



The Literacy Performance of Young Adults Who Had Reading Difficulties in School: New Zealand Data from the International Adult Literacy and Lifestyle Survey

James W. Chapman¹ and William E. Tunmer^{1*}

¹ Massey University Institute of Education, New Zealand

The performances of young New Zealand adults (16-24 years) with reading difficulties (RD; n=201) were compared with same-aged peers without reading difficulties (NRD; n=653) on measures of literacy in the Adult Literacy and Life-Skills (ALLS) 2006 survey. All in this sample had received their schooling in English and in New Zealand. The adults with RD were those who reported having received remedial or special class assistance for reading while in school. RD adults performed significantly less well than NRD adults on measures of prose and document literacy, numeracy, and problem solving. RD adults tended to have lower educational qualifications and lower status occupations than those who did not receive remedial reading. Differences in work-related literacy skills, health, and emotional wellbeing, were small to negligible, possibly because these correlates of literacy performance had not had time to become manifest. The RD adults tended not to choose or like reading when compared to their NRD peers. We considered literacy practices that were in place while these adults were in primary school, including remedial and special class interventions for children with RD, as contributing factors to the relatively poor literacy levels.

KEYWORDS: adult literacy; New Zealand literacy instruction; whole language; international adult literacy surveys

In response to results for New Zealand of the 1996 International Adult Literacy Survey (IALS) the Foreword to the document, *More than words: the New Zealand adult literacy strategy* (Ministry of

Education, 2001), stated that "Too many New Zealanders lack the essential reading and writing skills to succeed in modern life and work" (p.2). Further, "one in five adult New Zealanders have very

* Correspondence to:

James W. Chapman and William E. Tunmer, Massey University Institute of Education, Private Bag 11 222, Palmerston North, New Zealand, 4440. Email: j.chapman@massey.ac.nz

poor literacy skills" and high levels of literacy and numeracy are part of the basic skill set needed for participation in "our high-tech, knowledge society" (p.2). "Urgent action, sustained over the long-term, is needed to improve adult literacy levels in New Zealand. High levels of adult literacy are critical for the transformation and modernization of the New Zealand economy, and the transition to a knowledge society" (p.4). The IALS results for New Zealand indicated that approximately one million adults performed below the minimum level "of literacy competence required for everyday life and work" (National Centre for Workplace Literacy & Language, 2000, p.1).

The *More than words* document presented the adult literacy strategy, which focused on increasing the opportunities for adult literacy learning by providing significantly increased provisions for literacy improvement in workplaces, communities, and tertiary institutions (New Zealand Ministry of Education, 2001, p.3). The benchmark for success was specified as being improvement on a national measure of literacy similar to the IALS assessments carried out in 1996. The anticipated outcomes were expressed as follows:

"Beyond 2004, we will have established the necessary systems to ensure delivery of quality adult literacy teaching, *and will be beginning to reap the results of the investment in children's literacy at schools.* If another International Adult Literacy Survey were undertaken at that time *we should be able to say with confidence that New Zealand's results would be better than they were in 1996*" (Ministry of

Education, 2001, p.7; emphases added).

Another international adult literacy survey was undertaken in 2006; the Adult Literacy and Life Skills survey (ALLS: Satherley & Lawes, 2007a). The current study examined whether the results of the ALLS survey were better than those from the 1996 IALS survey. Specifically, we focused on the literacy performances and lifestyle factors of young adults (16-24 years old) who indicated in the ALLS survey that they had received remedial assistance for reading while in school.

Adults between 16 and 24 years in the ALLS survey who received their formal education in New Zealand commenced school at 5 years of age between 1986 and 1995, the period of time during which the strongly whole language orientated approach to literacy instruction, as promoted in *Reading in junior classes* (New Zealand Department of Education, 1985), was in full use throughout New Zealand.

Further, the Reading Recovery programme was introduced in 1983 as a preventive means of substantially reducing the number of children who develop ongoing literacy difficulties (Clay, 1987). Clay (1987) made confident claims for the success of RR, stating that it is a "programme which should clear out of the remedial education system all the children who do not learn to read for many event-produced reasons [i.e., environment, cultural or economic causes] and all children who have organically based problems but who can be taught to achieve independent learning status in reading and writing despite this" (p. 169).

Pause, Prompt and Praise (PPP; Glynn & Wheldall, 1992; Wheldall & Glynn, 1989) was an additional programme introduced around the same time as RR. This programme uses parents or peers as tutors to assist older struggling readers who might not qualify for specialised remedial assistance. Like RR, the PPP programme was designed to complement New Zealand's whole language approach to literacy instruction, in which the relative emphasis in word identification strategies is on the use of sentence context cues rather than on grapho-phonetic information.

For children who continue to make poor progress either in RR or at a later stage, Resource Teachers: Literacy (RT:Lit) may provide assistance. In addition to RT:Lits, there are Resource Teachers: Learning and Behaviour (RT:LB). Their role is to focus on the needs of students with difficulties in learning and/or behaviour. No formal criteria exist for identifying students for placement in either the RT:Lit or RT:LB programmes. Judgements regarding placement are typically made on the basis of day-to-day classroom teacher observations and assessments.

A number of adults in the youngest ALLS age group, especially those who indicated they had received help for reading, would have received tuition in the RR programme, and/or from RT:Lits, tutors in the *Pause Prompt Praise* programme, or from RTLBs. All of these programmes were introduced in the 1980s and 1990s to significantly improve the literacy performance of New Zealand children.

Smith and Elley (1994, 1997) considered that these programmes, based on the

whole language approach, were world-leading. They wrote that "Cross-national surveys of reading achievement... have consistently shown that New Zealand achievement levels in reading are very high" (1997, p.110). These authors noted that expert commentators from other countries "have been fulsome in their praise of our reading programmes, our reading teachers, our reading materials and our Reading Recovery methods" (1997, p.110). They further stated that "our methods of teaching... are all spreading to other parts of the world... It is no wonder that New Zealand is held up as a country whose reading programmes are best in the world [*Newsweek*, 1991]" (1997, p.110).

Given the link between literacy achievement in school and literacy performance in adulthood (e.g., Culligan, Arnold, Noble & Sligo, 2004, Pressley, 2006; Spear-Swerling & Sternberg, 1996), the positive effects of these reading programmes (e.g., Reading Recovery; *Reading in junior classes*; *Pause, Prompt, Praise*), should be observed in the ALLS survey data. Johnson (2000) commented that New Zealand's "renowned... innovations in children's reading and [its] recently initiated...children's literacy strategy" (p.8) would eventually flow through into improved adult literacy outcomes. Similarly, she referred to New Zealand's "renowned" Reading Recovery programme as a means of preventing "low literacy in the younger generation" (Johnson, 2000, p.9).

Not only is literacy achievement in school linked to literacy performance in adulthood, but also to post-schooling educational qualifications, employment

and income levels, well-being, and health (e.g., DeWalt & Pignone, 2005; Earle, 2010a & b; Kutner, Greenberg, Ying, Hsu & Dunleavy, 2007; Schogen & Lawes, 2009). In general, higher literacy levels are associated with higher educational qualifications, employment and income levels, and with more positive health and well-being indicators.

With these points in mind, our study addressed the following questions:

1. Did literacy achievement assessed in the ALLS survey for young adults in the 16 to 24 year age range improve compared to the same age group who participated in the 1996 IALS study?
2. How did young adults who indicated in the ALLS survey that they had received remedial assistance for reading difficulties compare with those adults who did not receive remedial assistance in terms of the ALLS literacy assessments?
3. How did young adults who received remedial assistance for reading difficulties compare with their same-aged peers who did not receive remedial assistance in terms of a range of life-skills variables included in the ALLS survey?

The ALLS Survey

Introduction

The Adult Literacy and Life Skills (ALLS) survey was a joint project of the Canadian Federal Government, the United States National Center for Education Statistics, and the OECD,

involving 13 participating countries. The survey was constructed by the Educational Testing Service, in consultation with the government of each participating country (in New Zealand the Ministry of Education represented the government). The administration of the survey and treatment of data were overseen by Statistics Canada, and the National Research Bureau administered the survey in New Zealand in 2006 (Satherley & Lawes, 2007).

Stafford (2009) has presented technical information on the ALLS sampling procedure. He noted that in New Zealand a random, geographically-based "representative sample of 7,131 individuals aged from 16 to 65 years living in private households" (p.3) were drawn by selecting one adult from each selected household.

Satherley and Lawes (2007) reported that the ALLS survey was similar in content and purpose to the IALS. The prose literacy and document literacy measures used in the two studies are directly comparable, however, the quantitative literacy measure in the ALLS survey was different from that used in the IALS (Satherley & Lawes, 2007). In addition, a measure of problem solving ability was introduced into the 2006 ALLS survey.

Questionnaire

The ALLS questionnaire collected information on a range of demographic, educational, social, and economic factors, and assessments were made of literacy proficiency (Satherley & Lawes, 2007). *Prose literacy* was defined in terms of the knowledge and skills needed to

understand and use information from texts including editorials, news stories, poems and fiction. *Document literacy* referred to the knowledge and skills required to locate and use information contained in various formats, including employment applications, payroll documents, transportation timetables, maps, tables, and graphics. *Quantitative literacy* assessed the knowledge and skills required for the application of arithmetic operations to numbers embedded in printed materials, such as balancing a cheque book, calculating a tip, completing an order form, or working out the amount of interest on a loan based on information in an advertisement. *Problem solving skills* referred to the ability to reason and engage in analytical thinking in circumstances where no routine procedure existed.

Scores on each of the four domains ranged from 0 to 500, and were grouped into five levels. These levels were defined by score ranges and reflected the empirically determined progression of skills and strategies (Stafford, 2009). Because relatively small numbers of participants attained scores in the Level 5 band, Levels 4 and 5 were collapsed in the results for all countries.

Level 1 represented the lowest performance range, and Level 5 the highest. People performing at Level 1 have very poor skills and are likely to experience considerable difficulties in using many of the printed materials that they are likely to encounter in their daily lives. At Level 2, people would be able to use some printed materials, but these would be of a relatively simple nature. Performance at Level 3 is indicative of the

ability to manage a varied range of materials found in daily life and at work. Not all printed material would be successfully dealt with at this level. People performing at Level 4 have good literacy skills, and demonstrate the capacity to use higher order skills associated with matching and integration of information. At Level 5, people have very good literacy skills, and can make high-level inferences, use complex displays of information, process conditional information, and perform multiple operations sequentially. Level 3 is considered to be the minimum level of proficiency required for meeting the complex demands of everyday life in knowledge-based societies (e.g., Lane, 2011).

Sample

The 16-24 year old sample in the ALLS survey was 1,082. Where we report data published by the New Zealand Ministry of Education, the results represent population estimates based on this sample. Where we performed our own analyses comparing those who received remedial assistance for reading with those who did not, we included only those survey participants who had received all of their formal education in New Zealand and in the English language. The resulting sample size was 854.

Within this sample were 201 (23.5%) who responded *yes* to the question: "Have you ever received remedial help or special classes with reading at school—regardless of the level of schooling?" (Q A10). They formed the reading difficulty (RD) group, and those who responded *no*, formed the non-reading difficulty group (NRD: n=653; 76.5%). Of the RD sample 57% (n=114)

were males and 43% (n=87) were females.

Results

Literacy Level Scores

To answer the first research question regarding whether or not the 16-24 year olds in the 2006 ALLS survey improved their literacy performances compared to their counterparts in the 1996 IALS study, we draw on data published by the New Zealand Ministry of Education.

Satherley and Lawes (2008a) reported that in prose and document literacy, the 16-24 year olds in 2006 "on average did not improve their performance compared to 16-24 year olds in 1996" (p.4). Satherley and Lawes (2008a) present data for prose literacy showing that 53% of 16-24 year olds performed at Levels 1 and 2, which was a marked increase in performance at the two lowest levels when compared to the 44% of 16-24 year olds in the IALS. A considerable decrease in the percentage performing at Levels 4 and 5 in the ALLS survey was also observed: from 20% in the IALS to 10% in the ALLS.

Turning to document literacy, Satherley and Lawes (2008a) noted that the skills of the youngest group in 2006 "did not improve compared to their counterparts in 1996" (p.9). Performance in Levels 4 and 5 decreased from 20% in 1996 to 13% in 2006. Increases were observed for performances in Levels 1 and 2, from 45% in 1996 to 48% in 2006.

Regarding numeracy and problem solving skills, data are presented only for the 2006 ALLS survey because the Numeracy

measure was not equivalent to the 1996 IALS measure, and the measure of Problem Solving was introduced for the first time in the 2006 survey. Satherley and Lawes (2008a) report that 58% of 16-24 year old adults performed at Levels one and two for Numeracy, and 74% at these levels for Problem Solving.

In answer to the first question, the scores for Prose and Document literacy of young adults in the 2006 ALLS survey declined compared to those in the 1996 survey. In 2006, 53% of 16-24 year-olds scored at levels 1 and 2 for Prose literacy, compared to 44% in 1996. For Document literacy, 48% of this young group of adults had scores in levels 1 and 2 in 2006, compared to 45% in 1996. Across all four literacy domains assessed in the 2006 ALLS survey 48% to 74% of young adults performed at levels one or two, which is below the minimum level for adequate functioning in a knowledge society.

Group Comparisons: Literacy Measures

To address question two regarding the literacy performances of the RD group compared to the NRD group, we performed our own analyses using the STATTOOL SPSS programmes designed by Statistics Canada for analysing the ALLS data. We followed the guidelines presented by Statistics Canada (2002, pp.116-117) for treating literacy level scores that included five plausible values, replicate weights, and population weights. The level score percentages refer to population estimates.

For Prose literacy, 69% of the RD adults performed at levels one and two, compared to 49% of NRD adults. Only 31% of RD adults performed at levels three or

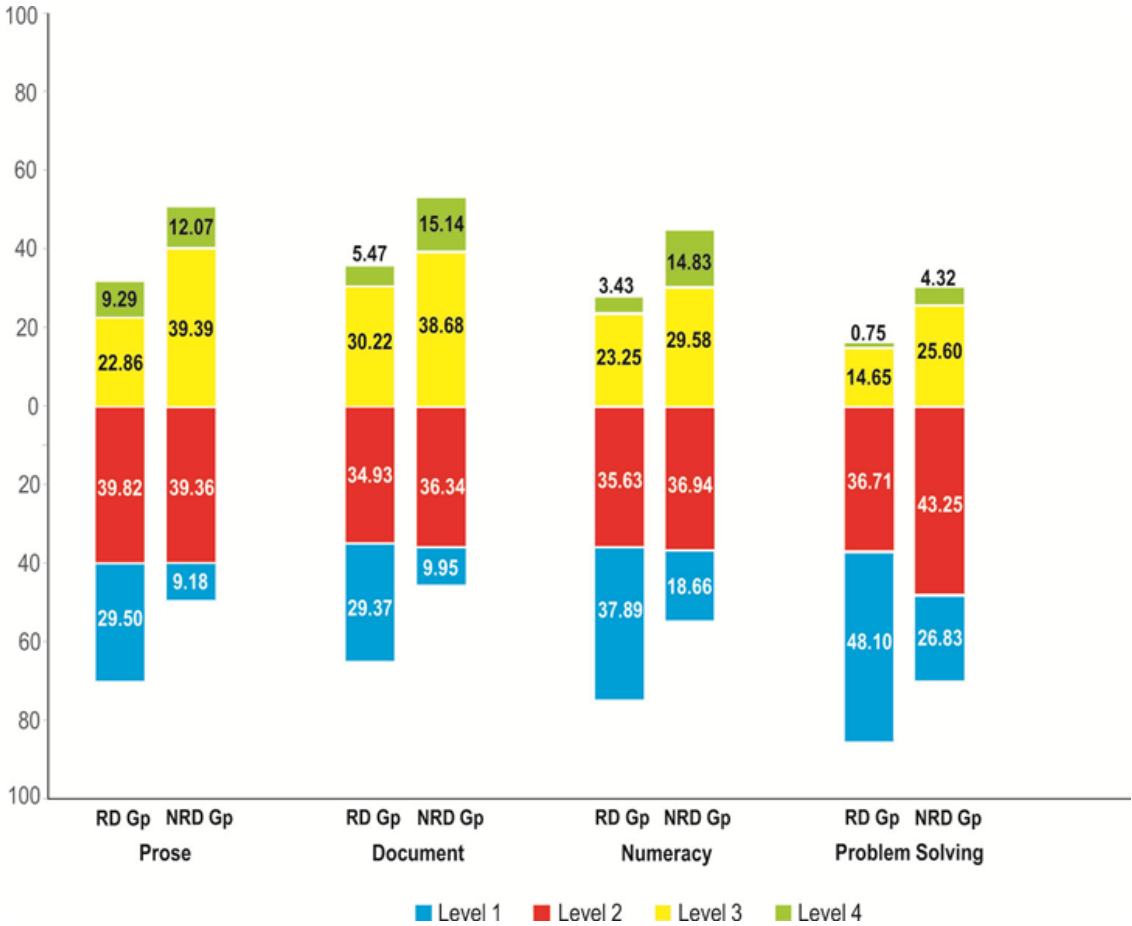


Figure 1. Literacy level score percentages as a function of RD and NRD grouping.

four/five. In contrast, 52% of NRD adults performed at levels three and four/five.

For Document literacy, 64% of RD adults, and 46% of NRD adults performed at levels one and two. For levels three and four/five, 36% of RD and 54% of NRD adults performed at these levels.

Regarding Numeracy, 74% of RD adults performed at levels one and two, compared to 56% of NRD adults. A small percentage of RD adults performed at or above level three (27%), whereas 44% of

NRD adults performed above level two. High percentages of young adults in both groups performed at levels one and two for the newly introduced Problem Solving measure: RD group = 85%; NRD group = 70%. The comparative percentages for level scores for both groups on each variable are summarised in Figure 1.

Overall, both RD and NRD adults performed poorly in terms of percentages achieving at or above the level three minimum for competent functioning in a knowledge society. Clearly, however, RD

adults were considerably poor performers on all four measures included in the ALLS survey.

Group Comparisons: Life Skills

We compared RD and NRD young adults on a number of "life skills" variables, including educational level and qualifications, employment, reading-related skills and habits, health and income.

Around 20% fewer RD than NRD young adults completed year 12 or 13 at secondary school: 42% for RD compared to 62% for NRD young adults. Only 5% of RD young adults had completed one or more university degrees, whereas 14% of NRD young adults had done so. In response to the question (Q F1), "During the last 12 months, did you take any education or training", 56% of RD adults replied "yes", compared to 74% of NRD adults. Having reading difficulties is associated with lower levels of educational attainment, training and qualifications.

Despite having lower educational qualifications, RD young adults had similar levels of employment compared to NRD adults: 81% of RD adults were employed during the 12 months prior to the survey, compared to 84% of NRD adults. There were differences between the two groups, however, in regard to the status of occupations. Over twice as many NRD adults (29%) were in high status (professional, management) occupations than RD adults (12%). Conversely, over a third more RD adults (38%) were in low status occupations than NRD adults (24%).

Most adults in both groups received employment income from wages or salaries: RD = 77%; NRD = 80%. Related to the employment question is whether ALLS participants received any income from social assistance. Similar percentages (23%) of RD and NRD young adults received some form of social assistance income.

We analysed survey data for job-related reading skills. Just over three quarters of RD young adults (77%) indicated that they believed they had the reading skills in English to do their main job well (Q E4A), compared to 84% of the NRD young adults. A lower percentage of RD young adults believed they had the writing skills to do their main job well (Q E4B): 76% compared to 83% for NRD adults. These questions do not take into account the occupational status of adults in each of these two groups. Although these differences are important, the overall responses are positive.

In the home setting, it is interesting to observe that RD and NRD young adults reported having similar numbers of books in their household (Q G6). For households with fewer than 25 books 29% of RD adults and 27% of NRD adults responded in this category. Similarly, there was only a 4 percentage point difference for households with over 100 books: RD = 28%; NRD = 32%.

Reading preferences, however, showed clear differences between the RD and NRD young adults. In response to the statement "I read only when I have to" (Q G7C), 44% of RD young adults agreed compared to 28% of NRD young adults. A marked difference was also observed in

response to the statement, "Reading is one of my favourite activities" (G7D): 33% of RD adults agreed compared to 50% of NRD adults.

Two questions related to general well-being. In response to a question about health (G11), 89% of RD young adults reported that their health was good to excellent, compared to 92% of NRD young adults. Regarding general well-being ("Q G10: "On the whole, how do you feel about your life over the past 12 months?"), 71% of RD young adults reported satisfaction with their lives compared to 80% of NRD young adults. Literacy problems in school do not show a significant relationship with health and well-being post-schooling for young adults.

Discussion

The most startling finding from the 2006 ALLS survey is the generally poor levels of literacy among 16-24 year old adults, with this cohort of adults performing more poorly on the equivalent measures of prose and document literacy than their same-age counterparts in the 1996 survey. This result was in the opposite direction to that which was expected (New Zealand Ministry of Education, 2001). The literacy skills of these young adults, who would have started school at age 5 between 1987 and 1995, would have been shaped in schools when the whole language-based instructional approach to the teaching of reading in junior primary classes was firmly established throughout New Zealand. This approach to literacy instruction was proudly hailed as being "best in the world" (Smith & Elley, 1997, p.110).

In addition, the RR programme, introduced in 1983, was used in a large number of schools throughout New Zealand as a means to accelerate the reading progress of children at risk for developing reading problems, and thereby substantially reduce the number of children who develop ongoing reading and writing difficulties (Clay, 1987). Each year since its introduction, RR has served approximately 25% of the 6-year old (Year 2) New Zealand school population. Although the ALLS question regarding remedial reading did not seek information on the nature or duration of this support, it is reasonable to expect that many of those who indicated they had received help for reading, would have received tuition in the RR programme. The literacy performances of young adults in the New Zealand population at the time of the ALLS survey who had received help with their reading from one of a small number of generally whole language intervention programmes, including RR, were particularly disappointing.

The whole language approach to literacy instruction that was dominant in New Zealand schools in the late 1980s and throughout the 1990s (and beyond), and the establishment of RR in schools throughout New Zealand during the 1980s, correspond to the decline in literacy skills of the youngest group of New Zealand adults in the ALLS survey. The Ministry of Education described adult literacy as largely a function of the "output of an education system" (1997, p.2). Culligan, Arnold, Noble and Sligo (2004) in their analysis of 1996 IALS data found that the strongest predictor of was "overwhelmingly" educational attainment

(p.5). Literacy skills learned in school have the greatest impact on adult literacy, especially for those who most recently left school (Pressley, 2006; Spear-Swerling & Sternberg, 1996). Poor readers in adulthood usually have been poor readers in school (Spear-Swerling & Sternberg, 1996).

Despite the significant investment in school-based literacy instruction and remediation, the results of the ALLS survey should come as no surprise. New Zealand researchers (e.g., Tunmer, Chapman & Prochnow, 2003, 2004, 2006; Tunmer, Nicholson, Greaney, Prochnow, Chapman & Arrow, 2008; Tunmer & Prochnow, 2009) have argued that the dominant whole language approach to literacy instruction in New Zealand schools has been a major contributing factor to the relatively large literacy achievement gap that New Zealand has consistently shown in international studies of children's reading achievement over the past 20 years. They have also shown (Chapman et al., 2001; Chapman & Tunmer, 2011; Tunmer & Chapman, 2004) that the Reading Recovery programme has failed to fulfil its most important goals of accelerating the performance of children at-risk for developing ongoing literacy difficulties, and of "clearing out of the remedial education system" those children who struggle with learning to read (Clay, 1989). Given the relationship between literacy performance in school and literacy performance in adulthood, it follows that these negative effects should eventually be observed in international studies of adults' literacy performance, as they have.

The main flaw in the whole language and

RR instructional approaches to the teaching of literacy in New Zealand schools is the "multiple cues" theory of reading acquisition. This approach, promoted by Clay (1979, 1987, 2005) and recommended in Ministry of Education publications (e.g., *Reading in junior classes*, 1985; *The learner as reader*, 1996; *Effective literacy practice*, 2003), stresses the importance of using information from many sources for identifying unfamiliar words in text, without recognizing that skills and strategies involving phonological information are of primary importance in beginning literacy development. Instead, multiple cues theorists incorrectly assume that skilled reading involves the use of minimal word-level information for confirming predictions about unfamiliar words in text, and that a range of text-based cues (i.e., picture cues, semantic and syntactic sources of information, preceding passage context, prior knowledge and guessing activated by the developing meaning of the text) should provide the main means for figuring out unknown words (Clay, 1991; Smith & Elley, 1994). But, as Pressley (2006) pointed out, "the scientific evidence is simply overwhelming that letter-sound cues are more important in recognizing words... than either semantic or syntactic cues" (p.21), and that "teaching children to decode by giving primacy to semantic-contextual and syntactic-contextual cues over graphemic-phonemic cues is equivalent to teaching them to read the way weak readers read!" (p. 164). In an earlier edition of his text, Pressley (1998) described such an approach as "disastrous" (p.32).

Overall, the declines in the literacy

performances of young adults *are* disastrous. Considered together with the poor literacy levels of those young adults who had received remedial support for reading difficulties during their schooling, the significant changes in literacy instruction introduced into New Zealand schools during the time the young adults in the ALLS survey were in school appear to have been largely fruitless.

Regarding qualifications, employment and income levels, the differences between the RD and NRD were mixed. Young adults with RD generally completed their schooling at lower levels than NRD adults, attained lower post-schooling qualifications, and tended to have lower status occupations. Kutner et al. (2007) found that adults with lower levels of literacy tend to earn lower incomes and were likely to be out of the workforce more often than those with higher literacy levels. Earle (2010a) also found that higher literacy levels were generally associated with higher incomes, skills and qualifications. He noted that higher literacy and qualifications tend to be related and that increasing literacy levels without improving qualifications has limited value in the New Zealand labour market (Earle, 2010b).

Perhaps not surprisingly, the RD adults reported less preference for reading as an activity, with less than half agreeing that they only read when they have to and only a third agreeing that reading is one of their favourite activities. The effects of more limited reading compared to the NRD young adults may become more apparent over time as these young adults become older.

Differences between RD and NRD adults in terms of the reported number of books in their homes were negligible. This finding suggests that access to literacy resources is not necessarily a key factor associated with the RD adults receiving remedial reading during their schooling. Other factors, such as adequate instruction, declining motivation for reading and consequentially more limited reading experience possibly help to explain the need for remedial reading at school.

The relationship between having had remedial reading in school and overall well-being was negligible. Schogan and Lawes (2009), in their analysis of the full age range of New Zealand adults (16-65 years) in the 2006 ALLS reported that higher education and literacy levels "and/or" income were generally associated with better physical and emotional well-being. They also reported that having had remedial reading in school was associated with lower levels of physical well-being. These results were not observed for the young adults in the ALLS survey, suggesting that the relationship between literacy, health, and well-being may not develop until later in life, perhaps as life experiences and health issues become more challenging. DeWalt and Pignone (2005) reported for an American sample that adults with low literacy levels had less health-related knowledge, tended to show poor control over chronic illness, were less likely to receive preventive health services, and were more likely to be hospitalized.

One limitation of the present study is that no information was available in the ALLS survey about the nature or duration of

remedial reading received at school. While Reading Recovery was by far the most widely available intervention programme when these adults were at school, other programmes were also available on a much lesser scale. Almost all school-based programmes from the mid-1980s through to this first decade of this century were based on whole language principles. However, future surveys of adult literacy would benefit from more carefully crafted questions in relation to remedial reading to gauge the long-term relationships between reading interventions and subsequent literacy levels in adulthood. Indeed, given the widespread adoption of Reading Recovery and lack of controlled empirical evidence in support of the programme's efficacy (Chapman & Tunmer, 2011), a question in the next adult literacy survey asking respondents if they received RR would be beneficial from a policy and practice perspective.

Meanwhile, we hold that a change in the approach to literacy instruction in New Zealand schools based on overwhelming scientific evidence is overdue. Results from the 2006 ALLS survey showed a significant decline in literacy performance among young adults. These adults clearly did not benefit from the significant investment in school-based literacy programmes during the mid-1980s to mid-1990s, when they started school. Further, recent results from the 2011 Progress in International Reading Literacy Study (PIRLS: Chamberlain & Cagyill, 2012) provide additional evidence that New Zealand's "innovative" literacy policies have failed to lift the literacy performance of New Zealand children and adults. Without a major change in literacy

instruction in New Zealand schools, poor levels of children's and adult literacy skills in New Zealand are likely to persist.

References

- Chamberlain, M., & Cagyill, R. (2012). *Key findings from New Zealand's participation in the Progress in International Reading Literacy Study (PIRLS) and trends in International Mathematics and Science Study (TIMSS) 2010/2011*. Wellington, New Zealand: Ministry of Education.
- Chapman, J. W., & Tunmer, W. E. (2011). Reading Recovery: Does it work? *Perspectives on Language and Literacy*, (Fall), 21-24.
- Chapman, J. W., Tunmer, W. E., & Prochnow, J. E. (2001). Does success in the Reading Recovery program depend on developing proficiency in phonological processing skills? A longitudinal study in a whole language instructional context. *Scientific Studies of Reading*, 5, 141-176.
- Clay, M. M. (1979). *The early detection of reading difficulties*. Auckland: Heinemann.
- Clay, M. M. (1987). Learning to be learning disabled. *New Zealand Journal of Educational Studies*, 22, 155-173.
- Clay, M. M. (1989). Concepts about print in English and other languages. *The Reading Teacher*, 42, 268-276.
- Clay, M. M. (1991). *Becoming literate: The construction of inner control*. Auckland: Heinemann.
- Clay, M. M. (2005). *Literacy lessons designed for individuals. Part Two: Teaching procedures*. Auckland: Heinemann.
- Culligan, N., Arnold, G., Noble, A., & Sligo, F. (2005). *Analysis of New Zealand data from the International Adult Literacy Survey: Demographic predictors of low literacy proficiency. Final report*. Wellington: Massey University.
- DeWalt, D. A., & Pignone, M. P. (2005).

- Reading is fundamental: The relationship between literacy and health. *Archives of International Medicine*, 165, 143-144.
- Earle, D. (2010a). *Skills, qualifications, experience and distribution of wages*. Wellington, New Zealand: Ministry of Education.
- Earle, D. (2010b). *Labour market outcomes of skills and qualifications*. Wellington, New Zealand: Ministry of Education.
- Glynn, T., & Wheldall, K. (1992). *Discussion paper on Pause, Prompt, Praise reading tutoring procedures: Continuing research and development*. (Unpublished paper). Dunedin, New Zealand: University of Otago.
- Johnson, A. H. (2000). *Changing skills for a changing world: Recommendations for adult literacy policy in Aotearoa/New Zealand*. Unpublished report prepared under the sponsorship of the Ian Axford (New Zealand) Fellowships on Public Policy. Wellington.
- Kutner, M., Greenberg, E., Ying, J., Hsu, Y., & Dunleavy, E. (2007). *Literacy in everyday life: Results from the 2003 national assessment of adult literacy*. Washington DC: National Center for Education Statistics, U.S. Department of Education.
- Lane, C. (2011). *Literacy skills of young adult New Zealanders: An analysis from the Adult Literacy and Life Skills Survey*. Wellington, New Zealand: Ministry of Education.
- McNaughton, S., Glynn, T., & Robinson, V. (1987). *Pause, Prompt and Praise: Effective remedial reading tutoring*. Birmingham: Positive Products.
- Ministry of Education. (1996). *The learner as reader*. Wellington: Learning Media.
- Ministry of Education. (2001). *More than words: The New Zealand adult literacy strategy*. Wellington: Author.
- Ministry of Education. (2006). *Effective literacy practice*. Wellington, New Zealand: Learning Media.
- National Centre for Workplace Literacy & Language. (2000). *Blueprint for literacy*. Auckland: Author.
- New Zealand Department of Education. (1985). *Reading in junior classes: With guidelines to the revised Ready to Read series*. Wellington: Author.
- Pressley, M. (1998). *Reading instruction that works: The case for balanced teaching*. New York: Guilford Press.
- Pressley, M. (2006). *Reading instruction that works: The case for balanced teaching* (2nd ed.). New York: Guilford Press.
- Satherley, P., & Lawes, E. (2007). *The Adult Literacy and Life Skills (ALL) survey: An introduction*. Wellington: Ministry of Education.
- Satherley, P., & Lawes, E. (2008). *The Adult Literacy and Life Skills (ALL) survey: Age and literacy*. Wellington: Ministry of Education.
- Schagen, I., & Lawes, E. (2009). *Healthy and wise: Does education improve wellbeing? Profiles and Trends: New Zealand's Tertiary Education Sector*. Wellington, New Zealand: Ministry of Education.
- Smith, J. W. A., & Elley, W. B. (1994). *Learning to read in New Zealand*. Auckland: Longman Paul.
- Smith, J. W. A., & Elley, W. B. (1997). *How children learn to read: Insights from the New Zealand experience*. Auckland: Longman.
- Spear-Swerling, L., & Sternberg, R. J. (1996). *Off track: When poor readers become "learning disabled"*. Denver, CO: Westview Press.
- Strafford, E. (2009). *Adult literacy and life skills survey: An analysis guide*. Unpublished paper. Wellington: Ministry of Education.
- Statistics Canada. (2002). *The Adult Literacy and Life Skills Survey, 2003: Public-use microdata file user's manual*, Ottawa: Statistics Canada.
- Tunmer, W. E., & Chapman, J. W., & Prochnow,

- J. E. (2004). Why the reading gap in New Zealand won't go away: Evidence from the PIRLS 2001 international study of reading achievement. *New Zealand Journal of Educational Studies*, 39, 127-145.
- Tunmer, W. E., & Chapman, J. W. (2004). Reading Recovery: Distinguishing myth from reality. In R. M. Joshi (Ed.), *Dyslexia: Myths, misconceptions, and some practical applications* (pp. 99-114). Baltimore, MD: International Dyslexia Association.
- Tunmer, W. E., & Chapman, J. W., & Prochnow, J. E. (2003). Preventing negative Matthew effects in at-risk readers: A retrospective study. In B. Foorman (Ed.), *Preventing and remediation reading difficulties: Bringing science to scale* (pp. 121-163). Timonium, MD: York Press.
- Tunmer, W. E., & Chapman, J. W., & Prochnow, J. E. (2006). Literate cultural capital at school entry predicts later reading achievement: A seven year longitudinal study. *New Zealand Journal of Educational Studies*, 39, 127-145.
- Tunmer, W. E., & Prochnow, J. E. (2009). Cultural relativism and literacy education: Explicit teaching based on specific learning needs is not deficit theory. In R. Openshaw & E. Rata (Eds.), *Thinking inside the square: Political and cultural conformity in New Zealand* (pp.154-190). Auckland: Pearson Education.
- Tunmer, W. E., Nicholson, T., Greaney, K. T., Prochnow, J. E., Chapman, J. W., & Arrow, A. W. (2008). PIRLS before swine: A critique of New Zealand's National Literacy Strategy. *New Zealand Journal of Educational Studies*, 43, 105-119.

About the Authors

James W. Chapman, PhD, is Professor of Educational Psychology at Massey University. His current research interests include reading disabilities, intervention strategies, adult literacy, and motivational factors in reading.

William E. Tunmer, PhD, is Distinguished Professor of Educational Psychology at Massey University. His current research interests include reading acquisition, reading disabilities, and intervention strategies.

Acknowledgements

The authors are grateful to the New Zealand Ministry of Education for making available the New Zealand data set from the ALLS survey, and to Elliot Lawes and Paul Satherley (Ministry of Education) for their assistance with technical aspects of the data analyses. Unless clearly indicated otherwise in the text, all interpretations of the ALLS data are entirely ours, and we take responsibility for additional data analyses not included in Ministry reports.