

Adult Literacy in New Zealand

Results from the International Adult Literacy Survey

Adult literacy is considered to be vital to the economic wellbeing of developed countries. 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 comprehend and apply information of varying difficulty from a range of sources to function effectively at work and in everyday life. Therefore, governments and international organisations are especially keen for some insight into any possible deficiencies in literacy and numeracy skills.

The information presented below provides a summary of the preliminary findings from a survey of adult literacy in New Zealand¹. The survey was conducted in New Zealand in March 1996, as part of a series of international surveys known as the International Adult Literacy Survey (IALS)². By the end of 1998 more than 20 countries will have completed their collection of data. This is the first comprehensive study of its type in New Zealand and provides us with the opportunity to benchmark ourselves against other comparable nations, to establish a baseline from which to measure changes in the literacy skills of New Zealand's population over time, to identify 'at risk' and disadvantaged groups with low literacy and numeracy skills, and to assist in setting strategic directions aimed at addressing skill needs of the population.

KEY FINDINGS

- The distribution of literacy skills within the New Zealand population is similar to that of Australia, the United States and the United Kingdom.
- Approximately one in five New Zealanders is operating at a highly effective level of literacy.
- New Zealanders do less well at document and quantitative literacy than at prose literacy.
- The majority of Maori, Pacific Islands people and those from other ethnic minority groups are functioning below the level of competence in literacy required to effectively meet the demands of everyday life.
- Labour force status and income are related to level of literacy.
- Increased retention into the senior secondary school appears to be associated with improving literacy levels.
- Maori with tertiary qualifications have literacy profiles similar to those of tertiary educated European/Pakeha.

DEFINING LITERACY

Measuring literacy is not simply a case of classifying someone as either 'literate' or 'illiterate'. Literacy forms a continuum from those people in society who have only minimal or basic reading skills to those who possess highly-developed skills to allow them to comprehend complex information. In acknowledging this continuum, this study has covered a wide range of literacy and numeracy skills in a number of different contexts. The definition used is:

Using printed and written information to function in society, to achieve one's goals and to develop one's knowledge and potential.

Literacy was examined across three domains:

Prose literacy: the knowledge and skills required to understand and use information from texts such as passages of fiction and newspaper articles;

Document literacy: the knowledge and skills required to locate and use information contained in various formats such as timetables, graphs, charts, and forms; and

Quantitative literacy: the knowledge and skills required to apply arithmetic operations, either alone or sequentially, to numbers embedded in printed materials, such as calculating savings from a sale

advertisement or working out the interest required to achieve a desired return on an investment.

The Survey

The results from the survey are based on a random sample of 4223 New Zealand adults ranging in age from 16 to 65 years³.

The survey used a 'task-based' methodology to assess skill level developed by Statistics Canada and the Education Testing Service in the United States. It utilised a wide range of prose, document and quantitative literacy texts containing the type of information that people encounter in everyday circumstances (such as reading a train or bus time table, interpreting newspaper extracts, or instructions from a medicine bottle). This methodology has been found to be valid in producing population estimates of literacy across countries. The items contained in the survey were each reviewed and adapted in terms of their appropriateness to a New Zealand context by a panel of New Zealand experts. Items were then pre-tested and piloted prior to the main survey being conducted. In New Zealand the assessment was in English, and all participants were tested in their homes by trained interviewers.

Literacy Skill Levels

The achievement attained on each of these literacy domains is grouped into one of five 'skill levels'. Level 1 represented the lowest ability range and level 5 the highest. Literacy level 3 is regarded by experts as being the minimum required for individuals to meet the 'complex demands of everyday life and work' in the emerging 'knowledge society'⁴.

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.

Level 2: People at this level would be able to use some printed material, but this would generally be relatively simple.

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.

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.

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 sequentially⁵.

ANALYSIS OF NEW ZEALAND LITERACY LEVELS

The results of this adult literacy study reflect not only the output of an education system over successive decades but also the influence of a range of other factors including regular use and maintenance of learnt skills, the nature of work, source of new migrants, and level of those from non-English speaking backgrounds in the population. These results have been weighted to be representative of the New Zealand population, taking into account such factors as gender, age, level of education, size of the household and size of the community.

The relative proportion of adult New Zealanders (aged 16–65 years) estimated to be at each level of literacy for each domain is illustrated in Figure 1.

Figure 1

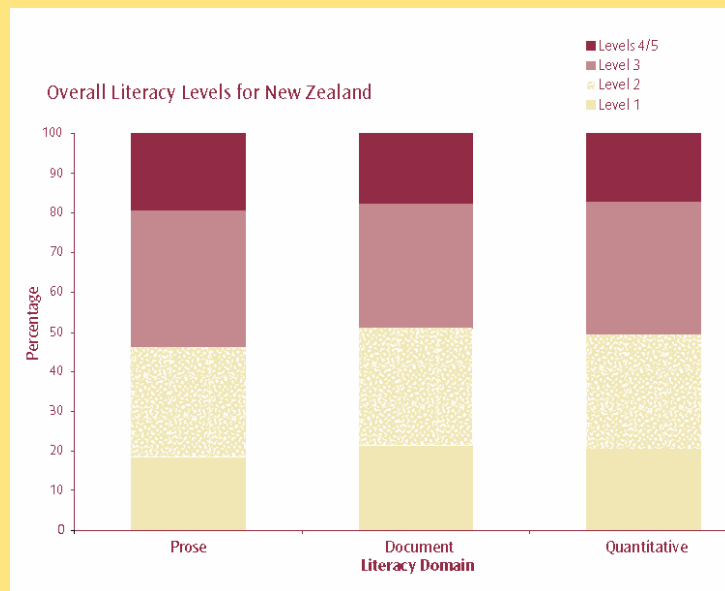


Figure 2

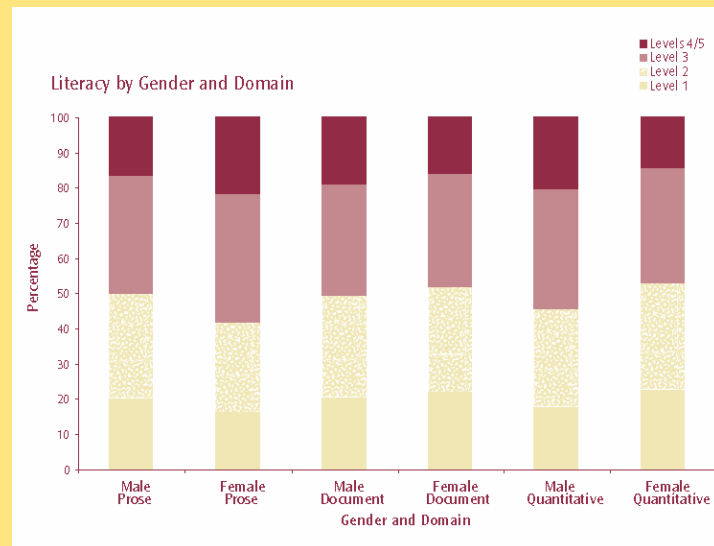


Figure 3

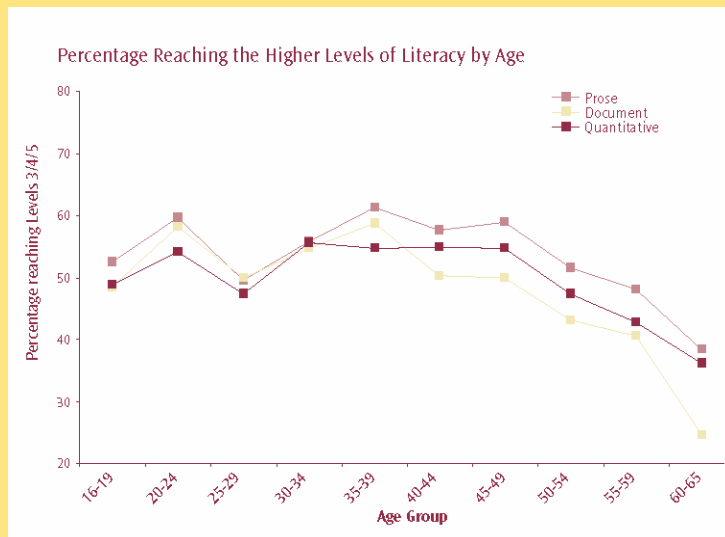


Figure 4

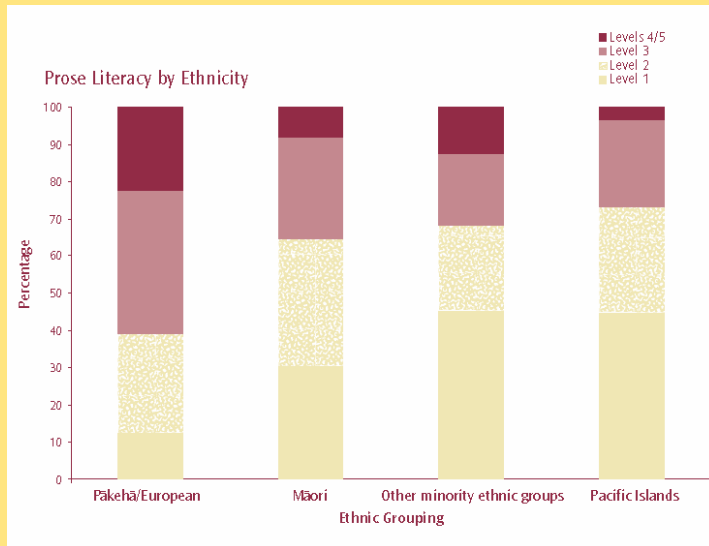


Figure 5

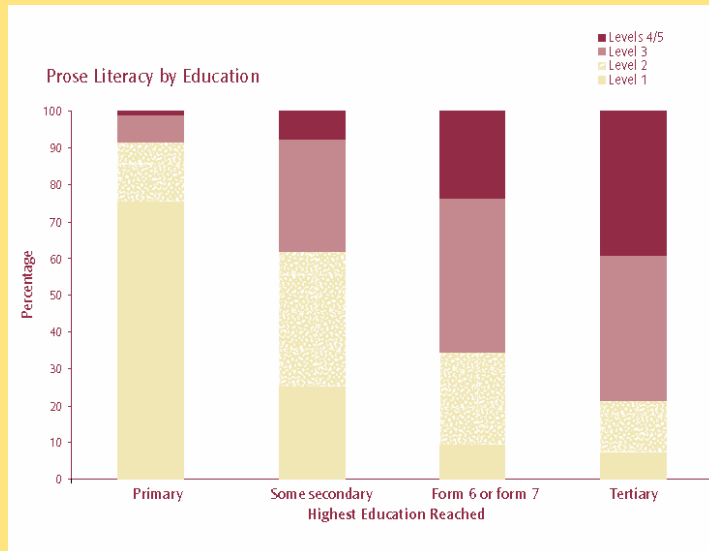
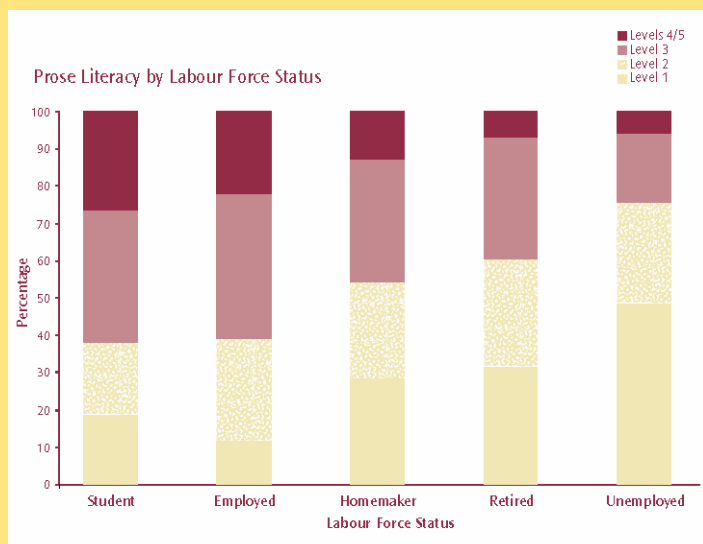


Figure 6



New Zealanders were stronger in the prose literacy domain than in the document and quantitative literacy domains. Fifty-five percent of New Zealanders were at the higher levels (level 3 and above) in prose literacy compared with 51% in document and 50% in quantitative⁶. However, over a million adults are below the minimum level of competence in each of the three domains required to meet the demands of everyday life. Within this group, 20% of New Zealand's adult population was found have very poor literacy skills (level 1).

Gender

Women performed better than men in prose literacy, having 58% at the higher levels compared with 50% of men (Figure 2). However, there is a greater proportion of men at the higher levels of quantitative literacy than women (55% compared with 47%). Differences between men and women in document literacy were negligible.

Age

In all three domains there was found to be a peak at both the 20 to 24 years and 35 to 39 years age groups, and a downward trend in literacy levels among those above 50 years of age (Figure 3).

An examination of the international data revealed that in many countries there was a trend of increasing literacy between 16 and about 35 years of age. This trend is considered to be due to the increased use of certain literacy skills during adult and work life experiences. In New Zealand there appears to be a similar trend in operation, however, there is another effect modifying this which is manifest in relatively higher levels of literacy in the 20 to 24 years old group (ie, the peak). This effect is associated with an increased proportion of the cohort who are staying on to senior levels of schooling (forms 6 and 7). Moreover, as the section on educational qualification (below) points out, those who complete form 6 are more likely to have higher literacy levels than those who do not. This is reinforced here in an analysis of the age/literacy profile which shows that 70% in the 20 to 24 years age group had gone to at least form 6, compared with less than 50% in the 25 to 29 years age group.

The relatively poor performance of those in the eldest age group may be related to factors such as the much lower proportion of this cohort receiving post-primary education — for example, only 45% of those in the

55-64 years old cohort completed upper secondary education, compared with 60% of the 35 to 44 years old cohort⁷. Other possible considerations include the ageing process itself which is known to adversely affect the cognitive functioning of some individuals.

Those in the eldest age group had less than 40% at the higher levels of prose and quantitative literacy, and this age group has a particularly low level of ability to locate and use information contained in documents, with only 25% at the higher levels of this domain.

Ethnicity

For the purpose of this study, respondents were clustered into four ethnic groupings: Maori, Pakeha/European, Pacific Islands, and 'other ethnic minority groups'.

There was a discernible trend across the three literacy domains, with Pakeha/European consistently having a larger proportion in the higher levels and the Pacific Islands group consistently having the smallest. Maori had a greater proportion than 'other ethnic minority groups' in the higher levels of prose literacy but this was reversed in the document and quantitative literacy domains. A majority (60%) of Pakeha/European were above the considered minimum level of competence to meet the prose literacy requirements of the knowledge society. This contrasts with the majority Pacific Islands people, Maori and the 'other' minority ethnic group who were below the considered minimum level of competence (Figure 4).

The document and quantitative literacy domains revealed similar profiles, with 70% Maori and about three-quarters of Pacific Islands people failing to meet the minimum level of competence (ie; level 3 or higher). In fact, between 40% and 45% of Pacific Islands adults were at the very lowest level of literacy (level 1) in each domain, although 70% of Pacific Islands people at level 1 were born outside of New Zealand which may account for this.

In the document and the quantitative domains, there were considerable gender differences favouring males among Maori and, more markedly, Pacific Islands people which were not found among Pakeha/Europeans. For example, only 18% of Pacific Islands females were at the higher levels of quantitative literacy compared with 42% of Pacific Islands males. For Maori, the gender disparity was not as great but was still substantial, with 26% of females at the higher

levels of quantitative literacy compared with 36% of males.

First Language

Approximately 10% of New Zealand's population had a first language other than English. Unsurprisingly, about 70% of these people do not reach the higher literacy levels across the three domains. This was true both for those born in New Zealand and for those born overseas. However, those born overseas had a considerably higher percentage at the very lowest literacy level (level 1).

About one-half of those for whom English was not their first language were from 'other minority ethnic groups' and one-quarter were from Pacific Islands ethnic backgrounds. Only 35% of those whose first language is other than English are employed, compared with 57% of those whose first language is English. Those who did not speak English as their first language had more than twice the proportion of unemployed and students as did those who spoke English as their first language.

Level of Educational Qualification

There was a strong relationship between educational attainment and literacy (Figure 5).

Seventy-five percent of those who had not gone beyond primary school were at the lowest level (level 1) of prose literacy compared with only 7% of those who had tertiary qualifications. Overall, 79% of tertiary-qualified respondents were at the higher levels of prose literacy, compared with 65% of those who had completed form 6 but

were not tertiary qualified, 38% of those who had some secondary education but had not completed form 6, and 8% of those who had not gone beyond primary school. Very similar distributions were evident in both document and quantitative literacy.

The reasons that some tertiary-qualified persons have low literacy skills may relate to such factors as the respondent's first language being other than English, or qualifications in subject areas that require relatively little prosaic elaboration.

These data, together with the age/literacy results, suggest that senior secondary schooling is indeed adding value to students' educational outcomes, certainly regarding the wide range of literacy skills covered in this study.

Maori with tertiary qualifications had similar literacy profiles to tertiary-educated Pakeha.

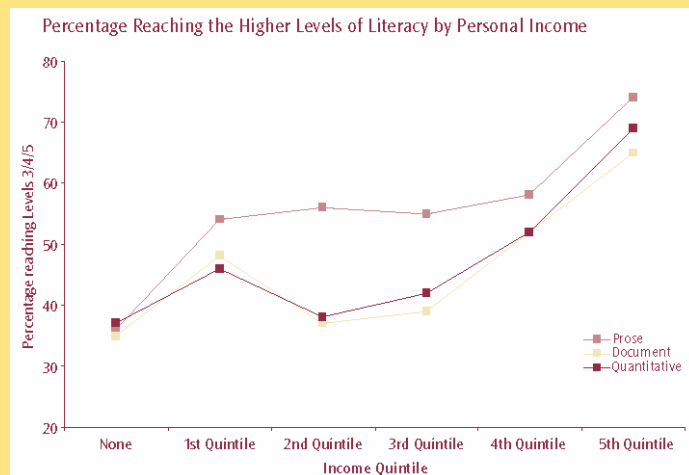
Labour Force Status

Within the labour force there were found to be stark contrasts in the literacy skills of those who were unemployed and those who were in work. Almost half of all unemployed were at the very lowest level of literacy (level 1) in each domain (Figure 6).

Retired people also performed poorly in each domain especially in document literacy where only 15% were able to operate at a proficient level. This suggests that documents used by this group need to be in a form that is accessible.

Students and employed people had the highest levels of literacy, with between 55% and 62% in the higher levels of literacy across all three domains.

Figure 7



Income Level

Respondents who reported income were rank-ordered and grouped into quintiles. A separate grouping consisted of those who reported 'no personal income' (5% of the sample). In each of the three literacy domains, the top 20% of earners consistently recorded the highest levels of literacy (Figure 7).

Interestingly, there was little difference in the prose literacy profiles of those in all except the upper 20% of income earners. The highest earning quintile and the 'no personal income' were polarised, with 75% and 37% respectively at the higher literacy levels. Moreover, 36% of the 'no personal income' group were at the lowest literacy level compared with only 6% of the highest earning quintile.

The document and quantitative literacy domains differed markedly from the prose literacy domain but were similar to each other. It was surprising to find that there was a higher overall level of literacy among those in the lowest 20% of income earners than among those in the next two higher earning groups, but this may be accounted for by a high concentration of students within the former.

Other Points of Interest

Respondents were asked to provide information on their home environments and recreational activities. There were only small differences (if any) between those in the higher and those in the lower levels of literacy regarding the presence of daily newspapers, weekly newspapers, dictionaries or encyclopaedias. However, almost 95% of those at the higher levels of literacy had at least 25 books in the home, compared with less than 80% of those at the lower levels of literacy.

There were also considerable differences between the more and less literate regarding their amount of television/video viewing. For example, only 20% of those in the higher levels of literacy watched more than three hours a day, compared with 35% of those in the lower levels.

Figure 8

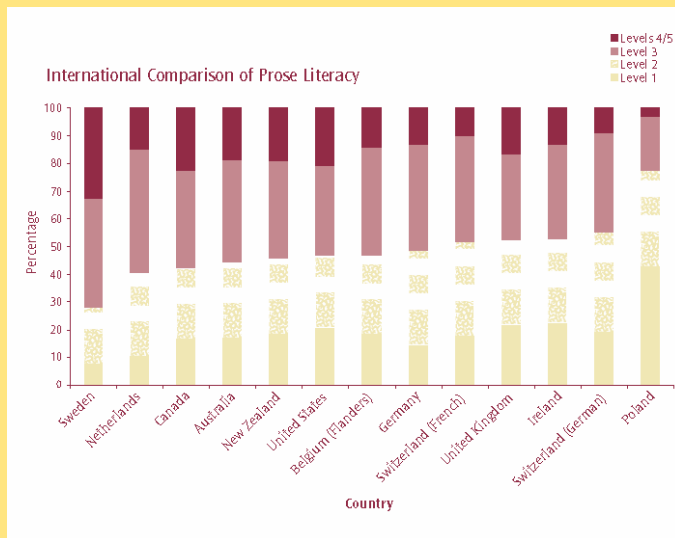


Figure 9

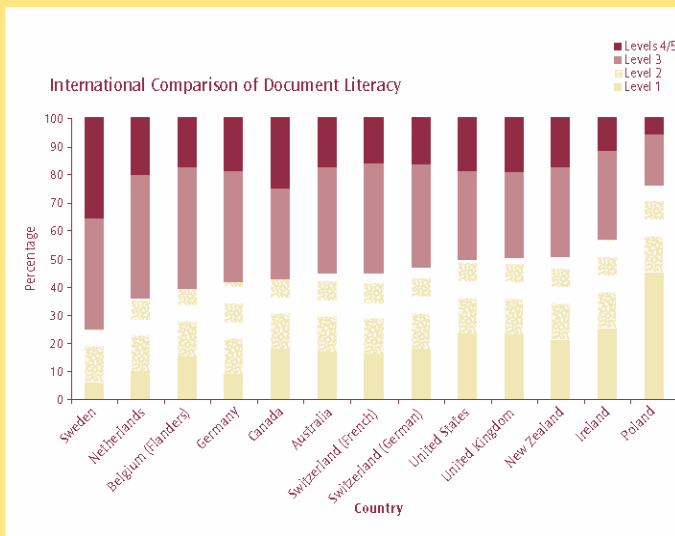
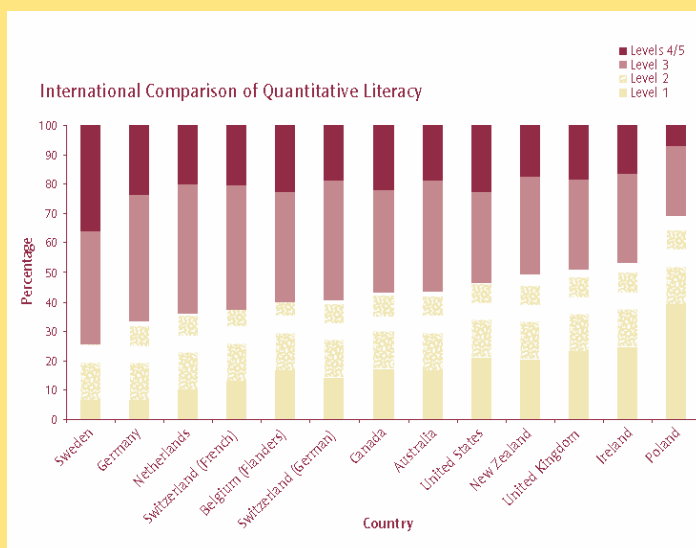


Figure 10



INTERNATIONAL COMPARISONS

The comparison of international data must be interpreted cautiously. While every attempt was made to ensure the rigour of the methodology, it is not always possible to eliminate all differences between countries' samples using statistical methods. Inter-country comparisons must also take into consideration the range of different population contexts which influence literacy. These include different educational and training experiences, differing levels of dominant-language speakers, and differing age profiles. The specific mix of migrant groups, people who have been educated at home and abroad, as well as those who have recently completed qualifications, and those who may have completed their schooling many decades ago is unique to each country. Having said this, comparisons do allow a degree of benchmarking and highlight similarities and differences between countries.

In comparing countries' mean scores on prose literacy, only Sweden and Netherlands had significantly higher scores than New Zealand⁸. Ireland, Poland, Switzerland (French), Switzerland (German) and the United Kingdom all had mean scores significantly lower than New Zealand's (Figure 8). It is interesting to note, however, that the results for European/Pakeha New Zealanders compare closely with those of the Netherlands' population.

The results were not as encouraging for the other two domains. Belgium (Flemish), Canada, Germany, the Netherlands and Sweden all had significantly higher mean scores in document literacy than New Zealand, while only Ireland and Poland had mean scores that were significantly below that of New Zealand (Figure 9). All other countries had significantly higher mean scores than New Zealand in quantitative literacy, with the exception of Ireland, the United Kingdom and the United States, where there were no significant differences, and Poland, whose mean score was significantly lower than that of New Zealand (Figure 10).

CONCLUSION

Literacy skills are critical tools for effectively coping within our society. Successful transition to a knowledge-based

economy will rest with our capacity to manage, sift, interpret and exploit vast sums of information. Critical to this will be ensuring widespread mastery of the literacy skills assessed in the course of this study. Literacy has been shown here to have a significant influence on life chance, as witnessed by the differentials in income and labour market outcomes.

This study has shown that around one in five New Zealanders are operating at a highly effective level of literacy (Level 4 or 5), able to manage abstract concepts and employ specialised knowledge in interpreting information. Over half of New Zealand adults are operating at a level considered as a requirement to meet the demands of 'everyday life'. This distribution of literacy skills within the population is similar to that of Australia, the United States and United Kingdom, but lags dramatically behind Sweden, where close to three-quarters of their population is effectively operating at this level. Within New Zealand, document and quantitative literacy skills were found to be poorer than skills in prose literacy.

No evidence was found to suggest that literacy levels within New Zealand were deteriorating. Rather, literacy skills appear to be improving in line with improvements in senior school retention during the past decade.

Of particular concern for New Zealand, as with a number of the nations in this study, is the high concentration of adults with poor literacy skills (around 1 in 5 New Zealanders). As the availability of low-skilled jobs within our economy diminishes, this group will become increasingly vulnerable. The effect of this is witnessed by the overall poorer literacy levels among the unemployed. Three-quarters of all unemployed were found to be in the two lowest literacy levels across each literacy domain.

Poorer literacy was also found to be concentrated within the Pacific Islands and other ethnic minority groups and within the Maori population. Results for Pacific Islands and other ethnic minority groups were reflected in the relatively poor English literacy skills of those for whom English was not their first language.

The findings of this study are far reaching and they highlight a need for ongoing focus on adult literacy in New Zealand. While schools offer an initial opportunity to develop these skills within the population, it is clear from the results of this

study that remedial programmes and programmes targeted at those for whom English is a second language will be critical to improving the extent to which these groups come to fully participate in social and economic activity. In this respect employers also have a responsibility both in acknowledging the skill differences which may reside within their workforce, and secondly to assist in addressing them if they are to harness the full potential of their employees.

¹ The final results for the survey are expected to be published in mid-1998.

² In New Zealand, the survey was undertaken by the National Research Bureau (NRB) under contract to the Ministry of Education. This study represents the first, large-scale national literacy survey of working-age adults in New Zealand.

³ The sample was stratified by geographic region and population size. Smaller regions or 'meshblocks' were randomly selected within the strata. Households were then randomly selected within the meshblock. Finally, one person was randomly selected within the household. There was a 75% response rate.

⁴ I.P. Felligi & T.J. Alexander, 'Editorial' in *Literacy skills for the knowledge society*. OECD and Statistics Canada, 1997.

⁵ Level 4 and 5 data have been aggregated for the analyses due to the small number of respondents achieving at Level 5.

⁶ Throughout this summary 'high' levels of literacy refers to levels 3, 4 and 5.

⁷ *Education at a glance*. OECD, 1996.

⁸ 'Significance' here, and throughout this summary, refers to statistical significance.

ACKNOWLEDGEMENT

We are indebted to the assistance of both Statistics Canada and the Educational Testing Service (USA) who developed the instruments employed in this study and assisted in the preparation of survey results. New Zealand field work for this survey was conducted by NRB.

This report was prepared by Maurice Walker, Karl Udy and Nicholas Pole with assistance from Steve May, Glenn Chamberlain and Fiona Sturrock.