively high success rate on this part indicates understanding of the purpose, ability to read the text apart from the quantitative demands, and completion of all aspects of the task. Unsuccessful completion of this part may be due to: inability to read the task itself, inability to do the addition of \$2 accurately, or lack of recognition that the 'Total with Handling' line needed to be completed. Overall, however, for a large majority of Australians this was a straightforward task.

What might surprise many, however, is that the completion of the Total for Tickets (\$50) was a sufficiently more difficult task to be identified as a Level 2 task. That is, there was a considerable proportion of Australians who could handle the whole question, complete the previous requirement, but who did not calculate \$50 as the cost of the two tickets. Again, lack of success may be due to: inability to calculate  $2 \times \$25$  accurately, calculating the price for only one ticket regardless of the instructions in the question, or choosing another ticket price and number from the advertisement. Some may consider the last response a reasonable and lifelike approach to the task. But re-read the instructions for the whole question and consider the directness and explicitness of the information. What are the implications of success on the Level 1 task but failure on the Level 2 task for capacity to follow work instructions, to undertake education or training successfully, or to complete simple computational tasks?

Over six million Australians have been identified as having quantitative literacy skills at Levels 1 and 2. They were generally not successful on tasks from higher levels that required similar calculations to those discussed but also involved comparison of two amounts, subtraction of one amount from another, reading of graphs and tables, or higher textual demands in interpreting the questions. Consider the materials, information and quantitative literacy that surround Australians in every aspect of their lives. How adequately can those with only Level 1 and 2 skills be making use of and responding to these demands?

#### Characteristics of people with Levels 1 and 2 quantitative skills

While nearly half (46%) of Australians have skills at Levels 1 and 2, gender, language backgrounds and age are significant factors related to these skills.

An estimated 14% of Australians who spoke English as their first language were identified at quantitative literacy Level 1 compared with 43% of Australians who first spoke another language. For both Levels 1 and 2, and for the different language backgrounds, fewer men were at Levels 1 and 2 than women.

However, while a greater proportion of those Australians who first spoke a language other than English had Level 1 or 2 skills, in absolute terms there are more people whose first language was English at these levels. Some 1.5 million English-first-language speakers were at Level 1 compared with approximately one million other first language speakers.

Age factors provide more detail about the characteristics of those at Levels 1 and 2 with English as their first language. About 15% of the 15–19 year old men and women with English as their first language had skills at Level 1, while men and women aged 20–44 had the lowest proportions at Level 1, approximately 9% to 10%. Similar age profiles have emerged consistently across nations over time. They are generally interpreted to reflect both educational status and recency of participation in education, and familiarity and practice with the types of materials involving quantitative literacy. Larger proportions of men (26%) and women (32%) aged 20–44 who first spoke a language other than English were at Level 1, compared with those whose first language was English.

Educational opportunities and familiarity working with materials requiring quantitative literacy may also explain gender differences for the age range 45–54 years. Some 12% of men who spoke English as their first language in this age group had Level 1 skills, compared with 15% of women. For those with other first language backgrounds, 44% of men and 58% of women in this age group had Level 1 quantitative literacy skills.

The major differences are for older men and women, however. For those who first spoke English, 21% of men and 31% of women aged 55–74 years had skills at Level 1. For other language backgrounds, 68% of men aged 55–74 years were at Level 1, and 72% of women. In almost all groups of older Australians at Level 1, however, the actual number of English-first speakers at Level 1 is greater than that of other language backgrounds, due to our population distribution.

The gender and age factors indicate that educational and work opportunities have considerable effect on skill levels. Is there evidence in the survey findings to indicate the reverse, that is, that skill levels affect employment and job opportunities?

There were considerable differences in the likelihood of having worked in the last 12 months (paid employment or equivalent) between those at Level 1 (45%) and others (Level 2: 69%; Level 3: 81%; Level 4/5: 90%). This is confounded by age and gender factors; about 21% (520,000) of those at Level 1 were aged 65–74 and 11% of all women at Level 1 (147,000) had never worked. The differences in the proportion of those who have worked may therefore be due to different educational opportunities, age and life experiences. However, it is also possible that low skill level is a barrier to employment.

No apparent evidence of casualisation of the labour force emerges for those with low skill levels who had jobs. Similar proportions of Australians across skill levels reported they worked 1–15, 16–24, 25–34, 35–39 or more than 39 hours per week. There was a tendency for those with high level quantitative literacy skills to be working longer hours, but nearly half of all workers indicated working more than 39 hours per week in their main job.

Educational attainment is strongly related to quantitative literacy. Only 14% of those with a Bachelor degree were at Levels 1 and 2, while for those with higher degrees even smaller proportions were at Levels 1 and 2, with nearly 93% at Level 3 or higher.

For those with a skilled vocational qualification, however, nearly 14% were at Level 1 and 42% were identified with Level 1 or 2 skills. For early school leavers, again likely to be influenced by age and gender, almost 76% of those who left school at age 13 years or under were at Level 1 with a further 18% at Level 2. For those still at school, a group likely to include 15–18 year olds, special education students and older migrant students, some 15% had only Level 1 skills.

#### Quantitative skill levels and work undertaken

As 38% of those Australians who had worked in the last 12 months had only Level 1 or Level 2 quantitative literacy skills, it is important to explore the types of quantitative literacy their jobs demanded. Results are surprising, showing both that workers with low skill levels did not perceive their job as entailing a number of quantitative literacy demands, but with a considerable number engaged in such activities.

Approximately 60% of Level 1 workers reported never using a manual or reference book and another 10% used one less than once a week. Similarly, 66% of those at Level 1 never used diagrams or plans, with another 9% using them less than once a week, and 66% never read or used a bill, invoice, spreadsheet or budget table with approximately another 8% doing so less than once a week. However, this does mean that over a quarter of these workers do work with such materials at least once a week.

At Level 1, 87% of people indicated they never used estimates or technical specifications, 90% never used or used them less than once a week, but about 10% indicated that they did use them at least once a week. At Level 2, 15% used such materials at least once a week. An estimated 22% of Level 1 workers and 32% of Level 2 workers indicated that they worked out prices, costs or budgets a few times a week or more in their work. Consider the types of tasks that assessed these skill levels. The possibility is that such workers may not have the skills to be doing such tasks properly, affecting not only consumers but also the commercial viability of their own or employers' businesses.

## IMPLICATIONS

This discussion has focussed on Australians with low skills in quantitative literacy, particularly those with skills at Level 1. Some 2.5 million Australians are within this category. No matter how the results are examined and interpreted, and which age, gender or cultural groups are removed or isolated, the findings of the study for a country that considers itself well-educated and literate do not invite complacency. We should not be satisfied. Australians at Level 1 are likely to have considerable difficulty in working appropriately with the quantitative literacy demands of their work, training and the personal and social aspects of their lives. Issues arise in areas such as health care and prevention, finances, dealings with government and other authorities, and opportunities to participate fully in many aspects of Australian society.

The people in this category can be divided into several broad groups, and issues concerning policy and provision to meet their different needs should be considered for each group.

Firstly, young Australians aged 15–24 have reasonable levels of quantitative literacy skills. Yet even here, the question needs to be asked, can more be done? Schools and universities have not been shown to be delinquent in their preparation of young people but a proportion, some 15% of those still at school have Level 1 skills. How can these be better addressed? What are the implications for employability and training opportunities for these young Australians?

A second group are those who are currently in work or training. The findings indicate that a large number of Australians who are working and who speak English as their first language do not have the quantitative literacy skills to deal with even the simplest demands of their jobs. This group constitutes the largest in numbers of those with low skills. What implications are there for the quality of this workforce, work productivity, for their work opportunities and for their capacity to undertake further skilling and training? What opportunities need to be provided? How can this section of the workforce be identified and assisted?



The third group are those in middle age who first spoke a language other than English. Again, what implications are there for their work or capacity to work, to understand and respond to Australian bureaucratic and institutional demands, to use health care and other community services effectively? How can their needs be best addressed?

Finally, there are those Australians in the older age groups. The findings indicate that many of these will have difficulty dealing with the quantitative demands of many documents relating to age and health benefits, financial dealings and everyday life. Yet this age group perhaps has to confront more complex documents related to these areas than most other Australians. How can their needs be best addressed?

The general conclusions to be drawn are that, firstly, we need to continue to recognise that despite our general educational standing, Australia still has a large number of people who have limited skills for the demands of everyday life. Even apparently simple information can have high quantitative literacy demands, and certainly demands that exceed the skills of this group of Australians. The response must lie in examining what we are doing presently to provide educational and training opportunities, particularly for the young and middle-aged.

Finally we must examine the ways in which information is presented for those who are older and the assistance that is provided to help its dissemination and interpretation. Ironically, the greatest assistance presently available is for those for whom English was not their first language, although they do not constitute the largest group in absolute terms. More systematic forms of assistance are necessary for older English-speaking Australians.

**LITERACY, NUMERACY AND THE LABOUR MARKET** .....

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## INTRODUCTION

Knowledge of literacy skills can provide considerable information on a person's labour market performance. In this study the links between literacy skills and labour force status (employment, unemployment and not in the labour force) are examined. The occupational distributions and levels of socio-economic status of the employed are also examined at different literacy levels. Then the focus shifts to the unemployed and the extent to which unemployment duration is related to literacy.

## MEASURES OF LITERACY AND NUMERACY

A variety of measures of literacy and numeracy skills are available from the SAL. These include self-perception of English reading and writing skills, of mathematical skills, and test-based measures of prose, document and quantitative literacy.<sup>2</sup> There are several interesting differences between males and females in these measures. Literacy levels also are strongly related to whether English was the first language spoken.

The self-rated measures of literacy and basic numeracy have four categories: excellent, good, moderate and poor. Between 80% and 90% of individuals who spoke English as their first language rate their reading, writing and mathematical skills as either excellent or good. Females are more likely than males to rate their reading and writing skills as excellent or good (by four to eight percentage points) while the opposite holds for mathematical skills. Among individuals who did not speak English as their first language, the percentage who rate their English reading and writing skills as either excellent or good is about 25 percentage points lower than in the case where English was the first language spoken. Self-rating of mathematical skills, however, yields a similar level of proficiency for the two language groups, and this is consistent with mathematics being a universal language.

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<sup>1</sup> Part of the research for this paper was conducted while Professor Chiswick was a Visiting Professor in the Department of Economics at the University of Western Australia.

<sup>2</sup> Self-perception data for English speaking proficiency are available only for individuals whose first spoken language was not English. Data are available for literacy skills in general, and on literacy skills in the workplace. Only the former are examined in this analysis.

The test-based scale of literacy has five levels (labelled 1 to 5), each of which requires successively higher orders of skill. These are collapsed into four in the data available for analysis (with the two highest levels being aggregated). Prose literacy refers to the ability to understand and use information in various kinds of contextual material. Document literacy is the ability to process information contained in documents (e.g., tables, forms) while quantitative literacy refers to the ability to perform arithmetic operations. As the latter involves operations embedded in printed (English) material, this measure of quantitative literacy will assess knowledge different from that where the arithmetic operations are all explicit and which might serve as the reference point for the self-rating of mathematical skills.

The test-based assessments show that males have higher levels of document and quantitative literacy than females, and that the skills of individuals whose first language was not English are inferior to the skills of individuals who spoke English as their first language. Note that the distribution of the various groups across skill levels in the case of quantitative literacy is similar to that for prose and document literacy. The tests of prose, document and quantitative literacy each examine aspects of reading skills, and hence this similarity is expected.

## THE LABOUR MARKET

The data from the SAL show that literacy and numeracy skills are inextricably linked to labour market outcomes. These data on labour force outcomes by literacy/numeracy level are summarised using two statistics, the labour force participation rate (Table 1) and the unemployment rate (Table 2). The labour force participation rate is defined as the sum of the employed and unemployed (i.e., the labour force) in a particular group as a percentage of the total number in that group. The unemployment rate is the number unemployed in any group as a percentage of the labour force for that group.

Reading across the rows of Table 1, it is seen that labour force participation rates decline with lower levels of literacy/numeracy, whether self-rated or test-based. This decline tends to be greater for females than for males, and greater among individuals who spoke a language other than English as their first language.

**TABLE 1** LABOUR FORCE PARTICIPATION RATES, By Literacy Skills

	Males.....				Females.....			
	%	%	%	%	%	%	%	%
SELF-RATING								
	Excellent	Good	Moderate	Poor	Excellent	Good	Moderate	Poor
English was the first language spoken								
Reading skills	85.5	80.3	70.9	51.8	70.4	55.1	42.0	*37.8
Writing skills	87.3	81.3	74.3	52.5	72.7	57.7	42.1	*25.4
Basic maths skills	88.0	79.9	72.6	53.6	77.4	61.3	48.1	33.7
English was not the first language spoken								
Reading skills	88.1	74.5	68.1	42.0	73.6	60.0	37.8	*13.4
Writing skills	86.9	80.2	65.2	47.3	74.9	58.8	54.7	13.9
Basic maths skills	84.8	70.3	54.8	*47.8	75.7	50.8	39.7	*20.5
TEST-BASED SKILL LEVEL								
	4/5	3	2	1	4/5	3	2	1
English was the first language spoken								
Prose scale	91.3	85.5	79.8	62.3	80.4	70.3	53.3	33.3
Document scale	88.9	86.6	78.7	60.4	83.4	72.5	55.8	33.7
Quantitative scale	90.7	85.3	76.7	61.0	81.8	72.1	56.9	36.7
English was not the first language spoken								
Prose scale	95.7	85.8	79.4	59.5	72.8	76.9	63.8	32.5
Document scale	96.6	86.4	72.8	58.4	79.5	73.7	64.0	31.5
Quantitative scale	92.4	86.5	72.3	56.4	81.4	72.0	62.5	32.0

Lower levels of labour force participation among those who lack basic literacy/numeracy skills could both be the consequence of a third variable. Education is one such variable: the better educated are more likely to participate in the labour market and to possess higher levels of skills complementary to their formal education, including literacy skills. The relatively low levels of labour force participation at the lower levels of literacy may also be a response to inferior job opportunities among those who lack basic literacy/numeracy skills. The extent to which inferior job opportunities influence behaviour will depend on factors such as the strength of the 'discouragement' effect, in particular on factors such as earnings and the unemployment rates at the various levels of literacy/numeracy skill.

**TABLE 2** UNEMPLOYMENT RATES, By Literacy Skills

	Males.....				Females.....			
	%	%	%	%	%	%	%	%
SELF-RATING								
	Excellent	Good	Moderate	Poor	Excellent	Good	Moderate	Poor
English was the first language spoken								
Reading skills	6.1	7.0	14.2	*18.8	4.9	7.7	11.3	13.5
Writing skills	4.5	7.8	12.8	*12.8	5.1	6.4	*11.7	*14.0
Basic maths skills	5.8	6.3	12.5	*26.3	4.0	7.0	6.6	*27.3
English was not the first language spoken								
Reading skills	*6.4	10.6	*13.7	*22.8	*4.8	*9.0	*13.5	*19.0
Writing skills	*5.6	*10.4	*15.2	*17.4	*6.7	*8.2	*8.7	*16.8
Basic maths skills	*9.0	*9.2	*18.6	*26.1	*4.8	*11.6	*4.6	*30.9
TEST-BASED SKILL LEVEL								
	4/5	3	2	1	4/5	3	2	1
English was the first language spoken								
Prose scale	*3.6	5.0	8.3	19.1	*3.1	6.1	5.8	18.7
Document scale	*3.1	4.8	9.5	20.8	*3.9	4.5	6.7	17.8
Quantitative scale	3.5	5.2	8.6	23.7	*3.7	4.5	6.6	16.8
English was not the First Language Spoken								
Prose scale	*12.0	*9.1	*7.7	13.4	*4.4	*9.0	*8.4	*10.4
Document scale	*11.8	*6.5	*10.2	14.6	*5.2	*8.3	*6.6	*12.7
Quantitative scale	*8.9	*7.1	*13.4	13.9	*6.6	*9.3	*4.1	*13.5

Note: Estimates in the table for individuals who first spoke a language other than English are subject to high sampling errors and should be interpreted with caution.

There is a negative relationship between unemployment rates and literacy/numeracy skill levels; that is, unemployment rates tend to rise as the level of literacy and numeracy falls.

For both males and females who first spoke English the pattern is quite clear. For both self-ratings and test based measures there are pronounced increases in unemployment rates with reductions in skill levels.

Data for persons who first spoke a language other than English are subject to relatively high sampling errors, nevertheless, there are interesting patterns. For males, the self-rated pattern is similar to that of males who first spoke English. However, when the test-based measure is examined, it appears that unemployment rates are not closely linked to literacy in the intermediate levels. For females (whose first language was not English), self-rated skills are again linked to unemployment rates in a negative way, but where skill levels are test based, improvements in literacy are not always associated with reductions in unemployment rates.

These differences between the self-rated and test-based measures are intriguing. It may be that labour market outcomes help form the subjective rating, and this is why the pattern of unemployment rate effects is much sharper when the self-rated measures are examined. This, however, leaves unexplained the apparent differences between individuals who first learned to speak a language other than English and those who spoke English as their first language.

## LITERACY AND EMPLOYMENT SUCCESS

Examination of labour market performance among the employed illustrates further advantages associated with superior levels of literacy/numeracy. For space reasons, only a cursory examination of the data is provided. In particular, the study is restricted to self-perceptions of reading skills, and to a comparison of those who rate their reading skills as either excellent or moderate. Occupational attainment is used as the measure of labour market success.<sup>3</sup>

The occupational distributions for persons with excellent and moderate reading skills differ appreciably (Table 3). Indeed, from Table 3 it is seen that individuals whose reading skills are self-rated as moderate are far less likely than those with excellent skills to be employed in Professional occupations. They are more likely to be employed as Labourers and related workers. Two useful summary measures are provided by the Duncan index of dissimilarity and the ANU3 socio-economic status scale. The Duncan index of dissimilarity is interpreted in this study as showing the proportion of individuals who rate their English-reading skills as moderate that would have to shift across occupations to achieve the same occupational distribution as their counterparts who rate their English-reading skills as excellent.<sup>4</sup> The ANU3 scale is a synthetic scale of socio-economic status. It has a range from 0 to 100 and, in the Australian labour force, a mean of 35.<sup>5</sup>

The values of the Duncan index for males are 32.1% and 37.3% respectively for those who spoke English as their first language and those who first spoke a language other than English. The latter value, for example, indicates that among the group who first spoke a language other than English, 37.3% of those who rate their English reading skills as moderate would have to move to a different occupation if the occupational distributions of the excellent and moderate readers are to be identical. For females the respective values are 30.5% and 46.7%. As these figures are similar in magnitude to the measures of occupational segregation on the basis of sex in the Australian labour market, it would appear that language and literacy skills are major determinants of occupation attainment, and the effect is larger for women than for men.

<sup>3</sup> While income is a preferred measure in many studies, the income data in the SAL has a non-response rate of 13%, and this varies with language group. Moreover, the income data are not standardised for hours worked in the cross-tabulations currently available, and this complicates the study of income differences across literacy levels. As similar research objectives can be achieved through the study of occupations, this is the approach adopted here.

<sup>4</sup> For details on the Duncan index of dissimilarity, see O.D. Duncan and B. Duncan, 'A Methodological Analysis of Segregation Indices', *American Sociological Review*, Vol. 20, pp. 210–217.

<sup>5</sup> For details on the ANU3 scale, see F.L. Jones, 'Occupational Prestige in Australia: A New Scale', *Australian and New Zealand Journal of Sociology*, Vol. 25, No. 2, pp. 187–199.

**TABLE 3** SELECTED LEVELS OF SELF-RATED READING SKILLS, Occupation

Occupation	FIRST LANGUAGE WAS ENGLISH				FIRST LANGUAGE WAS NOT ENGLISH			
	Males.....		Females.....		Males.....		Females.....	
	%	%	%	%	%	%	%	%
	SELF-RATING							
	Excellent	Moderate	Excellent	Moderate	Excellent	Moderate	Excellent	Moderate
Managers and administrators	15.4	12.4	7.1	*9.1	15.3	*5.4	*5.5	*6.5
Professionals	20.0	*3.6	18.6	*4.2	24.5	*1.3	15.1	*3.6
Para-professionals	9.4	*5.8	8.7	*2.7	*6.5	*4.4	*2.8	*3.1
Tradespersons	16.6	30.0	3.0	*5.8	15.2	40.1	*3.8	*11.4
Clerks	7.2	*3.5	29.4	*19.3	*7.7	*6.0	32.7	*8.7
Salespersons and personal service workers	11.3	*5.9	23.6	25.8	*9.5	*9.2	32.5	*21.1
Plant and machine operators, and drivers	7.7	19.6	*0.6	*3.8	*7.8	*9.1	*0.4	*9.5
Labourers and related workers	12.4	19.2	9.0	29.4	13.4	*24.6	*7.1	*36.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
	OTHER MEASURES							
Duncan Index	32.1	n.a.	37.3	n.a.	30.5	n.a.	46.7	n.a.
ANU3 Score	36.6	25.8	35.7	25.6	37.6	23.3	33.3	22.7

The values of the ANU3 scale for the various language skill groups are listed at the foot of Table 3. They show a marked difference between the mean socio-economic status of individuals who rate their reading skills as excellent and those who rate their reading skills as moderate. For example, among males who first spoke a language other than English, the mean ANU3 score is 38 for excellent readers and 23 for moderate readers. A difference of 15 points on this scale is equivalent to a shift from the Clerical group to Managers and administrators, or a shift from Plant and machine operators and drivers to Clerks. Reading deficiencies thus appear to prevent access to the better jobs.

LITERACY AND UNEMPLOYMENT DURATION

Literacy and numeracy skills may impact upon a person's duration of unemployment (Table 4). Due to the small sample sizes, the moderate and poor reading groups are combined in this presentation.

**TABLE 4** DURATION OF UNEMPLOYMENT, By Self-rated Reading Skills

Duration of unemployment	Males.....			Females.....		
	Excellent	Good	Moderate or poor	Excellent	Good	Moderate or poor
	%	%	%	%	%	%
.....						
English was the first language spoken						
Under 52 weeks	73.0	68.7	57.1	85.8	66.3	*73.8
52 weeks and over	27.0	31.3	*42.9	*14.2	*33.7	*26.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
English was not the first language spoken						
Under 52 weeks	*61.6	*46.6	*46.0	*94.1	*77.3	*52.1
52 weeks and over	*38.4	*53.4	*54.0	*5.9	*22.7	*47.9
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Note: Estimates in the table for individuals who first spoke a language other than English are subject to high sampling errors and should be interpreted with caution.

In comparison with individuals who rate their reading skills as excellent, individuals who rate their English reading skills as either good, moderate or poor are more likely to be in the longer unemployment duration category. For example, among unemployed males who spoke English as their first language, and who rate their reading skills as excellent, around 27% are in the 52 weeks or more duration category. At the other end of the spectrum, among males who spoke English as their first language who rate their reading skills as moderate or poor, 43% are in the longer duration category. Language skills would appear, therefore, to have an impact on the likelihood of successful job search among the unemployed.

CONCLUSION

This cursory examination of data from the SAL shows that literacy and numeracy affect the likelihood of an individual participating in the labour market, and also affect the likelihood of obtaining a job given that the decision has been made to try to become a member of the paid labour force. Literacy and numeracy skills affect the type of work that is undertaken by the employed, with the better jobs going to those with higher levels of literacy and numeracy. Among the unemployed, unemployment durations are greater among individuals with English language deficiencies. Literacy and numeracy are therefore important contributors to labour market success.



**PUBLIC POLICY AND LITERACY RESEARCH  
DATA: WILL KNOWING LEAD TO DOING? ....**

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The opinions expressed in this article are those of the author and are not necessarily shared by the Australian Bureau of Statistics.

## INTRODUCTION

Although the Organisation for Economic Cooperation and Development (OECD) considers adult literacy problems 'a serious threat to economic performance and social cohesion' (OECD 1992), for Australian literacy professionals 'the one thing that can be said with certainty about ... adult basic education in Australia is that it is elusive, ever-changing and incomplete' (Wickert & Zimmerman 1991).

For the OECD the policy lessons to be drawn from statistical evidence of literacy problems in industrialised countries depend on having more data, and especially more comparable international data (1995). Accordingly a group of OECD countries undertook the International Adult Literacy Survey (IALS) during 1994. Subsequently, in conjunction with the second round of the IALS, Australia conducted the 1996 Survey of Aspects of Literacy, one aim of which was to: 'provide statistical support for planning and decision making' (ABS 1997).

It is tempting to believe that there is a direct correspondence between evidence of need and public policy responses. This would require a rational connection between the generation of knowledge and consequent policy action. The history of adult literacy education provision in Australia does not, however, give us grounds for any such confidence. The relationship between evidence and action is mediated by many factors, interests, ideology and values, which make this relationship less than straightforward.

## KNOWING ABOUT LITERACY PROBLEMS AND DOING SOMETHING ABOUT

Evidence, admittedly not statistical, though nevertheless serious, of literacy problems in the Australian army in 1943–44 did not lead to action (Nelson 1989; Wickert & Zimmerman 1991), and successive government reports through the 1970s only produced intermittent interest in the field (Dymock 1982). Systematic action for adult literacy provision only occurred when the issue became absorbed into beliefs about the interaction between the economy and education levels. More recently, emergent globalisation with its stress on relative international competitiveness has sustained a case for adult literacy policy. These considerations elevate interest in a flexible and more educated workforce, a prime objective of national economic competitiveness. However they can have the effect of making many important aspects of effective literacy teaching for adults vulnerable to neglect and may also result in displacing the role of expert professional knowledge as to the nature of programs that are provided, curriculum planning and assessment of outcomes.

There has emerged a conflict between a sort of 'economy-interfacing' priority that governments have required of adult literacy policy and programs and a 'learner-advocacy' which professionals and students demand (Brooks 1996). To many teachers and academics literacy work is moral and political (Luke 1992) and its appropriation to labour market priorities both distorts the essentially humanistic goals that have historically sustained it and produces policy interventions which have at best only had limited success.

Adult-literacy tutors struggle to reconcile conflicts between the stated priorities of government policy and the perceived needs and wants of students (Forbes 1996). Program planners and curriculum writers are challenged to design educationally effective responses to policy framed around contested notions of literacy and its purposes (Brooks 1996). Students differ greatly in their responses to programs depending on whether their language background is English or another language (Plimer & Reark Research 1995). Literacy scholars also criticise expedient politics around literacy which sometimes gives the false impression that adults with literacy difficulties are ineducable, invariably unemployed or even unemployable, and socially incompetent (Black 1995).

Adult-education teachers and students need reassurance that statistical evidence from surveys does not lead to government programs harnessed entirely to labour market priorities such that the principles of effective literacy teaching to adults are lost. Curriculum and program diversity are cardinal points of importance for the field; its practitioners and its participants.

#### PAST EVIDENCE OF ADULT LITERACY PROBLEMS IN AUSTRALIA

Evidence of adult literacy problems among the adult population in Australia has been drawn principally from three sources, army studies of the 1943–44 period, the research of Judith Goyen in Sydney in the mid 1970s and again in 1985, and the first nationwide survey by Rosie Wickert in 1989. The present survey is by far the largest and most detailed examination of the distribution and characteristics of adult literacy and numeracy.

Goyen's study, using a criterion referenced test on a sample of 1,000 Sydney residents, supplemented in 1985 by other data, found that 10% of her sample (56% of those of non-English birthplace and 4% of those of English-speaking birthplace) were 'functionally illiterate in English'. This resulted in an extrapolated incidence of 10% of functional adult illiteracy.

Wickert's survey involved 1,496 respondents nationwide, the youngest of whom would have left primary school in the early 1980s, the oldest at about the time of World War I. People with fewer than six years of schooling and those over the age of 60 were found to have the greatest literacy problems; with the numerical total comprising about one million people. This figure came to represent the official representation of literacy difficulties among the adult population in Australia (Department of Employment, Education and Training 1992).

The Wickert study examined the interaction of a number of socio-economic variables with literacy proficiency, either on three dimensions of literacy (prose, document and quantitative) or in relationship to specific literacy items.

In Wickert's study, up to 20% of the population responded incorrectly on half of the 24 performance items with the performance of non-English-speaking background respondents being significantly lower overall. Some 45% of the non-English-speaking sample compared with 21% of the English-speaking background sample was in the lowest performance quartile of the general population; whereas 26% of English-speaking background respondents were in the top quartile, a position occupied by only 11% of those respondents not of English-speaking background.

This 24% difference is accounted for by language background factors among the lowest performing respondents and 15% difference for the highest, with non-English-speaking background respondents being greatly over-represented in the former and under-represented in the latter category.

#### SURVEY OF ASPECTS OF LITERACY: SOME RESULTS

The SAL is an empirical examination of an ordered set of information processing skills. These skills represent the relationship between task difficulty and individual proficiency via the principle of consistent mastery. The major aspects of information processing for the literacy dimensions are locating, integrating, generating, with the addition of cycling for document literacy.

Although recent national policy (Department of Employment, Education and Training 1991a) aimed specifically to reduce the literacy difficulties of Australian adults, the evidence from the survey strongly suggests that in 1996 a significant proportion of Australians still have low levels of literacy skills. Statistical evidence of need once again justifies a reinvigorated national literacy policy for Australia, but past failures in policy demand that the input of literacy practitioners, and students, shape and guide new interventions.

Adult Australians' literacy skill levels are remarkably uniform across the three literacy dimensions assessed. Virtually 20% of Australians between the ages of 15 and 74 years are located at Level 1 for prose, document and quantitative literacy tasks, indicating an 80% probability of correct response to the tasks that typify the scale range for that level. This does not mean that these respondents may not achieve above Level 1, rather that they consistently perform successfully at the level they have been assigned and only infrequently succeed above this level.

Just under 30% of adult Australians function at Level 2 for each dimension of literacy and approximately 36% at Level 3. Levels 4 and 5 are aggregated because the numbers are otherwise too low for detailed analyses; between 16% and 18% of Australian adults function at these levels in each assessed dimension of literacy.

#### SELF-PERCEPTION COMPARED WITH ASSESSED SKILL LEVELS

The SAL collected information about people's perceptions of the adequacy of their own literacy skills (reading, writing, and basic mathematics) for the needs of their daily life and for their job; it also derived an objective assessment of skill level. It is acknowledged that there are conceptual differences between these two measures, however the extent and direction of the discrepancy between the two is high and consistent — sufficient to suggest a broadly consistent pattern of overestimation and underestimation of actual abilities.

Approximately one-quarter of those who consider their English reading skills for the needs of daily life to be excellent assess at Levels 1 and 2 on the prose dimension; 59% of those who perceive these skills to be good assess at Levels 1 and 2 and 84% of those rating themselves moderate are in fact also at Levels 1 and 2. However 98% who rated themselves as poor were also at these levels.

On the document literacy dimension the figures are similar: 30% of those who self-perceive their reading for the needs of daily life as excellent are actually assessed at Levels 1 and 2; along with 58% of those who rated themselves good. This means that more than 41% of respondents overestimate their reading for the needs of daily life as either good or excellent when it is in fact at Levels 1 and 2; on the other hand 69% of those who consider their reading for the needs of daily life excellent assess at or above Level 3.

There are similar overestimations for English writing skills for daily life compared with assessed prose skills. About one-quarter of those who claim excellence and more than half of those who perceive their skill level as good in fact assess at Levels 1 and 2 and so do more than three-quarters of those who claim a moderate English writing skill for daily life needs. Those more accurately estimating their skill are the 31% who rate themselves excellent and assess at Level 4/5. Some 10% rate at Levels 4 and 5 but claim only to be good; with a rather modest group of 4% who state their skill as moderate when in fact they are assessed at Level 4/5.

Self-estimation of mathematical skills is no more accurate than the estimation of reading and writing skills. It is sometimes thought that there is less social stigma attaching to an admission of difficulty with numbers than with written language but overestimation may not indicate stigma or shame, simply inaccurate awareness of the literacy or numeracy demands of given tasks. Some 23% of those self-perceiving their mathematical skills as excellent for daily life needs assess in quantitative literacy tasks at Levels 1 and 2; whereas 77% of this group assess at Levels 3 and 4/5; with fully a third scoring and accurately estimating a Level 4/5 performance. Some half of those indicating they are good, in fact score at Levels 1 and 2 along with 77% of those who claimed moderate mathematical skill.

In general, overestimations tend to be greater than underestimations and seem to follow a broad pattern: about one-quarter of those who rate themselves excellent, about one-half of those who rate themselves good and about three-quarters of those who rate themselves moderate. Whether the overestimation is due to psychological factors or simply inadequate awareness of the typical literacy demands of given tasks is unclear. The numbers who judge themselves to be good or excellent in all dimensions but assess at the lowest levels are broadly similar and consistently high across tasks and populations. On the other hand the numbers who self-perceive as poor but are in fact assessed at Level 4/5 are virtually in all cases too low for statistical validity.

## LANGUAGE BACKGROUND AND PLACE OF BIRTH

The SAL provides crucially important and unique data about the impact of language background, language use patterns, place of birth and related variables on English literacy performance. The overall effect of these is to isolate language background characteristics as highly significant predictors of literacy performance in English. These findings are especially relevant since language policy has previously been influenced by inaccurate calculations of the proportion of those adults with literacy difficulty who were of English or not of English first language (Department of Employment, Education and Training 1991a; Wickert & Kevin 1995). The SAL also offers important data about the perception-skill relationship and some indicators about language differences.

The assessed prose skill of all persons was correlated more strongly with language first spoken (English/not English) than with place of birth or year of arrival in Australia. Whereas 42% of those who had English as the first language spoken assessed at Levels 1 and 2, and 58% assessed at Levels 3 and above, the figures for those for whom English was not the first language were 72% and 28% respectively. Overall 42% of those born in Australia rank at Levels 1 (14%) and 2 (28%) compared to 61% of all people born overseas; the figures for the high performers being equally stark: 58% at Levels 3 and above for the locally born while the figure falls to 39% for those not born in Australia. Birthplace predicts a significant bipolar distribution of prose performance.

The disparity is further accentuated for document literacy skills. For those with English as a first language 44% rank at Levels 1 and 2 whereas the figure rises to 67% for those with a first language other than English. These performance scores are mirrored for high level performance, with 56% of English-first-language-speakers at Levels 3 and above on the document scale compared with 33% for those with other languages as their first language. Place of birth predicts a smaller disparity on this dimension than first language: those born in Australia have a virtually identical assessed performance to those of English as a first language, whereas those born overseas perform about 10 percentage points better at upper and lower ends of the scale than those for whom English was not the first language, with the results on the quantitative dimension a close parallel.

When those born outside Australia are further subdivided into those of English and not of English first language categories a strong relationship is revealed. Those of English first language not born in Australia perform slightly better than those whose first language was English born in Australia whereas those without English as their first language who were born overseas score at 78% at the lowest two levels on the prose dimension but only 22% at Levels 3 and above.

A similar relationship between place of birth and language first spoken is evidenced for document skill level. Overseas born English first language speakers slightly outperform Australian born English first speakers, whereas overseas born respondents whose first language was not English are grossly over-represented at the lowest assessed levels, between 25% and 30% more than all other categories; and much more poorly represented at the highest levels (between 25% and 30% less well-represented) at Levels 3 and 4/5.

The quantitative skill dimension further corroborates the determining influence of first language on assessed skills; exacerbating lowest level performance. Although quantitative literacy measures the ability to perform arithmetical operations, it nevertheless is deeply enmeshed with language since the mathematical and computational instructions and skills are encased in English. Due to this they appear to represent a double cognitive processing demand (second language plus mathematical skill). If this is true there would be a compounding effect of spoken English knowledge, quantitative literacy performance and first language literacy/numeracy level.

## LANGUAGE USE

A series of variables allows us to see what effects various non-English first languages, their use, and the respondents' perceived level of literacy in them, have on English literacy performance measures.

Large sections of the data gathered to assess the effects of language use patterns and English literacy skills are not however statistically reliable. However, those data which are not subject to high sampling error reveal a strong pattern, a marked skew for those who spoke English at home with higher English prose performance. Whereas respondents who usually spoke English at home reveal an overall distribution of 15% at Level 1; 28% at Level 2; 38% at Level 3 and 19% at Level 4/5 no other language usually spoken at home has reliable figures for levels higher than Level 1. The reason is a dramatic over-representation at Level 1: respondents who usually spoke Italian at home were 86% at Level 1 prose assessed skill; Greek, 72%; Cantonese, 55%; Arabic, 68%; Vietnamese, 75%; Croatian, 81%. No other individual language results were reliable.

It is interesting to note the disparity between longer established southern European immigrant language groups and the relatively better performance of more recently arrived Asian and other language groups. This finding is supported by an aggregation of other European languages which accounts for a 57% Level 1 score and an aggregated Other Asian Languages of 47% at Level 1, with no other estimates being reliable.

In a composite Other Languages category, 73% of people are at Level 1. Despite the sampling variability a strong finding is revealed indicating a correlation of language use with literacy performance difficulties in English among all people who usually spoke a language other than English at home and among southern European groups particularly.

As with prose literacy skills the results on the document literacy dimension reveal the very significant advantage constituted by English as a language usually spoken at home. The differences at the only reliable level, Level 1, are extreme: compared with 15% of those for whom English was the language usually spoken at home the figures are: for Italian, 85%; Greek, 66%; Cantonese, 55%; Arabic, 68%; Vietnamese, 63%; Croatian, 76%. The proportions in the Other Languages category reflect the same pattern; high overall, higher for European than Asian and highest for Other (non-European and non-Asian). There is little departure from this picture for language usually spoken at home by assessed quantitative literacy.

## RELATIONSHIP WITH PERCEIVED FIRST LANGUAGE COMPETENCY

Despite high first language reading and writing perceived competency, for those whose first language was not English, assessed prose, document and quantitative literacy is either unaffected by this self-perception or negatively correlated with it.

This is a counter-intuitive finding. It would normally be predicted that a high level of literacy capability in a first language would transfer into literacy in a second language, in this case English, especially if the writing systems of the two languages were similar, say roman script in the case of English. However, three-quarters of those who claim excellent first language reading capability perform at Levels 1 and 2 in the English prose literacy assessment, as do 83% of those who rate their competence as good.

Since there is a high overestimation of skill among those who spoke English as a first language, it may also be the case that similar overestimation applies amongst those whose first language was not English; or that the first language literacy is not actively used in a dominantly English societal environment and consequently misunderstood to be stronger than it may actually be. However, it may also be that people's literacy skills in their own language are actually better than their English literacy skills. The data do not tell us about this, however, merely that there is little positive flow from high first language self-estimations to empirically assessed English prose skill.

Similar findings hold for self-assessed excellent writing skills in the first language for prose literacy. Similarly assessed quantitative literacy appears unaffected by first language self-perceptions of competency.

The proportions for quantitative literacy are marginally improved. In these ratings self-perception of excellent first language reading and writing correlate, with 37% of people who rated their reading skills as excellent assessing at Levels 3 and 4/5, while the same self-estimation for first language writing generates a 36% result at Levels 3 and 4/5 for English quantitative skill. These compare to 33% at Levels 3 and 4/5 for excellent first language reading self-rating in document skill, and 31% for the same self-estimation in first language writing.

There may be a slightly better mathematics transfer from the first to the second language, though the effect is small.

## DISCUSSION

Literacy difficulties among adults are serious and pervasive; these difficulties are underestimated (by both the population and by public policy); immigrants of non-English first language origins are over-represented among the lowest performers; recent policy attempts to tackle the issue have made little impact. These general and the many specific findings will help target future policy interventions more closely, maximising the chances of success.

The data also provide evidence of literacy acquisition and literacy attrition suggesting multi-directional relationships between literacy capability, the language demands of employment and society.

In discussions of adult literacy attention often turns to the role of compulsory education. Education is not a satisfactory proxy measure of literacy. Adult literacy capability is much more than the projected effect of schooling. Life experiences, immigration, work experiences and pre-educational factors (such as parental education levels and experiences), disparities between first language and dominant societal language, daily literacy practices, a greater complexity of written language forms and practices, technology and its impact; all matter and vary.

For these reasons the SAL cannot be considered a report card of the effectiveness of school education. Rather it is more like a barometer of some aspects of the practice and culture of literacy within adult Australian life.

In addition there is a complex age relationship: young people are not always at the highest skill levels; although in general the young are much more literate than older Australians.

The SAL provides compelling statistical evidence of adult literacy problems and sufficient justification for a comprehensive national program of literacy planning and basic education for adults. The survey amply justifies the need for an overarching policy that specifically addresses literacy.

#### WHAT SORT OF POLICY IS NEEDED?

In the past the demonstrated existence of literacy problems alone did not stimulate effective policy action. What has stimulated policy change has been beliefs about average education levels in the labour force and the claimed effect of these on economic performance. Globalisation and the widely argued need for relative competitiveness have also sustained a policy interest in literacy.

If literacy issues are perceived principally as a problem for individuals (no matter for how many) they tend to be construed as a social welfare issue and removed from their proper presence in comprehensive policies for lifelong learning and adult education. In addition (however justified concerted action to improve school literacy achievements may be) low levels of adult literacy are not a problem that can be adequately addressed by adopting an 'eradicated' approach based in early schooling. We cannot rely totally on schooling, and especially on early schooling, because there are too many adults with literacy problems, and because of the context-varying nature of literacy which is such that the literacy demands of complex modern society, and technology, are too great and rapidly changing for a permanent school-based solution ever to succeed. As the knowledge content of jobs rapidly evolves, and low-skill production is displaced or reallocated new job literacy demands require on-the-job literacy education as part of general workplace training programs. Achieving success for many learners will, however, require programs designed around personal, community and family settings and contexts rather than in vocationally oriented, or job-training, programs.

Given the clear pointers in the SAL about the interaction of spoken English use and literacy performance scores it is clear that an effective policy intervention must also incorporate a distinctive place for English as a second language teaching.



An overarching, and comprehensive policy is required, one based on the principles of life long learning for all and characterised by curriculum diversity, models of learning that are participatory and supportive, one that brings about a greater equality of access in adult education generally and insists on a plurality of provisions in which community and home-based delivery modes are not neglected (Grant 1986a).

The quantitative data of the SAL provides compelling support for the development of a policy of provision. Such a policy may be driven by quantitative objectives, such as increasing the proportion of Level 3 performers relative to those at Levels 1 and 2.

However, qualitative research, and the professional opinion and experience of practitioners and field experts, as well as the advocacy and interests and rights of the students, actual and potential, are essential to designing a policy for practice. Policy works best if there is wide collaboration in its design, delivery, modifications, evaluations and impact at all levels. Policy must be sensitive to literacy problems beyond their economic effects alone and address citizenship and social participation issues as well as individuals' personal motivations and goals.

#### MEASURING FUTURE PROGRESS

The point in time measures provided by the SAL are valuable, but because of differing scope and methodological approaches, only general comparisons can be made with previous data. In order to monitor changes in Australia's literacy levels it is critical that provision be made for similar studies by the ABS in the future. Such studies will need to be accompanied by qualitative research which examines literacy as a social practice and which includes an opportunity for respondents to indicate what is valuable in literacy. In this way we could assess the actual effects and consequences of differential literacy skill and the impact of policy intervention.

## EXPLANATORY NOTES .....

### RESULTS OF THE OBJECTIVE ASSESSMENT OF LITERACY SKILLS

**1** The Survey of Aspects of Literacy (SAL) was conducted between May and July 1996. The survey consisted of two parts: first, a personal interview in which socio-demographic characteristics and literacy and numeracy background information were collected, and second, a set of tasks undertaken by respondents which provided an objective assessment of some aspects of their English literacy skills.

**2** This publication contains information from the second part of the survey, the objective assessment of literacy skills.

### THREE TYPES OF LITERACY

**3** The SAL assessed three types of literacy skills.

#### Prose literacy

**4** Prose literacy is the ability to understand and use information from various kinds of prose texts, including texts from newspapers, magazines and brochures.

**5** The skills required to use prose texts include locating information in the text, integrating two or more pieces of information, and generating information by processing information from the text or by making text-based inferences.

**6** The difficulty associated with using a prose text is affected by features such as the length, density and content of the text; by the use of organisational aids such as headings, bullets, and special typefaces; and the number of categories of information a reader must process.

#### Document literacy

**7** Document literacy is the ability to locate and use information contained in materials such as tables, schedules, charts, graphs and maps.

**8** The effective use of documents depends partly on being able to locate information in a variety of displays taking various conditions into account, to integrate information from different parts of the document, to generate information by processing information from the document or by making inferences, and to transfer information from one source to another, for example when completing order forms.

**9** Characteristics of documents which affect how difficult they are to use include the structure and content of the document and the number of categories of information the reader must process.

#### Quantitative literacy

**10** Quantitative literacy is the ability to perform arithmetic operations using numbers contained in printed texts or documents.

**11** The effective use of numbers contained in printed material involves being able to locate numbers and extract them from material that may contain similar but irrelevant information, and being able to perform arithmetic operations when the operations to be used must often be inferred.

**12** The difficulty associated with extracting numbers contained in text and performing arithmetic operations to obtain the appropriate result is affected by the particular arithmetic operation to be used, the number of arithmetic operations, the extent to which the numbers are embedded in printed materials, and the extent to which the operation to be performed must be inferred.

**13** This type of literacy clearly has a strong element of numeracy. However, because quantitative literacy relates to the ability to extract and use numbers from printed texts and documents, for the purposes of the SAL and this publication, it is referred to as a type of literacy.

## SKILL LEVELS

**14** The SAL did not define literacy in terms of a basic threshold, above which someone is 'literate' and below which someone is 'illiterate'. Rather it defined literacy as a continuum for each of the three types of literacy (consistent with international practice, these are also referred to as the prose, document and quantitative *scales*) denoting how well people used material printed in English. Progression along this continuum was characterised by increased ability to 'process' information, for example to locate, integrate, match and generate information, and to draw correct inferences based on the information being used.

**15** For analytical purposes, the scores on the literacy continuum for each of the three types of literacy were divided into five levels. However, it should be noted that because the tasks used to derive literacy ability vary in difficulty, there is a range of abilities even among people within each level.

Level 1 (lowest) to Level 5 (highest)

**16** The skills of people at each level, ranging from Level 1 (lowest) to Level 5 (highest) are as follows:

- Level 1 — People at this level have very poor skills, and could be expected to experience considerable difficulties in using many of the printed materials that may be encountered in daily life. Some people at this level display the ability to locate a single piece of information in a relatively short piece of text, to enter a piece of information onto a document, or to perform simple arithmetic operations using numbers provided. However, Level 1 also includes those who could not successfully complete such tasks.
- Level 2 — People at this level could be expected to experience some difficulties in using many of the printed materials encountered in daily life. While they would be able to use some printed material, this would generally be relatively simple, short and clearly structured, or require simple arithmetic operations to be performed on numbers that are easily determined from the source text.
- Level 3 — This level represents the ability to cope with a varied range of material found in daily life and at work. People at this level would not be able to use all printed material with a high level of proficiency, but they would demonstrate the ability to use longer, more complex printed material. They would be able to take conditional information into account, to make inferences, to compare and contrast information, and to extract numbers embedded in complex displays and perform more varied arithmetic operations.

- Level 4 — People at this level have good literacy skills, and display the ability to use higher order skills associated with matching and integration of information, with making higher order inferences and with performing arithmetic operations where either the quantities or the operation to be performed are not easily determined.
- Level 5 — People at this level have very good literacy skills, and can make high-level inferences, use complex displays of information, process conditional information and perform multiple operations sequentially.

## PERSONS INCLUDED IN THE SURVEY

### Geographical areas

**17** The SAL was conducted in both urban and rural areas in all States and Territories, but excluded some 175,000 persons living in remote and sparsely settled areas of Australia. The exclusion of these persons has only a minor impact on aggregate estimates for individual States and Territories, with the exception of the Northern Territory where such persons account for over 20% of the population.

### Dwellings

**18** The SAL covered private dwellings only, including houses, flats, home units, and any other structures used as private places of residence at the time of the survey.

### Persons

**19** The SAL covered persons aged 15–74 who were usual residents of private dwellings, excluding:

- overseas residents in Australia;
- certain diplomatic personnel of overseas governments, customarily excluded from the census and estimated resident population figures; and
- members of non-Australian defence forces (and their dependants) stationed in Australia.

## TOPICS COVERED

**20** The SAL collected information on self-perception of literacy and numeracy skills and assessed skill levels (prose, document, quantitative), along with a range of background information which was grouped into the following main areas:

- socio-demographic information;
- health;
- labour force;
- education and training;
- language and literacy;
- parents' characteristics; and
- income.

See Appendix B for a list of data items for each of these topics.

## HOW THE INFORMATION WAS COLLECTED

## Timing

**21** The survey was conducted over nine weeks from 1 May to 5 July 1996.

## Sample selection

**22** Dwellings were selected at random using a multi-stage area sample of private dwellings. One person per dwelling was selected at random to participate in the survey.

## Sample size

**23** The initial sample for the survey consisted of 13,008 dwellings. After allowing for sample loss (e.g. households selected in the survey which had no residents in scope for the survey, derelict buildings, buildings under construction) the sample yielded 9,302 (87%) completed survey interviews.

## Collection method

**24** The SAL was conducted in respondents' homes by interviewers with previous experience in ABS household surveys. To ensure that a standardised approach was employed by interviewers, comprehensive training in survey concepts, definitions and procedures was provided.

**25** The first component of the survey was an interview. Respondents were asked a series of questions to obtain background information of a socio-demographic nature, and information about their perceptions of their own literacy and numeracy abilities, about their literacy-related practices in daily life and at work, and about their use of different languages.

**26** The second component of the survey was an objective assessment of literacy skills. After the interview was completed, the respondent was asked to complete a booklet containing six relatively simple literacy-related tasks. Respondents who completed two or more of these correctly were then given a much larger variety of tasks in a separate booklet which contained, on average, 46 tasks drawn from a pool of 108. Respondents were asked to use the textual materials provided in the booklet to complete these tasks. Those who did not correctly complete at least two of the tasks from the first booklet were not asked to attempt the more difficult tasks in the second booklet.

**27** Interviewers administered the second component of the survey in a neutral and non-threatening manner, encouraging respondents to attempt as many tasks as possible. There were no time limits, and no assistance was allowed. Tasks covered each of the three types of literacy, and were at varying levels of difficulty.

**28** Respondents' answers to the tasks (after classification as 'correct', 'incorrect', or 'not attempted') were then used to derive a proficiency score for each type of literacy ranging from 0 to 500, with 0 representing the lowest ability and 500 the highest. These scores were then grouped into five literacy levels, each being distinguished by qualitative differences in the skills required to succeed at that level.

**29** Appendix A provides a detailed description of the methodology used for the second component of the survey.

## BENCHMARKING

**30** Estimates obtained from the survey were derived using complex ratio estimation procedures with benchmarking to independently estimated distributions of the population. For further information refer to the Technical Notes.

## DATA QUALITY

## Use of a proven methodology

**31** To derive measures of skill levels, the SAL used a methodology which had been developed and tested for the International Adult Literacy Survey (IALS) by Statistics Canada, and the Educational Testing Service, a leading private testing organisation in the United States of America. This methodology has been shown to be valid for producing population estimates of literacy abilities and to be a stable measurement tool across different countries. To ensure the methodology was suitable in the Australian context, an independent evaluation of the methodology was conducted by a panel of Australian experts in the fields of language and literacy.

## Sampling error

**32** Estimates calculated from the SAL are based on information collected from a sample. As a result they are subject to sampling error (or sampling variability). For further information on the sampling errors associated with the SAL, refer to the Technical Notes.

## Non-sampling error

**33** Apart from the variability associated with sampling error, data are also subject to other types of error referred to as non-sampling error. Non-sampling errors may occur because of imperfections in reporting by respondents or recording by interviewers, poor questionnaire design, and errors in processing data.

**34** Testing of survey procedures was carried out to investigate respondent reaction and to ensure the effectiveness of survey instruments, interviewing procedures and processing systems.

**35** Non-response occurs when people cannot or will not cooperate, or cannot be contacted. Non-response can affect the reliability of results and can introduce a bias. The magnitude of any bias depends upon the extent of the difference between non-respondents' characteristics and literacy patterns and those of persons who responded to the survey. Weighting can partially correct these biases to the extent that weighting variables capture the characteristics of non-respondents.

**36** The following methods were adopted to reduce the level of non-response:

- face to face interviews with respondents;
- the use of foreign language interviewers where necessary;
- follow-up of respondents if there was initially no response; and
- weighting to population benchmarks to reduce non-response bias.

**37** Potential sources of response errors in the SAL include questionnaire design and methodology; deficiencies in interviewing technique; and inaccurate reporting by respondents.

**38** The SAL questionnaire was thoroughly tested to minimise potential errors caused by ambiguous or misleading questions, by inadequate or inconsistent definitions or terminology, or by poor questionnaire sequence guides (causing some questions to be missed).

**39** Methods employed to achieve and maintain uniform interviewing practices and a high level of accuracy in recording answers on the survey questionnaires included:

- a thorough training program;
- a detailed interviewer's instruction manual;
- the use of experienced interviewers; and
- checking of interviewers' work.

**40** Processing errors may occur at any stage between initial collection of the data and final compilation of statistics. Steps were taken to minimise errors at all stages of processing, including:

- training of staff, detailed coding instructions and regular checking;
- computer edits designed to detect reporting or recording errors;
- the use of standard question modules; and
- the use of Optical Mark Recognition to reduce data entry error.

## COMPARABILITY OF DATA

### Other ABS data

**41** To facilitate comparison of data from the SAL with that from other collections, wherever possible, the SAL used standard question modules from other ABS surveys. However, caution should be used when comparing data across collections due to differences in scope, sample size and design, definitions and estimation methodology.

### International data

**42** The surveys conducted by countries participating in the IALS use the same methodology and have many data items in common. As a result, much of the information obtained from the SAL may be compared with that obtained by other countries participating in the IALS, allowing for differences in survey operations and response rates.

## DATA DISSEMINATION

### Information papers

**43** Three information papers about the SAL have been issued:

*Information Paper 1/95: General overview*

*Information Paper 1/96: Dissemination of results*

*Information Paper 2/96: List of variables available from the survey*

Copies of these are available from the Internet at <http://www.abs.gov.au>, or on request.

### Special tabulations

**44** As well as releasing information in publications, the ABS can make available special tabulations to suit individual user requirements. These can be provided in printed form or on disk. Subject to confidentiality and sampling variability constraints, tabulations can be produced from the SAL incorporating data items, populations and geographic areas selected to meet individual requirements. Inquiries should be made to the contact officer listed at the front of this publication.

## Other ABS publications

**45** Users may also wish to refer to the following publications which are available from the ABS:

*Aspects of Literacy: Profiles and Perceptions, Australia* (Cat. no. 4226.0)

*Australian Social Trends* (Cat. no. 4102.0)

*Education and Training in Australia* (Cat. no. 4224.0)

*Labour Force, Australia* (Cat. no. 6203.0)

*Labour Force Status and Educational Attainment, Australia* (Cat. no. 6235.0)

*Labour Force Status and Other Characteristics of Migrants, Australia*  
(Cat. no. 6250.0)

*Transition from Education to Work, Australia* (Cat. no. 6227.0)

## International publication

**46** The Organisation for Economic Cooperation and Development (OECD) and Statistics Canada have jointly released results of the first IALS in a publication entitled *Literacy, Economy and Society: Results of the first International Adult Literacy Survey, 1995*.

## SYMBOLS AND OTHER USAGES

**47** An explanation of the symbols used in the publication tables is provided below:

n.a. not applicable

– nil or rounded to zero

\* subject to sampling variability higher than 25% (see Technical Notes for explanation of sampling variability)

Because estimates have been rounded, discrepancies may occur between sums of the component items and totals.



**LITERACY PERFORMANCE ON THREE SCALES:  
DEFINITIONS AND RESULTS.....**

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The methodology used to derive literacy skill levels was developed and tested for the International Adult Literacy Survey by Statistics Canada and the Educational Testing Service (ETS) in the United States of America. This appendix describes this methodology. Any requests for more detailed information should be directed to the author, Irwin Kirsch of the ETS.

The performance results for the International Adult Literacy Survey (IALS) are reported on three scales — prose, document and quantitative — rather than on a single scale. Each scale ranges from 0 to 500. Scale scores have, in turn, been grouped into five empirically determined literacy levels. Each of these levels implies an ability to cope with a particular subset of reading tasks. The balance of this appendix reports the proficiency achieved on each scale by adults in each participating country, and explains how to interpret this data by describing the scales and the kinds of tasks that were used in the test and the literacy levels that have been adopted.

While the literacy scales make it possible to compare the prose, document and quantitative skills of different populations and to study the relationships between literacy skills and various factors, the scale scores by themselves carry little or no meaning. In other words, whereas most people have a practical understanding of what it means when the temperature outside reaches 10°C, it is not intuitively clear what it means when a particular group is at 287 on the prose scale, or 250 on the document scale.

One way to gain some understanding about what it means to perform at various points along a literacy scale is to identify a set of variables that can be shown to underlie performance on these tasks. Collectively, these variables provide a framework for understanding what is being measured in a particular assessment and what skills and knowledge are being demonstrated by various levels of proficiency.

Toward this end, the appendix begins by describing how the literacy scale scores were defined. A detailed description of the prose, document and quantitative literacy scales is then provided, including a definition of each of the five levels and the percentages of adults in each of the participating countries demonstrating proficiency in each level. Sample tasks are described to illustrate the types of materials and task demands that characterise the five levels on each scale.

## DEFINING THE LITERACY LEVELS

The item response theory (IRT) scaling procedures that were used in the IALS provide a statistical solution for establishing one or more scales for a set of tasks in which the ordering of difficulty is essentially the same for everyone. First, the difficulty of tasks is ranked on the scale according to how well respondents actually perform them. Next, individuals are assigned scores according to how well they do on a variety of tasks at different levels.

The scale point assigned to each task is the point at which individuals with that proficiency score have a given probability of responding correctly. In this survey, an 80% probability of correct response was the criterion used. This means that individuals estimated to have a particular scale score will consistently perform tasks — with an 80% probability — like those at that point on the scale. It also means they will have a greater than 80% chance of performing tasks that are lower than their estimated proficiency on the scale. It does not mean, however, that individuals with low proficiency can never succeed at more difficult tasks—that is, on tasks with difficulty values higher than their proficiencies. They may do so some of the time. Thus, it means that their probability of success is relatively low. In other words, the more difficult the task relative to their proficiency, the lower the likelihood of a correct response.

An analogy might help clarify this point. The relationship between task difficulty and individual proficiency is much like the high jump event in track and field, in which an athlete tries to jump over a bar that is placed at increasing heights. Each high jumper has a height at which he or she is proficient. That is, the jumper can clear the bar at that height with a high probability of success, and can clear the bar at lower heights almost every time. When the bar is higher than the athlete's level of proficiency, however, it is expected that the athlete will be unable to clear the bar consistently.

Once the literacy tasks are placed along each of the scales using the criterion of 80%, it is possible to see how well the interactions among various task characteristics explain the placement of tasks along the scales. Analyses of the interactions between the materials being read and the tasks based on these materials reveal that an ordered set of information-processing skills appears to be called into play to successfully perform the various tasks displayed along each scale (Kirsch and Mosenthal 1993).

To capture this order, each scale is divided into five levels reflecting the empirically determined progression of information-processing skills and strategies:

- Level 1 (0 to 225)
- Level 2 (226 to 275);
- Level 3 (276 to 325);
- Level 4 (326 to 375); and
- Level 5 (376 to 500).

It is worth noting that, while some of the tasks were at the low end of a scale and some at the very high end, most had values in the 200–400 range. It is also important to recognise that these levels were selected not as a result of any statistical property of the scales, but rather as the result of shifts in the skills and strategies required to succeed on various tasks along the scales, ranging from simple to complex.

The remainder of this appendix describes each scale in terms of the nature of task demands at each of the five levels. For each scale, sample tasks at each level are presented, and the factors contributing to their difficulty are discussed. The aim is to add meaning to the scales and to facilitate interpretation of the overall results as well as the breakdowns given in the main body of the report.

## INTERPRETING THE PROSE LITERACY LEVELS

The ability to understand and use information contained in various kinds of textual material is an important aspect of literacy. The IALS therefore included an array of prose selections, including text from newspapers, magazines and brochures. The material varied in length, density, content, and use of structural or organisational aids such as headings, bullets and special typefaces. All prose samples were reprinted in their entirety with the original layout and typography intact.

Each prose selection was accompanied by one or more tasks or directives asking the reader to perform specific tasks. These tasks represent three major aspects of information-processing: locating, integrating and generating. Locating tasks require the reader to find information in the text based on conditions or features specified in the question or directive. The match may be literal or synonymous, or the reader may need to make an inference in order to perform successfully. Integrating tasks ask the reader to pull together two or more pieces of information in the text. In some cases the information can be found in a single paragraph, while in others it appears in different paragraphs or sections. In the generating tasks, readers must produce a written response by processing information from the text and also by making text-based inferences or drawing on their own background knowledge.

In all, the prose literacy scale includes 34 tasks with difficulty values ranging from 188 to 377. These tasks are distributed by level as follows: Level 1 (5 tasks); Level 2 (9 tasks); Level 3 (14 tasks); Level 4 (5 tasks); and Level 5 (1 task). It is important to remember that the tasks requiring the reader to locate, integrate and generate information extend over a range of difficulty as a result of interactions with other variables including:

- the number of categories or features of information the reader must process
- the extent to which information given in the question or directive is obviously related to the information contained in the text
- the amount and location of information in the text that shares some of the features with the information being requested and thus, seems plausible but does not fully answer the question; these are called 'distractors'
- the length and density of the text.

The five levels of prose literacy are defined on the following pages.

### Prose Level 1 — Score range: 0 to 225

Tasks at this level require the reader to locate and match a single piece of information in the text. Typically the match between the task and the text is literal, although sometimes a low-level inference may be necessary. The text is usually brief or has organisational aids such as paragraph headings or italics that suggest where in the text the reader should search for the specified information. Generally, the target word or phrase appears only once in the text.

The easiest task in Level 1 (difficulty value of 188) directs respondents to look at a medicine label to determine the 'maximum number of days you should take this medicine.' The label contains only one reference to number of days and this information is located under the heading 'DOSAGE.' The reader must go to this part of the label and locate the phrase 'not longer than 7 days.'

#### Prose Level 2 — Score range: 226 to 275

Like the tasks at Level 1, most of the tasks at Level 2 ask the reader to locate information. However, more varied demands are placed on the reader in terms of the number of responses the question requires, or in terms of the distracting information that may be present. For example, a task based on an article about the impatiens plant asks the reader to determine what happens when the plant is exposed to temperatures of 14°C or lower. A sentence under the section 'General care' states that 'When the plant is exposed to temperatures of 12–14°C, it loses its leaves and won't bloom anymore.' This task received a difficulty value of 230, just in the Level 2 range. What made this task somewhat harder than those identified at Level 1 is that the previous sentence in the text contains information about the requirements of the impatiens plant in various temperatures. This information could have distracted some readers, making the task slightly more difficult.

A similar task involving the same text asks the reader to identify 'what the smooth leaf and stem suggest about the plant.' The second paragraph of the article is labelled 'Appearance' and contains a sentence that states, '. . . stems are branched and very juicy, which means, because of the tropical origin, that the plant is sensitive to cold.' This

sentence distracted some readers from the last sentence in the paragraph: 'The smooth leaf surfaces and the stems indicate a great need of water.' This task received a difficulty value of 254, placing it in the middle of Level 2.

Prose Level 3 — Score range: 276 to 325

Tasks at Level 3 on the prose scale tend to require the reader to search for information that requires low-level inferences or that meets conditions stated in the question. Sometimes the reader needs to identify several pieces of information that are located in different sentences or paragraphs rather than in a single sentence. Readers may also be asked to integrate or to compare and contrast information across paragraphs or sections of text.

A task at this level (with a difficulty value of 281) refers the reader to a page from a bicycle owner's manual to determine how to check to make sure the seat is in the proper position. The reader must locate the section labelled 'Fitting the Bicycle.' Then readers must identify and summarise the correct information in writing, making sure the conditions stated are contained in their summary.

A second Level 3 task, receiving a difficulty value of 310, directs the reader to look at a set of four movie reviews to determine which review was least favourable. Unlike some reviews that rate movies by points or some graphic such as stars, these reviews contain no such indicators. The reader needs to glance at the text of each review to compare what the reviewer said in order to judge which movie received the worst rating.



Another Level 3 question involved an article about cotton nappies. Here readers were asked to write three reasons why the author prefers to use cotton nappies over disposable nappies. This task was relatively difficult (318) because of several variables. First, the reader has to provide several answers requiring text-based inferences. Nowhere in the text does the author say, 'I prefer cotton nappies because ...'. These inferences are made somewhat more difficult because the type of information being requested is a 'reason' rather than something more concrete such as a date or person. And finally, the text contains information that may distract the reader

**Prose Level 4 — Score range: 326 to 375**

These tasks require readers to perform multiple-feature matching or to provide several responses where the requested information must be identified through text-based inferences. Tasks at this level may also require the reader to integrate or contrast pieces of information, sometimes presented in relatively lengthy texts. Typically, these texts contain more distracting information and the information that is requested is more abstract.

One task falling in the middle of Level 4 with a difficulty value of 338 directs readers to use the information from a pamphlet about a hiring interview to 'write in your own words one difference between the panel interview and the group interview.' Here readers needed to read the brief descriptions about each type of interview. And, rather than merely locating a fact about each or identifying a similarity, they need to integrate what was being presented to infer a characteristic on which the two types of interviews differ. Experience from other large-scale assessments reveals that tasks in which readers are asked to contrast information are more difficult, on average, than tasks in which they are asked to compare information to find similarities.

**Prose Level 5 — Score range: 376 to 500**

Typically tasks at this level require the reader to search for information in dense text that contains a number of plausible distractors. Some require readers to make high-level inferences or use specialised knowledge.

One task used in this assessment fell in Level 5. This task, receiving a difficulty value of 377, requires the reader to look at an announcement from a personnel department and 'list two ways in which CIEM helps people who will lose their jobs because of a departmental reorganisation.' The correct response requires readers to search through this text to locate the embedded sentence 'CIEM acts as a mediator for employees who are threatened with dismissal resulting from reorganisation, and assists with finding new positions when necessary.' This task is difficult because the announcement is organised around information that is different from what is being requested in the question. Thus, while the correct information is located in a single sentence, this information is embedded under a list of headings describing CIEM's activities for employees looking for other work. This list of headings serves as an excellent set of distractors for the reader who does not search for or locate the phrase containing the conditional information stated in the directive; that is, those who lose their jobs because of a departmental reorganisation.





## INTERPRETING THE DOCUMENT LITERACY LEVELS

Adults often encounter materials such as tables, schedules, charts, graphs, maps and forms at home, at work, or when travelling in their communities. The knowledge and skills needed to process information contained in these documents is therefore an important aspect of being literate in a modern society. Success in processing documents appears to depend at least in part on the ability to locate information in a variety of displays, and to use this information in various ways. Sometimes procedural knowledge may be required to transfer information from one source to another, as is necessary in completing applications or order forms.

The IALS document literacy scale contains 34 tasks that are ordered along the scale from 182 to 408 as the result of responses of adults from each of the participating countries. These tasks are distributed as follows: Level 1 (6 tasks); Level 2 (12 tasks); Level 3 (13 tasks); Level 4 (2 tasks); and Level 5 (1 task). By examining tasks associated with these proficiency levels, characteristics that are likely to make particular document tasks more or less difficult can be identified. Questions or directives associated with the various document tasks are basically of four types: locating, cycling, integrating and generating. Locating tasks require the reader to match one or more features of information stated in the question to either identical or synonymous information given in the document. Cycling tasks require the reader to locate and match one or more features of information, but differ from locating tasks because they require the reader to engage in a series of feature matches to satisfy conditions given in the question. The integrating tasks typically require the reader to compare and contrast information in adjacent parts of the document. In the generating tasks, readers must produce a written response by processing information found in the document and by making text-based inferences or drawing on their own background knowledge.

As with the prose tasks, each type of question or directive associated with a document task extends over a range of difficulty as a result of interactions among several other characteristics:

- the number of categories or features of information in the question the reader must process or match;
- the number of categories or features of information in the document that seem plausible or correct because they share some but not all of the information with the correct answer;
- the extent to which the information asked for in the question is obviously related to the information stated in the document; and
- the structure and content of the document.

A more detailed discussion of the five levels of document literacy follows.

### Document Level 1 — Score range: 0 to 225

Most of the tasks at this level require the reader to locate a piece of information based on a literal match. Distracting information, if present, is typically located away from the correct answer. Some tasks may direct the reader to enter personal information onto a form.

One document task meeting this description (187) directs the reader to identify from a chart the percentage of teachers from Greece who are women. The chart displays the percentages of women teachers from various countries. Only one number appears on the chart for each country.

A very similar task involves a chart displayed in a newspaper showing the expected amounts of radioactive waste by country. This task, which has a difficulty value of 218, directs the reader to identify the country that is projected to have the smallest amount of waste by the year 2000. Again, there is only one percentage associated with each country. In this task, however, the reader must first identify the percentage associated with the smallest amount of waste and then match it to the country.

#### Document Level 2 — Score range: 226 to 275

Document tasks at this level are a bit more varied. While some still require the reader to match on a single feature, more distracting information may be present or the match may require a low-level inference.

One Level 2 task on the document scale (242) seems very similar to one described above for Level 1. This task directs the reader to use a chart to identify the year in which the fewest people in the Netherlands were injured by fireworks. Part of what may have made this task somewhat more difficult is that two charts were presented instead of just one. One, labelled 'Fireworks in the Netherlands,' depicts years and numbers representing funds spent in millions of U.S. dollars, while the other, 'Victims of fireworks,' uses a line to show numbers of people treated in hospitals. It is worth noting that in the second assessment, this label was changed to read 'number injured.'

Several other tasks falling within Level 2 direct the reader to use information given to complete a form. In one case they are asked to fill out an order form to purchase tickets to see a play on a particular day, at a particular time. In another, readers are asked to complete the availability section of an employment application based on information provided that included: total number of hours they are willing to work, how they heard about the job, and availability of transportation.

**Document Level 3 — Score range: 276 to 325**

Tasks at this level appear to be most varied. Some require the reader to make literal or synonymous matches, but usually the matches require the reader to take conditional information into account or to match on multiple features of information. Some tasks at this level require the reader to integrate information from one or more displays of information. Other tasks ask the reader to cycle through a document to provide multiple responses.

One task falling around the middle of Level 3 in difficulty involves the fireworks charts discussed above. This task directs the reader to write a brief description of the relationship between sales and injuries based on the information shown in the two graphs. This task received a difficulty value of 295. A second task, falling at high end of Level 3 (321), involves the use of a quick copy printing requisition form that might be found in the workplace. The task asks the reader to explain whether or not the quick copy centre would make 300 copies of a statement that is 105 pages long. In responding to this directive, the reader must determine whether conditions stated in the question meet those provided in the guidelines to this document.

Document Level 4 — Score range: 326 to 375

Tasks at this level, like those in the previous levels, ask the reader to match on multiple features of information, to cycle through documents, and to integrate information; frequently however, these tasks require the reader to make higher order inferences to arrive at the correct answer. Sometimes, conditional information is present in the document, which must be taken into account by the reader.

One of the two tasks falling at this level (341) asks the reader to look at two pie charts showing oil use for 1970 and 1989. The question directs the reader to summarise how the percentages of oil used for different purposes changed over the period specified. Here the reader must cycle through the two charts, comparing and contrasting the percentages for each of the four stated purposes. Then the reader must generate a statement that captures these changes.

## Document Level 5 — Score range: 376 to 500

Tasks at this level require the reader to search through complex displays of information that contain multiple distractors, to make high-level inferences, process conditional information, or use specialised knowledge.

The only Level 5 task in this international assessment involved a page taken from a consumer magazine rating clock radios. The most difficult task (408) involving this document asked the reader for the average advertised price for the basic clock radio receiving the highest overall score. This task required readers to process two types of conditional information. First, they needed to identify the radio receiving the highest overall score while distinguishing among the three types of clock radios reviewed: full-featured, basic and those with a cassette player. Second, they needed to locate a price. In making this final match, they needed to notice that two prices were given; the first, the suggested retail and the second, the average advertised price.

A second and considerably easier task involving this document and falling at the low end of Level 4 (327) asks the reader 'which full-featured radio is rated the highest on performance.' Again, readers needed to find the correct category of clock radio. Yet, they needed to process fewer conditions. Here they only needed to distinguish between the rating for 'Overall Score' and 'Performance.' It is possible that some adults identified the full-featured radio as receiving the highest 'Overall Score' rather than the one rated highest in 'Performance' as specified in the question. As such, 'Overall Score' would be considered a plausible distractor. Another factor that likely contributed to this task's difficulty is that 'Overall Score' is given a numerical value while the other features are rated by a symbol. It may be that some adults found the correct category ('Performance'), but selected the first radio listed, assuming it performed best. The text accompanying this table indicates the radios are rated within a category by overall score. It is easy to imagine that some people may have equated overall score with overall performance.



## INTERPRETING THE QUANTITATIVE LITERACY LEVELS

Since adults are frequently required to perform arithmetic operations in everyday life, the ability to perform quantitative literacy tasks is another important aspect of literacy. These skills may seem, at first glance, to be fundamentally different from the types of knowledge and skill associated with prose and document literacy and therefore, to extend the concept of literacy beyond its traditional limits. However, experience in North America with large-scale assessments of adults indicates that the processing of printed information plays an important role in affecting the difficulty of tasks along the scale (Kirsch et al. 1993; Montigny et al. 1991).

In general, it appears that many individuals can perform single arithmetic operations when both the numbers and operations are made explicit. However, when the numbers to be used must be located in and extracted from different types of documents that contain similar but irrelevant information, when the operations to be used must be inferred from printed directions, and when multiple operations must be performed, the tasks become increasingly difficult.

The IALS quantitative literacy scale contains 33 tasks ranging from 229 to 408 in difficulty. These tasks are distributed as follows: Level 1 (1 task); Level 2 (9 tasks); Level 3 (16 tasks); Level 4 (5 tasks); and Level 5 (2 tasks). The difficulty of these tasks and, therefore, their placement along the scale, appears to be a function of several factors including:

- the particular arithmetic operation required to complete the task;
- the number of operations needed to perform the task successfully;
- the extent to which the numbers are embedded in printed materials; and
- the extent to which an inference must be made to identify the type of operation to be performed.

A detailed discussion of the five levels of quantitative literacy follows.

### Quantitative Level 1 — Score range: 0 to 225

Although no quantitative tasks used in the IALS fall below the score value of 225, experience suggests that such tasks would require the reader to perform a single, relatively simple operation (usually addition) for which either the numbers are already entered onto the given document and the operation is stipulated, or the numbers are provided and the operation does not require the reader to borrow.

The easiest quantitative task in the IALS (225) directs the reader to complete an order form. The last line on this form says 'Total with Handling.' The line above it says 'Handling Charge \$2.00.' The reader simply had to add the \$2.00 to the \$50.00 they had entered on a previous line to indicate the cost of the tickets. In this task, one of the numbers was stipulated, the operation was easily identified from the word 'total' and the operation did not require the reader to borrow or carry numbers. Moreover, the format of the form set the problem up in a simple column format, further facilitating the task for the reader.



**Quantitative Level 2 — Score range: 226 to 275**

Tasks in this level typically require readers to perform a single arithmetic operation (frequently addition or subtraction) using numbers that are easily located in the text or document. The operation to be performed may be easily inferred from the wording of the question or the format of the material (for example, a bank deposit form or an order form).

A typical Level 2 task on the quantitative scale directs the reader to use a weather chart in a newspaper to determine how many degrees warmer today's high temperature is expected to be in Bangkok than in Seoul. Here the reader had to cycle through the table to locate the two temperatures and then subtract them to determine the difference. This task received a difficulty value of 255.

A similar but slightly more difficult task (268) requires the reader to use the chart about women in the teaching profession in Europe that is displayed in Level 1 for the document scale. This task directs the reader to calculate the percentage of men in the teaching profession in Italy. Both this task and the one just mentioned involved calculating the difference between two numbers. Part of what distinguishes these two tasks is that in the former, both temperatures could be identified in the table from the newspaper. For the task involving men teachers in Italy, the reader needed to make the inference that the percentage of men teachers is equal to 100% minus the percentage of women teachers.

### Quantitative Level 3 — Score range: 276 to 325

Tasks found in this level typically require the reader to perform a single operation. However, the operations become more varied — some multiplication and division tasks are found in this level. Sometimes two or more numbers are needed to solve the problem and the numbers are frequently embedded in more complex displays. While semantic relation terms such as 'how many' or 'calculate the difference' are often used, some of the tasks require the reader to make higher order inferences to determine the appropriate operation.

For example, one task located at 302 on the quantitative scale directs the reader to look at two graphs containing information about consumers and producers of primary energy. In one question, they are asked to calculate how much more energy Canada produces than it consumes. Here the operation is not facilitated by the format of the document and the reader must locate the information using both bar graphs. In another question using this document, the reader is directed to calculate the total amount of energy in 'quadrillion Btu' consumed by Canada, Mexico and the United States of America. This task falls at 300 on the scale. It requires the reader to add three numbers. Presenting two graphs likely contributed to the difficulty of this task. Some respondents may have performed the appropriate calculation for the three countries specified using the producer energy chart rather than the consumer energy chart.

Another task at this level involves the fireworks chart referred to earlier for the document scale. This quantitative task asks the reader to calculate how many more people were injured in 1989 than in 1988. What contributes to this task receiving a difficulty value of 293 is that one of the numbers was not given in the line graph. The reader needed to interpolate the number from information provided along the vertical axis.

In a task falling in the same Level (located at 280 on the scale), readers are asked to look at a recipe for scrambled eggs with tomatoes. The recipe gives the ingredients for four servings: 3 tablespoons of oil, 1 garlic clove, 1 teaspoon of sugar, 500 grams of fresh red tomatoes and 6 eggs. The question asks them to determine the number of eggs they will need if they are using the recipe for six people. Here they must know how to calculate or determine the ratio needed. This task is somewhat easier than might be expected, given other tasks at this level. This may be because people are familiar with recipes and with manipulating them to fit a particular situation.

This appears to be true for another question using this recipe. It asks the reader to determine the amount of oil that would be needed if the recipe were being used for two people. This task received a value of 253 on the scale. A larger percentage of respondents found it easier to halve an ingredient than to increase one by 50%. It is not clear why this is so. It may be that some of the respondents have an algorithm for responding to certain familiar tasks that does not require them to apply general arithmetic principles for solving the problem.

## Quantitative Level 4 — Score range: 326 to 375

With one exception, the tasks at this level require the reader to perform a single arithmetic operation where typically either the quantities or the operation are not easily determined. That is, for most of the tasks at this level, the question or directive does not provide a semantic relation term such as 'how many' or 'calculate the difference' to help the reader.

One such task involves a compound interest table. It directs the reader to 'calculate the total amount of money you will have if you invest \$100 at a rate of 6% for 10 years.' This task received a difficulty value of 348, in part because many people treated this as a document rather than a quantitative task and simply looked up the amount of interest that would be earned. They may have forgotten to add the interest to their \$100 investment.

Another task at this level requires respondents to read a newspaper article describing a research finding linking allergies to a particular genetic mutation. The question directs the reader to calculate the number of people studied who were found to have the mutant gene. To answer the question correctly, readers must know how to convert the phrase '64 percent' to a decimal number and then multiply it by the number of patients studied (400). The text provides no clues on how to set up this problem.

A third task involves the distance chart shown below. Readers were asked to 'calculate the total number of kilometres travelled in a trip from Guadalajara to Tecoman and then to Zamora.' Here a semantic relation term was provided, but the quantities were not easily identified. As a result, this task received a difficulty value of 335. Making the inference that the trip was from Guadalajara to Tecoman and then from Tecoman to Zamora was difficult for some respondents. In a different task, respondents were asked to determine how much less the distance from Guadalajara to Tecoman is than the distance from Guadalajara to Puerto Vallarta. In this Level 3 task (308), the quantities were relatively easy to locate.

#### Quantitative Level 5 — Score range: 376 to 500

These tasks require readers to perform multiple operations sequentially, and they must disembed the features of the problem from the material provided or rely on background knowledge to determine the quantities or operations needed.

One of the most difficult tasks on the quantitative scale (381) requires readers to look at a table providing nutritional analysis of food and then, using the information given, determine the percentage of calories in a Big Mac® that comes from total fat. To answer this question, readers must first recognise that the information about total fat provided is given in grams. In the question, they are told that a gram of fat has 9 calories. Therefore, they must convert the number of fat grams to calories. Then, they need to calculate this number of calories as a percentage of the total calories given for a Big Mac®. Only one other item on this scale received a higher score.



## ESTIMATING LITERACY PERFORMANCE ACROSS THE LEVELS

The literacy levels not only provide a means for exploring the progression of information-processing demands across each of the scales, but they also can be used to help explain how the proficiencies individuals demonstrate reflect the likelihood they will respond correctly to the broad range of tasks used in this assessment as well as to similar tasks that were not included. In practical terms, this means that individuals performing at 250 on each scale are expected to be able to perform the average Level 1 and 2 tasks with a high degree of proficiency. That is, they will be able to perform these kinds of tasks with an average probability of 80% or higher. It does not mean that they will not be able to perform tasks in Levels 3 or higher. They will do so some of the time, but not consistently.

Table 1 displays the probability that individuals performing at selected points on each of the scales will give a correct response to tasks of varying difficulty. For example, a reader whose prose proficiency is 150 has less than a 50% chance of giving a correct response to the Level 1 tasks. Individuals whose proficiency score is 200, in contrast, have about an 80% probability of responding correctly to these Level 1 tasks. In terms of task demands, it can be inferred that adults performing at 200 on the prose scale are likely to be able to locate a single piece of information in a brief text when there is no distracting information, or if plausible but incorrect information is present but located away from the correct answer. However, these individuals are likely to demonstrate far more difficulty with tasks in Levels 2 through 5. For example, they would have only a 40% chance of performing the average Level 2 task correctly and an 18% chance of success with tasks in Level 3 and no more than a 7% chance with tasks in Levels 4 and 5.

In contrast, respondents demonstrating a proficiency of 300 on the prose scale have about an 80% chance or higher of succeeding on tasks in Levels 1, 2 and 3. This means that they demonstrate success with tasks that require them to make low-level inferences and with tasks that require them to take some conditional information into account. They can also integrate or compare and contrast information that is easily identified in the text. On the other hand, they are likely to demonstrate some difficulty with tasks where they must make high text-based inferences or where they need to process more abstract types of information. These more difficult tasks may also require them to draw on less familiar or more specialised types of knowledge beyond that given in the text. On average, they have about a 50% probability of performing Level 4 tasks correctly; with Level 5 tasks, their likelihood of responding correctly decreases to 40%.

**TABLE 1** SELECTED PROFICIENCY SCORES, By Literacy Scale Levels

	SELECTED PROFICIENCY				
	150	200	250	300	350
	%	%	%	%	%
.....					
PROSE SCALE					
Level 1	48	81	95	99	100
Level 2	14	40	76	94	99
Level 3	6	18	46	78	93
Level 4	2	7	21	50	80
Level 5 (a)	2	6	18	40	68
.....					
DOCUMENT SCALE					
Level 1	40	72	94	99	100
Level 2	20	51	82	95	99
Level 3	7	21	50	80	94
Level 4	4	13	34	64	85
Level 5(a)	<1	1	3	13	41
.....					
QUANTITATIVE SCALE					
Level 1(a)	34	67	89	97	99
Level 2	21	47	76	92	98
Level 3	7	21	51	81	94
Level 4	1	6	22	57	86
Level 5(a)	1	2	7	20	53

(a) Based on one task.

Similar kinds of interpretations can be made using the information presented for the document and quantitative literacy scales. For example, someone who is at 200 on the quantitative scale has, on average, a 67% chance of responding correctly to Level 1 tasks. His or her likelihood of responding correctly decreases to 47% for Level 2 tasks, 21% for Level 3 tasks, 6% for Level 4 tasks and only 2% for Level 5 tasks. Similarly, readers with a proficiency of 300 on the quantitative scale would have a probability of 92% or higher of responding correctly to tasks in Levels 1 and 2. Their average probability would decrease to 81% for Level 3 tasks, 57% for Level 4 and 20% for Level 5.

#### ESTIMATING THE VARIABILITY OF LITERACY TASKS ACROSS COUNTRIES

One of the goals in conducting international surveys is to be able to compare populations on common scales. In this study, three literacy scales were used to compare both the distributions of literacy skills and the relationships between literacy skills and a variety of social, educational and labor-market variables. Each literacy scale consisted of more than 30 literacy tasks which received item parameters that define the difficulty of the task and how well it discriminates among the populations of adults who responded to the task. These parameters were determined based on how adults within and across participating countries responded to each task.

Table 1 shows the average probabilities of successful performance by individuals with selected proficiency scores on tasks in each literacy level of the prose, document and quantitative scales.



Under standard assumptions of item response theory (IRT), item parameters are thought to be invariant across respondents and across subpopulations. However, we have discovered through the conduct of large-scale assessments that this assumption is not always true. In IALS, we have noted in the technical report (Yamamoto 1997) that some language/country subpopulations do respond differently to a subset of literacy tasks. As described in the technical report, individual items were dropped from the assessment if at least seven of the original 10 language/country populations were shown not to have the same item parameters. That is, if the response data for a particular item showed poor fit to the item parameters common to the rest of the language/country populations. In addition, if there were items in which only 1, 2 or 3 countries varied, these countries were allowed to have unique parameters for that item. This resulted in a total of 13 items being dropped from the assessment with 31 items getting a unique parameter for one language/country population, 16 for two language/country populations, and six for three language/country populations. Another way to look at this is that there were a total of 1,010 constraints (114 items minus the 13 dropped times 10 language samples). Of these, unique item parameters were required or allowed in 81 instances meaning that 92% of the constraints support a common scale across the 10 original language/country populations. France was eventually removed from the analyses at their request.

The reasons for these discrepancies were due largely to differences in translations among countries or to differences in interpretation of scoring rubrics for individual items. The differential performance on some items also reflected the variation in language and culture although no obvious or specific reason could be identified. The fact that not all items had identical item parameters resulted in two types of variation. The first is that the differences could influence the distribution of proficiency scores for a particular country/language group. Analyses indicated that the consequence of using a partially different set of item parameters on the proficiency distribution for a particular population was minimal. For any given population, when the proficiency distribution was estimated based on either a set of items which included those common across countries as well as those unique to a given country or on a set of items which were optimal for a different population, the means and standard deviations of estimated proficiencies differed by less than half of a standard error. Typically, standard errors of estimation ranged between one and three points on the 500-point scales depending on a particular language/country population.

Another type of variation which results from having a small set of items with unique parameters is the placement of particular tasks along the scales according to their 'RP80' values. The 'RP80' value is the value on the scale of 0–500 which indicates the difficulty of a particular task — the higher the value, the more difficult the task. At the beginning of this appendix, we discussed the fact that a criterion of 80 percent was used meaning that tasks were placed along a scale based on the probability that someone with that level of proficiency would have an 80 percent chance of getting that task and others like it correct. The fact that a small subset of tasks have unique parameters for particular county/language groups means that some tasks fall at different points along each scale. Since this appendix is about describing what it means to be at a particular point along each literacy scale and uses exemplar tasks to reflect on this meaning, it seems important to try to describe the extent of the variation which exists among the countries with respect to the placement of tasks along the literacy scales.

To evaluate the variability of RP80s for each language/country population, the deviation of RP80s against the common RP80 was examined. It is important to note that no country received all common item parameters. That is, at least one item for each country received a unique set of item parameters. However, at least seven of the original language/country populations received common parameters for each of the 101 items. In total, there are 15 country/language groups for which we have data to estimate this variation. Nine of the groups are from the first assessment and six are from the assessment just completed. There were a total of 101 literacy exercises meaning that there could be as many as 1,515 deviations (101 times 15). The mean deviation among the RP80s was 4.7 with a standard deviation of 14.1. This means that the average variation among the RP80s for the literacy tasks was 4.7 points on a 500-point scale or less than 10% of the 50 points making up a particular literacy level. In addition, a small number of items had large deviations which made up a large percentage of this variation. Only 1% of the actual deviations observed accounts for about 20% of the average deviation. That is, 99% of the deviations have a mean of 3.6, or a 20% reduction from the average of 4.7. Table 2 shows the average deviation of RP80s by each of the 15 language/country groups. Here we can see that the average deviation ranges from a low of 1.1 for the Swiss/French to 7.6 for Australia.

**TABLE 2** AVERAGE DEVIATION OF RP80 VALUES, By Country/Language

Country (language group)	Average deviation of RP80 values
Australia	7.6
Belgium	5.8
Canada (English)	3.6
Canada (French)	3.2
Germany	5.3
Ireland	4.5
Netherlands	3.4
New Zealand	7.2
Northern Ireland	6.9
Poland	5.4
Sweden	5.2
Switzerland (French)	1.1
Switzerland (German)	4.0
Great Britain	5.2
United States of America	2.0

CONCLUSION

One of the goals of large-scale surveys is to provide a set of information that can inform policy makers and help them during the decision-making process. Presenting information in a way that will enhance understanding of what has been measured and what conclusions may be drawn from the data is important to reaching this goal. This appendix has presented a framework for understanding the consistency of task responses demonstrated by adults from a number of countries. This framework identifies a set of variables shown to underlie successful performance on a broad array of literacy tasks. Collectively, these variables provide a means for moving away from interpreting survey results in terms of discrete tasks or a single number and towards identifying levels of performance that have generalisability and validity across assessments and groups.

The knowledge and understanding such a framework provides contribute to the evolving concept of test design as more than merely assigning a numerical value (or position) to an individual based on his or her responses to a set of tasks, but rather, to assigning meaning and interpretability to this number. As concern ceases to centre on discrete behaviours or isolated observations and concentrates more on providing a meaningful score, a higher level of measurement is reached (Messick 1989).

# APPENDIX **B** DATA ITEMS .....

CATEGORY	DATA ITEMS
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SOCIO-DEMOGRAPHICS

- State or Territory of usual residence
- Area of usual residence
- Sex
- Marital status
- Relationship in household
- Age
- Birthplace
- Year of arrival in Australia
- Age on arrival in Australia
- Whether of Aboriginal/Torres Strait Islander origin

HEALTH

- Self-perception of health
- Whether has a disability
- Type of disability
- Whether has learning difficulties
- Extent to which learning difficulty has affected reading ability
- Extent to which learning difficulty has affected writing ability
- Extent to which learning difficulty has affected mathematical ability

LABOUR FORCE

- Labour force status
- Status in employment
- Whether had a job in the last 12 months
- Whether worked mostly full time or part time
- Occupation of current job
- Industry of current job
- Size of business in current job (employees in Australia)
- Hours usually worked each week in current job(s)
- Duration of unemployment
- Whether wanted to work in the last 12 months in weeks without work
- Work history
- Number of employers or businesses in the last 12 months
- Occupation of main job in the last 12 months
- Industry of main job in the last 12 months
- Size of business in main job in the last 12 months (employees in Australia)
- Hours usually worked each week in main job in the last 12 months
- Main reason usually worked less than 35 hours a week
- Main reason didn't want to work in the weeks without work in the last 12 months
- Main reason did not look for work in all of the weeks without work
- Number of weeks without work and not looking for work in the last 12 months
- Number of weeks worked in the last 12 months

## CATEGORY

## DATA ITEMS

## EDUCATION AND TRAINING

Number of schools attended before the age of 15  
 Educational attainment before migration  
 Field of study of highest qualification obtained before migration  
 Whether finished schooling in Australia  
 Educational attainment in Australia  
 Highest qualification obtained in Australia  
 Field of study of highest qualification obtained  
 Main reason left school early  
 Years of formal education completed  
 Whether received any training or education in the last 12 months  
 Number of courses or workshops attended in the last 12 months  
 For first, second and third courses:  
     Educational qualification towards which course is being taken  
     Major field of study  
     Main reason attended course  
     Extent to which skills gained from course used in main job  
     Location of course  
     Provider of course  
     Who paid for course  
     How course was presented  
     Who suggested course  
     Number of weeks training course lasted  
     Number of days per week attended training course  
     Number of hours per day attended training course  
     Total hours spent on course  
 Reasons for not taking recreational courses in the last 12 months  
 Reasons for not taking job-related training courses in the last 12 months

## LANGUAGE AND LITERACY

Language first spoken (up to 2 languages mentioned)  
 Self-perception of current reading skills in language first spoken (up to 2 languages mentioned)  
 Self-perception of current writing skills in language first spoken (up to 2 languages mentioned)  
 Age learned to speak English  
 Self-perception of current English-speaking skills  
 Age learned to read and write English  
 Where attended classes to improve English  
 Age attended English language classes in Australia  
 Length of English language classes in Australia  
 Provider of English language classes in Australia  
 Languages spoken well enough to converse in  
 Language usually spoken at home  
 Language in which most at ease  
 Reasons for not taking training to improve English reading and writing skills  
 How often letters or memos were read or used in main job  
 How often reports, articles, magazines or journals were read or used in main job  
 How often manuals or reference books, including catalogues, were read or used in main job  
 How often diagrams or plans were read or used in main job  
 How often bills, invoices, spreadsheets or budget tables were read or used in main job  
 How often material written in a language other than English was read or used in main job  
 How often directions or instructions for any products were used in main job

CATEGORY	DATA ITEMS
LANGUAGE AND LITERACY continued	<p>How often letters or memos were written in main job</p> <p>How often reports or articles were written in main job</p> <p>How often estimates or technical specifications were written in main job</p> <p>How often forms such as bills, invoices or budgets were filled out in main job</p> <p>How often arithmetic or mathematics was used in main job to measure or estimate the size or weight of objects</p> <p>How often arithmetic or mathematics was used in main job to calculate prices, costs or budgets</p> <p>Self-perception of English reading skills for the needs of main job</p> <p>Self-perception of English writing skills for the needs of main job</p> <p>Self-perception of mathematical skills for the needs of main job</p> <p>Whether job opportunities limited by English reading skills</p> <p>Whether job opportunities limited by English writing skills</p> <p>Whether job opportunities limited by mathematical skills</p> <p>How often a public library is used</p> <p>How often a movie, play or concert is attended</p> <p>How often attends or takes part in a sporting event</p> <p>How often letters or anything else that is more than 1 page in length are written</p> <p>How often participates in volunteer or community organisations</p> <p>How often newspapers or magazines are read</p> <p>How often books are read</p> <p>How often radio, records, tapes, cassettes or compact discs are listened to</p> <p>Whether needs help to read newspaper articles</p> <p>Whether needs help to read information from government agencies, businesses or other institutions</p> <p>Whether needs help to read instructions such as on a medicine bottle</p> <p>Whether needs help to read instructions on packaged goods</p> <p>Whether needs help to fill out forms such as applications or bank deposit slips</p> <p>Whether needs help to do basic arithmetic</p> <p>Whether needs help to write notes and letters</p> <p>Types of reading material currently in the home</p> <p>Self-perception of English reading skills for the needs of daily life</p> <p>Self-perception of English writing skills for the needs of daily life</p> <p>Self-perception of mathematical skills for the needs of daily life</p> <p>Satisfaction with English reading and writing skills</p> <p>Assessed skill level — prose scale</p> <p>Assessed skill level — document scale</p> <p>Assessed skill level — quantitative scale</p>
PARENTS	<p>Level of mother's educational attainment</p> <p>Level of father's educational attainment</p> <p>Occupation of mother's main job</p> <p>Occupation of father's main job</p>
INCOME	<p>Personal income from wages, salary or self-employment only</p> <p>Personal income from all sources</p> <p>Types of income from government sources</p>

## TECHNICAL NOTES .....

### INTERPRETING THESE RESULTS

- 1** In interpreting the results in this publication, readers should note that the respondents who participated in the SAL and the literacy tasks used in the assessment were samples and as such the estimates obtained from the survey are subject to some degree of uncertainty or error.
- 2** The scientific procedures used in the assessment design permit a high degree of confidence in the resulting estimates of task difficulty. Similarly, the sampling design and weighting procedures applied ensure that the characteristics of respondents in the sample can be generalised to the population of interest.

### ESTIMATION PROCEDURE

- 3** Estimates from the SAL were calculated by the use of a complex ratio estimation procedure, which ensures that the survey estimates conform to independently estimated distributions (benchmarks) of the total population by age, sex and State (by capital city/rest of State) or Territory.

### RELIABILITY OF ESTIMATES

- 4** Two types of error are possible in an estimate based on a sample survey: sampling error and non-sampling error. The sampling error is a measure of the variability that occurs by chance because a sample, rather than the entire population, is surveyed. Since estimates from the SAL are based on information obtained from a sample of persons, they are subject to sampling variability; that is, they may differ from the estimates that would have been produced if all in-scope persons had been included in the survey. One measure of the likely difference is given by the standard error, which indicates the extent to which an estimate might have varied by chance because only a sample of persons was included. There are about two chances in three that a sample estimate will differ by less than one standard error from the estimate that would have been obtained if all persons had been included, and about 19 chances in 20 that the difference will be less than two standard errors. Another measure of sampling variability is the relative standard error which is obtained by expressing the standard error as a percentage of the estimate to which it refers. The relative standard error is a useful measure in that it provides an immediate indication of the percentage errors likely to have occurred due to sampling, and thus avoids the need to refer also to the size of the estimate.
- 5** The imprecision due to sampling variability, which is measured by the standard error, should not be confused with inaccuracies that may occur because of imperfections in reporting by respondents, errors made in collection such as in recording and coding data, and errors made in processing the data. Inaccuracies of this kind are referred to as the non-sampling error and they may occur in any enumeration, whether it be a full count or a sample. It is not possible to quantify non-sampling error, but every effort is made to reduce it to a minimum (see Data Quality in the Explanatory Notes). For the examples below, non-sampling error is assumed to be zero. In practice, the potential for non-sampling error adds to the uncertainty of the estimates caused by sampling variability.

Standard errors of estimates

**6** The size of the standard error increases with the level of the estimate, so that the larger the estimate, the larger the standard error. However, it should be noted that as the level of the estimate increases, the size of the standard error *relative to the estimate*, in percentage terms (i.e. the relative standard error) will decrease. Thus, larger estimates are more reliable than smaller estimates.

**7** As the standard errors in table A show, the smaller the estimate the higher is the relative standard error. Very small estimates are subject to such high standard errors (relative to the size of the estimate) as to detract seriously from their value for most reasonable uses. Estimates in this publication with relative standard errors of 25% or less, and percentages based on such estimates, are considered sufficiently reliable for most purposes. However, estimates and percentages with larger relative standard errors have been included and are preceded by an asterisk (e.g. \*3.4) to indicate that they are subject to high relative standard errors and should be used with caution.

**8** An example of how to use table A using linear interpolation, and the use of standard errors, is given below.

**9** Consider the estimate of 1,995,900 Australians who read letters or memos daily in the workplace and have Level 3 prose skills. By referring to table A, it can be seen that the estimate of 1,995,900 is between 1,750,000 and 2,000,000, and the standard error will be between 42,800 and 44,750. The standard error of 1,995,900, found by linear interpolation to be approximately, 44,700, is arrived at as follows:

$$42,800 + \frac{1,995,900 - 1,750,000}{2,000,000 - 1,750,000} \times (44,750 - 42,800)$$

Therefore, there are about two chances in three that the true value (the number that would have been obtained if the whole population had been included in the survey) is in the range 1,951,200 to 2,040,600. There are about 19 chances in 20 that the true value is in the range 1,906,500 to 2,085,300.

Standard errors of differences between estimates

**10** The difference between two survey estimates is itself an estimate and is therefore subject to sampling variability. The standard error of the difference of two survey estimates depends on the standard errors of the original estimates and on the relationship (correlation) between the two original estimates. An approximate standard error (SE) of the difference between two estimates (x-y) may be calculated by the following formula:

$$SE (x-y) = \sqrt{[SE(x)]^2 + [SE(y)]^2}$$

**11** While this formula will only be exact for differences between separate and uncorrelated (unrelated) characteristics or sub-populations, it may be used to provide a good approximation for all differences in this publication.

Standard errors of proportions

**12** Proportions and percentages formed from the ratio of two estimates are also subject to sampling error. The size of the error depends on the accuracy of both the numerator and denominator. The formula for the relative standard error (RSE) of a proportion or percentage is given below.

$$RSE (x/y) = \sqrt{[RSE(x)]^2 + [RSE(y)]^2}$$



**13** Considering the example above, the 1,995,900 Australians with Level 3 prose skill represent 42.0% of the 4,754,800 Australians who read letters or memos in the workplace daily. The standard error of 1,995,900 is approximately 44,700 so the relative standard error is 2.2%. The relative standard error of 4,754,800 is 1.2%. Applying the above formula, the relative standard error of the proportion is  $\sqrt{[2.2]^2 - [1.2]^2}$  or 1.8%, giving a standard error for the proportion (42.0%) of 0.8 percentage points. Therefore, there are about two chances in three that the true value (the number that would have been obtained if the whole population had been included in the survey) is in the range 41.2% to 42.8%. There are about 19 chances in 20 that the true value is in the range 40.4% to 43.6%.

**14** Table B can be used to obtain an indication of the standard error (in percentage points) of a proportion of a given size of estimate. By referring to table B, it can be seen that the estimated proportion of 10.0% of an estimate of 10,000,000 has a standard error of 0.3 percentage points. Therefore, there are about two chances in three that the true proportion is in the range 9.7% to 10.3%; and there are about 19 chances in 20 that the true proportion is in the range 9.4% to 10.6%. Whereas, the estimated proportion of 10.0% of an estimate of 1,000,000 has a standard error of 1.4 percentage points, and therefore there are two chances in three that the true proportion is in the range 8.6% to 11.4%; and there are about 19 chances in 20 that the true proportion is in the range 7.2% to 12.8%.

**15** The standard error of an estimated percentage or rate calculated by using sample data for both numerator and denominator, depends on both the size of the numerator and the size of the denominator. However, the relative standard error of the estimated percentage or rate will always be lower than the relative standard error of the estimate of the numerator.

Standard errors of differences between proportions

**16** To calculate the significance of difference between two proportions the following formula may be used when comparing proportions from two different sub-populations.

For example, the proportion of people whose first language was not English and rated their English reading skill as excellent or good can be compared with the proportion of people whose first language was English and rated their English reading skill as excellent or good. Denote the estimated ratios by  $\hat{R}(\text{NE})$  for the number of people whose first language was not English and rated their English reading skill as excellent or good, and  $\hat{R}(\text{E})$  for the number of people whose first language was English and rated their English reading skill as excellent or good.

Then,

$$SE\{ \hat{R}(\text{NE}) - \hat{R}(\text{E}) \} = \sqrt{SE[\hat{R}(\text{NE})]^2 + SE[\hat{R}(\text{E})]^2} .$$

There are about 19 chances in 20 that the true difference of proportions falls within two standard errors either side of the estimated difference. If the value zero does not lie within this range, then the estimated difference of proportions is statistically significant.

**17** Consider the following example: an estimated 773,500 people whose first language was not English and rated their English reading skill as excellent or good represent 33.6% of people whose first language was not English (2,303,700); and an estimated 1,092,600 people whose first language was English and rated their English reading skill as excellent or good represent 10.0% of people whose first language was English (10,917,100). The standard error of 33.6% is 1.2 percentage points, and the standard error of 10.0% is 0.3 percentage points. Applying the above formula, the standard error for the difference of proportions (23.6%) is 1.2 percentage points. Therefore, there are about two chances in three that the true difference (the number that would have been obtained if the whole population had been included in the survey) is within the range 22.4% to 24.8%. There are about 19 chances in 20 that the true value is within the range 21.2% to 26.0%.

**18** Standard errors contained in tables A and B are designed to provide an average standard error applicable to most SAL statistics at the Australian level. However, tables A and B may be quite inaccurate in some unusual circumstances. Standard errors for State/Territory data are available on request.

**A STANDARD ERRORS OF ESTIMATES**

<i>Size of estimate</i>	<i>Standard error</i>	<i>Relative standard error</i>
no.	no.	%
400	640	160.0
1 000	1 160	116.0
5 000	3 050	61.0
10 000	4 500	45.0
20 000	6 450	32.3
30 000	7 950	26.5
40 000	9 150	22.9
50 000	10 200	20.4
60 000	11 100	18.5
70 000	11 900	17.0
80 000	12 650	15.8
90 000	13 350	14.8
100 000	14 000	14.0
120 000	15 200	12.7
140 000	16 250	11.6
160 000	17 200	10.8
180 000	18 100	10.1
200 000	18 950	9.5
250 000	20 800	8.3
300 000	22 400	7.5
400 000	25 100	6.3
500 000	27 350	5.5
750 000	31 850	4.2
1 000 000	35 350	3.5
1 250 000	38 200	3.1
1 500 000	40 650	2.7
1 750 000	42 800	2.4
2 000 000	44 750	2.2
2 500 000	48 100	1.9
3 000 000	50 900	1.7
3 500 000	53 400	1.5
4 000 000	55 600	1.4
4 500 000	57 550	1.3
5 000 000	59 350	1.2
10 000 000	71 900	0.7
14 000 000	78 330	0.6

**B STANDARD ERRORS OF PROPORTIONS (In Percentage Points), Selected Estimate Sizes**

Size of estimate	Proportion.....									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
500,000 Standard error	2.0	2.6	2.9	3.1	3.1	3.0	2.8	2.5	1.8	0.6
1,000,000 Standard error	1.4	1.8	2.0	2.1	2.1	2.0	1.9	1.6	1.2	0.4
2,000,000 Standard error	0.9	1.2	1.3	1.4	1.4	1.3	1.2	1.1	0.8	0.3
3,000,000 Standard error	0.7	0.9	1.0	1.1	1.1	1.0	0.9	0.8	0.6	0.2
4,000,000 Standard error	0.6	0.8	0.8	0.9	0.9	0.8	0.8	0.7	0.5	0.2
5,000,000 Standard error	0.5	0.7	0.7	0.8	0.8	0.7	0.7	0.6	0.4	0.1
6,000,000 Standard error	0.5	0.6	0.6	0.7	0.7	0.6	0.6	0.5	0.4	0.1
7,000,000 Standard error	0.4	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.3	0.1
8,000,000 Standard error	0.4	0.5	0.5	0.6	0.6	0.5	0.5	0.4	0.3	0.1
9,000,000 Standard error	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.1
10,000,000 Standard error	0.3	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.1
11,000,000 Standard error	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.1
12,000,000 Standard error	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.1
13,000,000 Standard error	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.1
14,000,000 Standard error	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.1

## GLOSSARY .....

**Activities in daily life** Respondents were asked how often they performed the following activities in daily life:

- read newspapers or magazines;
- read books;
- wrote letters or anything else that is more than one page in length;
- listened to radio, records, tapes, cassettes or compact discs;
- used a public library;
- attended movies, plays or concerts;
- attended or took part in a sporting event; and
- participated in volunteer or community organisations.

**Document literacy** The knowledge and skills required to locate and use information contained in materials such as tables, schedules, charts, graphs and maps.

**Educational attainment** Highest level of schooling or post-school educational qualification completed, e.g. trade qualification, certificate or university degree. These qualifications may have been obtained in any country and need not have been accredited or recognised in Australia. The classifications used in this publication are based on the *ABS Classification of Qualifications (ABSCQ)* (Cat. no. 1262.0).

**Employed** Persons aged 15–74 who worked in a job, business or farm in the reference week, or who had a job, business or farm but were not at work, and who:

- usually worked for one hour or more per week for pay, profit, commission or payment in kind (comprising employees, employers and own account workers); or
- usually worked for one hour or more per week without pay in a family business or farm (i.e. contributing family workers).

**First language spoken** Up to two languages may be mentioned by the respondent, if both languages were spoken equally. If either the first or second mention is English, then the person is not defined as a person whose first language was not English.

**Highest level of secondary school available** The highest level of secondary school (or equivalent) offered by the education system at the time the respondent left school.

**Income quintiles** A classification of income values which divides the distribution of the total population into five groups having equal frequencies.

**Industry** Industry is classified according to the *Australian and New Zealand Standard Industrial Classification (ANZSIC)* (Cat. no. 1292.0).

**Labour force** Persons who were employed or unemployed, as defined.

**Labour force participation rate** For any group, the labour force expressed as a percentage of the population in the same group.

**Labour force status** Whether employed, unemployed or not in the labour force (as defined).

<b>Literacy skills</b>	The information processing skills necessary to use printed material found at work, at home, and in the community. Literacy skills of three types – prose, document and quantitative (see definitions) were assessed using a set of tasks designed for this purpose. For more information about the tasks and literacy scales, see Appendix A.
<b>Literacy-related activities in the workplace</b>	<p>Respondents who had worked in the last 12 months were asked whether they performed any of the following activities in their main job, and if so, how often.</p> <p>Read or used:</p> <ul style="list-style-type: none"> <li>■ letters or memos;</li> <li>■ reports, articles, magazines or journals;</li> <li>■ manuals or reference books, including catalogues;</li> <li>■ diagrams or plans;</li> <li>■ bills, invoices, spreadsheets or budget tables;</li> <li>■ material written in a language other than English; and</li> <li>■ directions or instructions for any products.</li> </ul> <p>Wrote:</p> <ul style="list-style-type: none"> <li>■ letters or memos;</li> <li>■ reports or articles; and</li> <li>■ estimates or technical specifications.</li> </ul> <p>Filled out:</p> <ul style="list-style-type: none"> <li>■ forms such as bills, invoices or budgets.</li> </ul> <p>Used arithmetic or mathematics to:</p> <ul style="list-style-type: none"> <li>■ measure or estimate the size or weight of objects; and</li> <li>■ calculate prices, costs or budgets.</li> </ul>
<b>Main job</b>	The job in which an employed person usually worked the most hours.
<b>Median</b>	The middle value of a set of values when the values are sorted in order.
<b>Migrant</b>	A person who was not born in Australia and who was a permanent resident of Australia at the time of the survey.
<b>Not in the labour force</b>	Persons who were neither employed nor unemployed, as defined. They include the retired, people who perform (unpaid) home duties and people who are still studying.
<b>Occupation</b>	Occupation is classified according to the ASCO — <i>Australian Standard Classification of Occupations</i> , Second Edition (Cat. no. 1220.0).
<b>Post-school qualifications</b>	Qualifications held by those persons who had left school and since leaving school have obtained a trade qualification, certificate, diploma, degree or any other qualification.
<b>Prose literacy</b>	The knowledge and skills needed to understand and use information from various kinds of textual material including newspapers, brochures and fiction.
<b>Quantitative literacy</b>	The knowledge and skills required to apply arithmetic operations, either alone or sequentially, to numbers embedded in printed materials, such as balancing a chequebook, working out a tip, completing an order form or determining, from an advertisement, the amount of interest on a loan.

<b>Self-perception</b>	Respondents were asked to rate (as excellent, good, moderate or poor) their own reading, writing and basic mathematical skills for the needs of daily life, and those respondents who had worked in the last 12 months were asked to rate their reading, writing and basic mathematical skills for the needs of their main job. Respondents whose first language was not English were asked to rate their English reading and writing skills in each case. 'Self-rating' is another term used to describe how respondents rated their own literacy skills.
<b>Unemployed</b>	Persons aged 15–74 who were not employed (as defined), had actively looked for full-time or part-time work at any time in the four weeks up to the end of the reference week, and were available for work in the reference week if they had found a job.
<b>Unemployment rate</b>	For any group, the number of unemployed persons expressed as a percentage of the labour force in the same group.
<b>Vocational qualifications</b>	<p>Skilled Vocational Qualifications: The entry requirement is usually the completion of Year 10 or its equivalent. In addition, some courses may require a student to be concurrently employed in that specific field. The duration of study is two to four years, and typically involves some on-the-job training. Courses provide individuals with the knowledge and skills necessary to work in a specific vocation, recognised trade or craft, that requires a high degree of skill in a range of related activities. Examples include: Trade Certificate in Vehicle Building; Apprenticeship in Electrical Fitting; Certificate in Landscape Design.</p> <p>Basic Vocational Qualifications: Often require Year 10 completion, however many courses have no formal entry requirements. The duration of study ranges from one semester to one year of full-time study or its equivalent. Courses provide individuals with the practical skills and background knowledge necessary for employment at the operative level in many different fields. Examples include: Pre-apprenticeship in Plumbing; Certificate in Shorthand and Keyboarding; Pre-vocational Certificate in Automotive Mechanics.</p>
<b>Whether job opportunities limited</b>	Respondents were asked whether their reading, writing or basic mathematical skills were limiting their job opportunities in general. Respondents whose first language was not English were asked whether their English reading or writing skills were limiting their job opportunities in general.
<b>Worked in the last 12 months</b>	Had at least one employer or own business in the last 12 months.
<b>Worker</b>	Person who had worked in the last 12 months.

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