



Wānangatia te Putanga Taurā
National Monitoring Study
of Student Achievement

English: Reading

2014 – Overview



Wānangatia te Putanga Tauira
National Monitoring Study
of Student Achievement

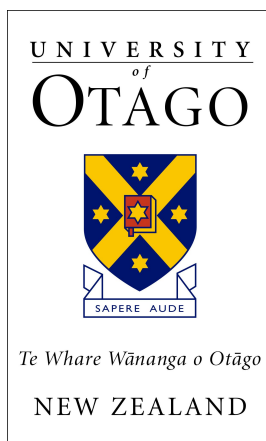
English: Reading 2014

Overview

Educational Assessment Research Unit
and
New Zealand Council for Educational Research



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Key reports for English: Reading 2014

(all available online at <http://nmssa.otago.ac.nz/reports/index.htm>)

- 5.1 Overview
- 5.2 Māori Student Achievement
- 5.3 Pasifika Student Achievement
- 5.4 Achievement of Students with Special Education Needs
- 5.5 Contextual Report
- 7 Technical Information



National Monitoring Project of Student Achievement Report 5.1: English: Reading 2014 – Overview

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- the Ministry of Education Research Team and Steering Committee.

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Executive Summary

Introduction

In 2014 the National Monitoring Study of Student Achievement (NMSSA) assessed student achievement at Year 4 and Year 8 in two areas of *The New Zealand Curriculum* (NZC) – English: reading and social studies. This report presents an overview of the results from the English: reading study. It will be supported by a number of additional reports that examine results for priority learner groups, explore contextual data more deeply and provide technical information related to different components of the study.

Study features

The English learning area within the NZC outlines achievement objectives that describe progression in reading as part of the Listening, Reading and Viewing strand. The objectives describe the knowledge and skills students should be able to demonstrate as they progress from one curriculum level to the next and become more effective oral, written and visual communicators.

This report is one of several reports that have been, or will be released in the first cycle of NMSSA related to the English learning area. English: writing was assessed in 2012. English: viewing and English: listening will be assessed in 2015. NMSSA is also collecting information about the use of literacy across the curriculum.

NMSSA assessed achievement in English: reading using a combination of group- and individually-administered tasks, collectively called the Knowledge and Application of Reading in English (KARE) assessment. A nationally representative sample of about 2,200 students at each year level completed the group-administered aspect of the assessment and about 800 of these students at each year level completed the individual aspect. Performance on the KARE assessment was reported on a single scale covering both year levels. The scale was aligned to the levels of the NZC through a curriculum alignment process that defined minimum scale scores (cut-scores) associated with achieving, on balance, the objectives' outlines at curriculum levels 2, 3 and 4.

Other data related to students', teachers' and principals' views of teaching and learning in English: reading were also collected via questionnaires and student interviews. For this report, we draw on two sections of the student questionnaire: attitudes to reading, and opportunities to learn in reading.

Key findings

Overall achievement

Fifty-eight percent of Year 4 students scored above the minimum score on the KARE scale associated with achieving curriculum level 2 objectives. Fifty-nine percent of Year 8 students scored above the minimum score associated with achieving curriculum level 4 objectives. The curriculum expectation at Year 4 is that students will have, on balance, achieved level 2 objectives by the end of the school year. In Year 8, they will have, on balance, achieved level 4 objectives by the end of the school year. NMSSA assessment was carried out in Term 3. Therefore, we could expect a greater proportion of students at each year level to have met or exceeded the minimum score on the KARE scale for the appropriate curriculum level by the end of the year.

Variation in achievement by student-level and school-level variables

Year 8 students scored, on average, about 29 scale score units higher than Year 4 students. The difference is equivalent to an effect size of about 1.4 and indicates that New Zealand students make, on average, about 7 scale score units of ‘progress’ per year between Year 4 and Year 8. The difference in the average scores for Year 4 and Year 8 students represents a similar effect size to that recorded on group-administered assessments in several other NMSSA studies (e.g., science and English: writing).

Girls scored higher than boys on the KARE assessment by an average of about 7 scale score units at both year levels. This gender pattern was also evident within ethnic groups.

School decile was strongly associated with student achievement at both Year 4 and Year 8. Students from low decile schools (deciles 1, 2 and 3) scored lower, on average, than those who attended high decile schools (deciles 8, 9 and 10) by about 15 scale score units. At both year levels the difference in average scores between the high and low decile groups was equivalent to the amount of ‘progress’ expected over about 2 years of schooling. Māori and Pasifika students, who were more likely than other students to attend mid and low decile schools, scored lower on average than NZ European and Asian students. A regression analysis indicated that score differences related to ethnicity could be detected after decile was taken into account.

When scale score differences between Year 4 and Year 8 are taken as a proxy for progress, there is relative consistency in Year 4 to Year 8 ‘progress’ across gender, ethnic and decile groupings. There is some indication that Asian students have made less ‘progress’ on average between Year 4 and Year 8 than non-Asian students.

The NMSSA includes students with special education needs in the assessment programme. Participating schools identified students’ special education needs using three categories: High Special Education Needs, Moderate Special Education Needs and On Referral. At both year levels, the average score for the combined group of students with special education needs was about 20 scale score units lower than for students with no special education needs. The difference between the average scores at Year 4 and Year 8 for students with special education needs was the same as that for students with no special education needs.

Attitudes and opportunities to learn

An ‘Attitude to Reading’ scale was developed based on students’ responses to a series of survey questions about their reading. Overall, students were generally positive about reading, with students in Year 4 scoring more highly on average on the scale than students in Year 8. A greater proportion of boys than girls expressed negative views about reading at both year levels.

The study provides some evidence that attitudes to reading are associated with achievement. Students with a positive view of their own ability as readers, and of reading in general, tended to score more highly on the KARE assessment than those who expressed a negative view of reading.

Students in Year 8 were asked how much time they spent reading in their own time (when not at school). A trend towards higher scores on the KARE assessment for students who did more reading in their own time was identified. Boys were more likely than girls, Māori students more likely than non-Māori students and students with special education needs more likely than students with no special education needs, to indicate that they did little or no reading in their own time.

1 Introduction to the National Monitoring Study of Student Achievement

This chapter provides a broad overview of the purpose and features of NMSSA and introduces the focus of the study for 2014.

1. Purpose of national monitoring

NMSSA is designed to assess student achievement at Year 4 and Year 8 in New Zealand English-medium state schools. The main purposes of NMSSA are to:

- provide a snapshot of student achievement against the NZC
- identify factors that are associated with achievement
- assess strengths and weaknesses across the curriculum
- measure change in student achievement over time
- provide high-quality, robust information for policy makers, curriculum planners and educators.

National monitoring has a particular focus on Māori students, Pasifika students and students with special education needs.

NMSSA began in 2012 and is carried out over a 5-year cycle. During the first cycle, we are setting the baseline for measuring change in student achievement over time in subsequent cycles.

The study continues the monitoring undertaken by the National Education Monitoring Project (NEMP) between 1995 and 2010. It also complements information generated by international evaluation studies, such as the Trends in International Mathematics and Science Study (TIMSS), the Progress in International Reading Literacy Study (PIRLS) and the Programme for International Student Assessment (PISA).

In addition to designing and carrying out an assessment programme, NMSSA collects contextual information from students, teachers and principals to help understand the factors associated with students' achievement. This includes: students' attitudes to, and their opportunities to learn in, the specific learning area being investigated; teachers' confidence in teaching the specific learning area and their views on the learning opportunities provided to students in classroom programmes; teachers' and principals' views of the professional and curriculum support provided by the school and the provision in the school for the learning area.

The project is supported by advisory panels of curriculum experts, reference groups for the priority learner groups (Māori, Pasifika and special education needs) and a technical reference group.

2. 2014 study

In 2014, the dual focus for the NMSSA study was English: reading and social studies¹. In English: reading, nationally representative samples² of about 2,200 students from about 100 schools at each of Year 4 and Year 8 took part in a group-administered assessment of reading achievement, and responded to a range of questionnaire statements regarding reading. About 800 of these students at each year level (8 in each school) were also involved in one-to-one interview tasks involving reading.

The assessments were conducted by experienced, specially-trained classroom teachers during Term 3 (July to September 2014).

3. Structure of the English: reading overview report

This report provides an overview of findings from the 2014 NMSSA study of English: reading with a focus on students' achievement, attitudes towards reading and reading experiences at school. Additional reports will provide more detailed reporting on the contextual data (including the views of teachers and principals), as well as on results for priority learner groups.

This report is one of several reports that have been, or will be released in the first cycle of NMSSA related to the English learning area in the NZC. English: writing was assessed in 2012. English: viewing and English: listening will be assessed in 2015. NMSSA is also collecting information about the use of literacy across the curriculum and plans to report on this in 2017.

The report is set out in four chapters.

Chapter 1 provides a broad overview of the NMSSA programme.

Chapter 2 describes the development of the English: reading assessment and contextual data collection instruments. It also sets out the analytical and reporting approaches that were used to present the findings.

Chapter 3 presents the findings for Year 4 and Year 8 student achievement in English: reading and reports these against the levels of the English curriculum. It also compares achievement between Year 4 and Year 8 students, and reports differences between subgroups of gender, ethnicity, school decile and type of school. The achievement of students with special education needs is also discussed.

Chapter 4 examines contextual factors that may be associated with student achievement in English: reading, drawing on information collected from students about their attitudes to reading and their learning experiences in English: reading at school.

The report also contains an appendix providing detailed tables of results. Other background and technical information is contained in the separate report *Technical Information 2014 – Social Studies, English: Reading*.³

¹ The overview of the findings for social studies can be found in the Educational Assessment Research Unit and New Zealand Council for Educational Research. (2015). *NMSSA Report 6.1 Social Studies 2014 – Overview*.

² Information about the sampling process and the achieved samples can be found in Appendix 1 of *NMSSA Report 7 Technical Information 2014 – Social Studies, English Reading*.

³ Educational Assessment Research Unit and New Zealand Council for Educational Research. (2015). *NMSSA Report 7 Technical Information 2014 – Social Studies, English Reading*.

2 The NMSSA English: Reading Assessment Programme

This chapter provides an overview of the NMSSA assessment programme for English: reading. It includes four parts.

- Part 1 discusses the English: reading learning area of the NZC⁴.
- Part 2 describes how New Zealand students have achieved in other monitoring studies of reading.
- Part 3 describes the components of the 2014 NMSSA English: reading assessment programme.
- Part 4 provides information about how the findings are presented.

1. Assessing English: reading achievement in New Zealand

The aim of the 2014 NMSSA English: reading study was to assess, and identify contextual factors associated with, the achievement and progress of Year 4 and Year 8 students in reading as it is described in the English learning area of the NZC.

The English learning area is organised around two interwoven strands focused on the communication modes that students use when:

- making meaning of ideas or information they receive
- creating meaning for themselves or others.

Reading, along with listening and viewing, is included in the first strand. The achievement objectives associated with the strand express progressions through which students generally move as they become more effective readers, listeners and viewers. According to the NZC:

Using a set of underpinning processes and strategies, students develop knowledge, skills, and understandings related to:

- text purposes and audiences
- ideas within language contexts
- language features that enhance texts
- the structure and organisation of texts.⁵

2. New Zealand students' reading achievement in other monitoring studies

The 2014 NMSSA English: reading study complements a number of system-wide assessments of reading achievement in New Zealand. These include studies carried out by the precursor to NMSSA – NEMP – and two international studies – PIRLS and PISA.

The National Education Monitoring Project

The NEMP project was carried out by the University of Otago for the Ministry of Education and ran from 1995 to 2010. A sample-based study that focused on students in Year 4 and Year 8, NEMP conducted monitoring in reading in 1996, 2000, 2004 and 2008. An additional, out-of-cycle round of data gathering was carried out in reading (along with mathematics and writing) in 2010.

⁴ Ministry of Education. (2007). *The New Zealand Curriculum*. Wellington: Learning Media.

⁵ *The New Zealand Curriculum*, page 18.

The 2010 NEMP report⁶ noted that in reading:

- Year 8 students achieved, on average, about 20 percentage points higher on tasks common to both year levels
- on average, and at both year levels, girls scored higher than boys
- on average, and at both year levels, Pākehā students scored higher than Māori and Pasifika students
- students had positive attitudes towards reading.

The 2008 report on reading and speaking⁷ commented on trends in reading achievement over time. At both year levels there had been a general improvement on a series of link tasks used between 1998 and 2008. Achievement had increased most markedly for Year 4 students between 1998 and 2002, and any change since then had been only slight.

Progress in International Reading Literacy Study

PIRLS is run by the International Association for the Evaluation of Educational Achievement (IEA) and administered on a 5-year cycle. The first cycle occurred in 2001 and the country's most recent completed cycle was in 2010/11. In New Zealand, PIRLS focused on the achievement of Year 5 students. Since 2001 there has not been a statistically significant change in the average achievement of New Zealand students on the PIRLS assessment.

Compared with many other countries, New Zealand's score profile in PIRLS is characterised by high variability, with large groups of somewhat stronger readers and somewhat weaker readers. Since 2001, the average scores for both boys and girls have remained relatively stable. New Zealand, however, has a larger average achievement gap in favour of girls than most other countries. In each cycle since 2001 there have been proportionally more Pākehā/European and Asian students represented in high achievement bands than Māori and Pasifika students. Although there has been some indication of gradual improvement in the average score for Māori students since 2001, the changes are not statistically significant.

The PIRLS project gathers a large amount of contextual data; for instance, data on school climate and home contexts that can be linked with achievement on the PIRLS assessment. Some notable findings from the 2010/11 study included that:

- on average, there were large achievement differences between students in New Zealand from different socio-economic backgrounds
- New Zealand students were more likely to report that they enjoyed reading than students in many other countries.

Programme for International Student Assessment

PISA is an initiative of the Organisation for Economic Co-operation and Development (OECD). It looks at the mathematical, reading and scientific literacy of 15-year-old students and has been undertaken on a 3-year cycle since 2003. In 2012, Mathematical Literacy was the major focus of PISA. Reading and Science Literacy were assessed as minor foci. In New Zealand about 5,000 students from 177 schools were involved in the 2012 study.

The average PISA scale score for New Zealand students, and New Zealand's position relative to other countries, declined in reading between 2009 and 2012. In reading, New Zealand scored above the OECD average in 2012. However, compared with countries with similar average scores, New Zealand had larger proportions of students achieving at both lower and higher levels relative to benchmark scores set by PISA. New Zealand is one of only four countries in the study that had more than 4 percent of students achieving above PISA's highest benchmark score.

Results from PISA 2012 also showed that, on average, girls achieved more highly than boys in reading in New Zealand and that NZ European students scored higher than Māori and Pasifika students.

⁶ Gilmore, A., & Smith, J. (2011). *NEMP Report 53 Writing, reading and mathematics report 2010*. Dunedin: University of Otago, Educational Assessment Research Unit.

⁷ Crooks, T., Smith, J., & Flockton, L. (2009). *NEMP Report 49 Reading and speaking assessment results 2008*. Dunedin: University of Otago, Educational Assessment Research Unit.

3. NMSSA English: reading assessment programme

An advisory panel of reading experts met with the NMSSA project team in 2013 to consider the assessment of reading within the English learning area. The meeting identified four broad research questions that would be used to guide the design of the study.

1. To what extent have students developed the knowledge, skills, strategies and attitudes to read increasingly demanding text?
2. To what extent are students able to see themselves as readers and understand the impact it has on their learning?
3. What are the affective, cognitive and environmental factors associated with achievement in reading?
4. How do Year 4 and Year 8 students differ in reading achievement, attitudes to reading and reading experiences?

Components of the English: reading assessment programme

Consideration of the research questions identified by the advisory panel led to the development of three separate components that formed the 2014 English: reading assessment programme (see Table 2.1). One was focused directly on assessing student achievement in English: reading using a combination of group-administered and individual tasks. The two remaining components concentrated on collecting contextual and attitudinal information about English: reading from students, teachers and principals⁸.

Table 2.1 The components of the 2014 NMSSA English: reading assessment programme

Component	Focus	Assessment approach
The Knowledge and Application of Reading in English (KARE) assessment	Students' ability to use reading skills across a range of literary texts in order to: <ul style="list-style-type: none">• locate and recall ideas and information• integrate and interpret ideas and information• critique and evaluate ideas and information.	Part 1: 40-minute, group-administered paper-and-pencil assessment Part 2: Short oral interview
Students' attitudes and learning opportunities in English: reading	Students' attitudes towards, and engagement with, reading. Students' perceptions of reading opportunities and experiences at school.	Student questionnaire – group-administered paper-and-pencil 'My reading' – one-to-one interview
Teachers' and principals' perspectives on the teaching and learning of English: reading in the school	Teachers' and principals' views of reading instruction in their school. Teacher confidence as reading educators. Professional support and learning related to teaching reading. Provision for teaching reading in the school.	Teacher and principal questionnaires

Component 1: The Knowledge and Application of Reading in English (KARE) assessment

The KARE assessment focused on the extent to which students had developed knowledge, skills and understanding in English: reading.

The assessment was made up of two parts. Part 1 involved a group-administered paper-and-pencil assessment and was completed by all Year 4 and Year 8 students in the study (about 2,200 at each year level). In this part of the assessment, students spent up to 40 minutes completing two types of tasks: cloze exercises and reading passages with associated questions. For the cloze exercises, students showed their understanding of a short passage by selecting the best words to fill in a series of gaps in the text. The reading passages and associated questions involved reading a text and then answering a number of selected response and short constructed response questions. A range of passages was used, including poetry, literary fiction and literary non-fiction.

⁸ This overview report along with the three separate reports outlining findings for Māori students, Pasifika students and students with special education needs are focused on Component 1 and aspects of Component 2. Reporting on Components 2 and 3 is provided in *NMSSA Report 5.5: English: Reading 2014 – Contextual Report*.

The second part of the KARE assessment involved an oral one-to-one interview focused on two of the passages that had been presented to students in the paper-and-pencil tasks used in Part 1. Students were given an opportunity to read the passages again and asked to respond to a small number of open-ended questions. At each year level about 800 of the students who completed the first part of the assessment also completed the interview.

KARE assessment framework

An assessment framework was constructed to guide the development of the KARE assessment (see Appendix 7 of *Technical Information 2014 – Social Studies, English: Reading*). The framework outlined three cognitive targets to be assessed across a range of written texts:

- locate and recall ideas and information
- integrate and interpret ideas and information
- critique and evaluate ideas and information.

The assessment of vocabulary understanding and application was included as part of the framework, integrated across the three targets.

The framework was used to construct an item development blueprint, which outlined the relative proportion of items to be developed to represent each cognitive target, the number of cloze tasks to be developed and the type of texts to be used. Table 2.2 shows the final pool of Year 4 and Year 8 tasks developed for the KARE assessment.

Figures 2.1 and 2.2 show examples of the task types used in Part 1 of the KARE assessment.

Table 2.2 The task bank developed for the Knowledge and Application of Reading in English assessment

Task type	Number of tasks	Number of items
Cloze	8	67
Passages with questions	9	69
Oral interview	4	17

The Wedding

There was excitement in the valley. Willie's cousin, Maia, _____ getting married. When Willie looked _____ the kitchen of the marae, he _____ see the big steamed puddings hanging in their bags, and the women _____ kumara and potatoes.

The men outside were _____ a hole for the hangi. They talked and laughed and leaned on their shovels – until they saw Nanny. For weeks _____ had been giving orders. Get this, get that, do _____, do that.

Today, Willie thought he would keep _____ of her way. He knew that Nanny would find _____ for him to do if she caught him hanging _____ the marae.

they	could	inside	something	was	scrubbing	she	around	digging	out	can	this
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Figure 2.1 An example of a cloze task from the Knowledge and Application of Reading in English assessment

In the Garden

Snake and Lizard were in the garden. Snake was sunbathing in a patch of new corn. Lizard was beside her, catching flies.

A woman came near, to weed the vegetables.

"Uh-uh!" said Snake, with a shudder. "Here comes that horrible human thing."

"You shouldn't call anyone names," said Lizard.

"She is!" said Snake. "Yesterday she screamed at me."

"That's because she's scared of you," said Lizard.

9 "Scared of me? That's a laugh!"

"It's not funny at all," replied Lizard. "You hissed at her.

You shouldn't hiss at human things. They don't like it."

"What should I do?" said Snake.

"Just remember that human things are creatures too, and all creatures need kindness."

"But human things give me the creeps," said Snake.

"Don't talk like that," said Lizard. "Say to yourself, 'I will be kind. I will be kind.' Go on!"

Snake curled up amongst the corn, muttering, "I will be kind. I will be kind," while Lizard went away to hunt for flies in the lettuce patch.

A little while later, Lizard heard a terrible scream. He saw the gardening woman running to her house, waving her hands.

Lizard went back to Snake, who was shaking with fear.

"Sh-sh-she s-s-screamed at me!"

"You hissed at her!" said Lizard.

"No! No! I was being k-k-kind!"

"What did you do?" said Lizard.

"I just k-k-kissed her!" said Snake.

By Joy Cowley

1 In line 9, how does Snake most likely sound when she says, "Scared of me?"

- A Angry.
- B Excited.
- C Embarrassed.
- D Surprised.

2 According to Lizard, what don't humans like?

3 Does Lizard like humans? *Circle one:* Yes No
Explain why you think this. Use words and sentences from the story to support your answer.

4 Why does Lizard think that humans should be treated with kindness?

- A Because humans are powerful.
- B Because humans are also animals.
- C Because humans are kind to animals.
- D Because humans are easily scared.

5 Lizard might be described as bossy but he might also be described as

- A wise.
- B scared.
- C silly.
- D funny.

6 Snake did not understand

- A how to apologise.
- B how to be a loving friend.
- C how to mind her own business.
- D how to get along with humans.

Figure 2.2 An example of a passage with associated questions task from the Knowledge and Application of Reading in English

Development of the KARE assessment

The KARE tasks were developed by test development staff within the NMSSA project team. All tasks were carefully reviewed, including a cultural review to make sure the texts and questions were appropriate for the intended audience. The tasks were piloted with several classes of students in a range of schools in the Wellington region and the results used to select and fine-tune items for a larger national trial.

All of the KARE tasks were originally developed for a paper-and-pencil format. After the trial it was decided that a number of the open-ended questions should be responded to orally. This resulted in the design of the second part of the KARE assessment described above – the oral interview.

The final pool of KARE tasks was used to construct a series of linked assessment booklets and oral interview protocols for the main study. Four booklets were constructed at Year 4, and four at Year 8. Two Year 4 and two Year 8 interview protocols were also constructed.

Administering the assessment

Teacher assessors were instructed on how to administer the assessments and interview protocols during a 5-day training session prior to the main study. Up to 25 students in each school completed one of the booklets in a group-administered setting supervised by a teacher assessor (Part 1 of the KARE assessment). Eight of these students also completed the one-to-one interview with an assessor (Part 2). The interviews were videoed.

Linking Year 4 and Year 8 results

In order for achievement at Year 4 and Year 8 to be reported on the same scale, about 800 Year 6 students completed one of two additional assessment booklets made up of a mixture of Year 4 and Year 8 questions. The Year 6 sample was recruited solely for the purposes of scale construction and involved schools from outside the main sample. No results for Year 6 are presented in this report.

Marking

A marking plan was developed and a group of markers employed to score the students' responses to Part 1 of the assessment. Quality assurance was achieved by establishing rigorous initial training, having members of the assessment development team on hand during marking, providing detailed (annotated) scoring guides, and the use of double and shared marking. Accuracy and consistency of marking were checked regularly. A group of teacher assessors scored the videoed student responses to Part 2 of the assessment. The teacher assessors were trained how to apply the scoring criteria and took part in moderation exercises as part of the scoring process.

Constructing the KARE scale

An Item Response Theory (IRT) approach (specifically the Rasch model)⁹ was used to construct a measurement scale for the KARE assessment. The techniques used to do the scaling were similar to those used in studies such as PISA and TIMSS. Some advantages of applying the Rasch model are:

- both relative question difficulty and student achievement can be located on the constructed scale
- the measurement scale units represent the same amount of change in achievement across the whole scale
- achievement for students in different year levels can be located on the same measurement scale
- the scale can be described to show what students typically understand and are able to do at different levels of achievement (e.g., see the scale description found later in this chapter).

The software package WINSTEPS¹⁰ was used to develop the measurement scale.

⁹ IRT is an approach to constructing and scoring assessments and surveys that measure mental competencies and attitudes. IRT seeks to establish a mathematical model to describe the relationship between people (in terms of their levels of ability or the strengths of their attitude) and the probability of observing a correct answer or a particular level of response to individual questions. IRT approaches provide flexible techniques for linking assessments made up of different questions to a common reporting scale. The common scale allows the performance of students to be compared regardless of which form of the assessment they were administered.

¹⁰ Linacre, J. M. (2009). *WINSTEPS Rasch measurement computer program*. Chicago: Winsteps.com.

Standardising the scale

For ease of understanding, the KARE scale was standardised so that:

- the mean of all students (Year 4 and Year 8 combined) was equal to 100 scale score units
- the average standard deviation for the two year levels was equal to 20 scale score units.

Reliability of KARE scale scores

The WINSTEPS software provided reliability indices for achievement scores and item locations. These were 0.90 and 0.99, respectively, indicating that both student achievement and relative question difficulty have been located on the scale with a satisfactory level of precision.

KARE scale description

Figures 2.3 to 2.6 provide a description of the reading skills and knowledge measured by the KARE scale. The description was developed from the data collected using the KARE assessment in the NMSSA English: reading study held in Term 3, 2014.

To create the description, each question used in the KARE assessment was located on the scale where students achieving at that part of the scale answered the question correctly about 70 percent of the time. The questions themselves were then examined to identify what reading knowledge and skills they required. By working from the questions located at the bottom of the scale to the ones at the top, the assessment developers were able to identify how the demands of the questions increased as the scale locations changed. The result was a four-part description, providing a broad indication of what students typically know and can do in reading when achieving at different places on the scale.

The description has been written to incorporate the three cognitive targets underpinning the KARE assessment: locate and recall ideas and information; integrate and interpret ideas and information; and critique and evaluate ideas and information. Figures 2.4 to 2.6 use individual questions from the KARE assessment to exemplify the description of the scale for each cognitive target. Annotations are used in each figure to describe the text and task demands associated with each of the questions.

The description is provided to give readers a strong sense of how reading was assessed through the KARE assessment. Readers are encouraged to refer back to the description when considering the meaning of the KARE scale scores provided throughout the report. The scale descriptors have not been written to necessarily 'line up' with curriculum levels or achievement objectives. They are a direct reflection of what was assessed and how relatively hard or easy students found the content of the assessment.

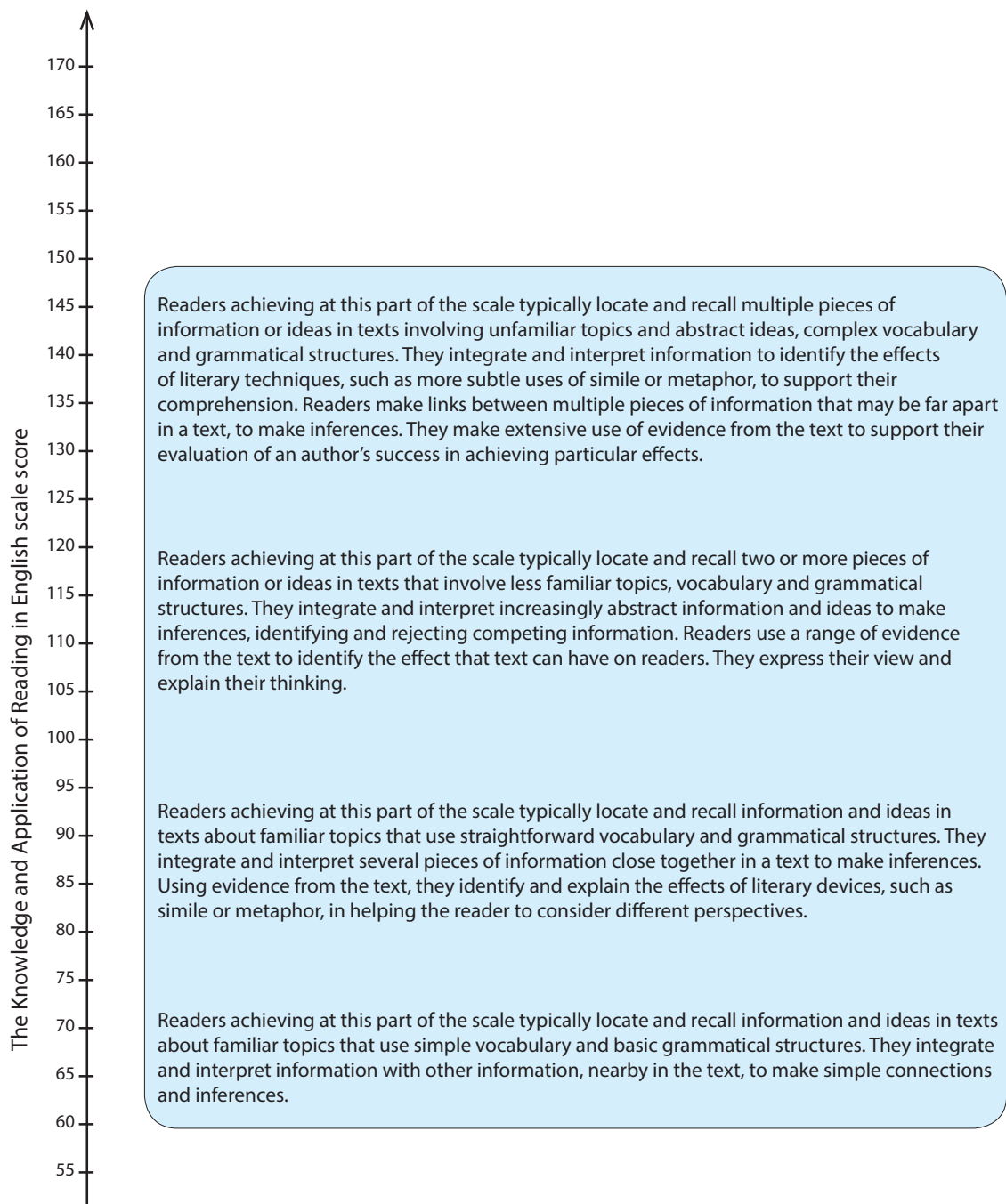


Figure 2.3 The description of the Knowledge and Application of Reading in English scale

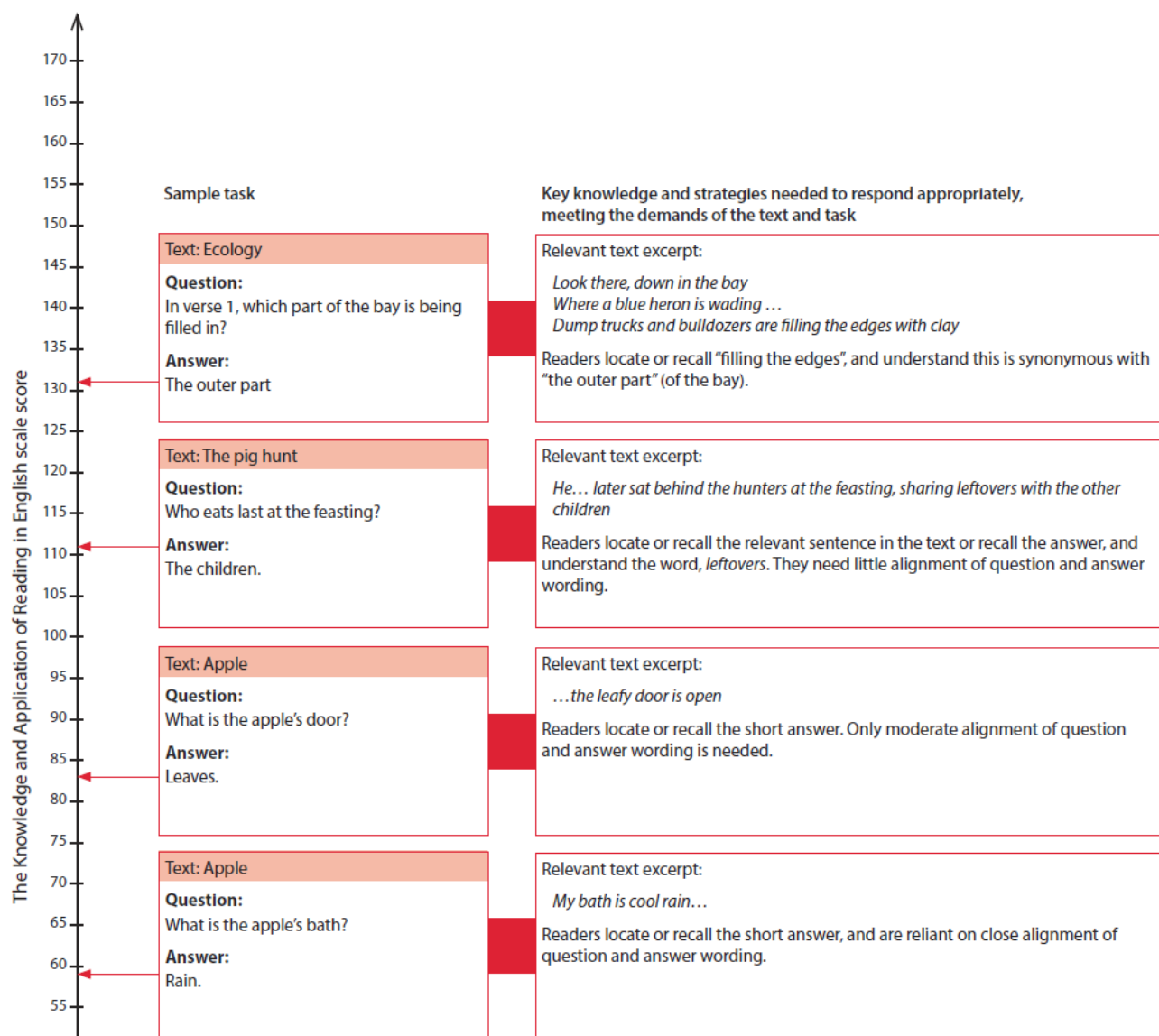


Figure 2.4 Locate and recall examples from the Knowledge and Application of Reading in English assessment

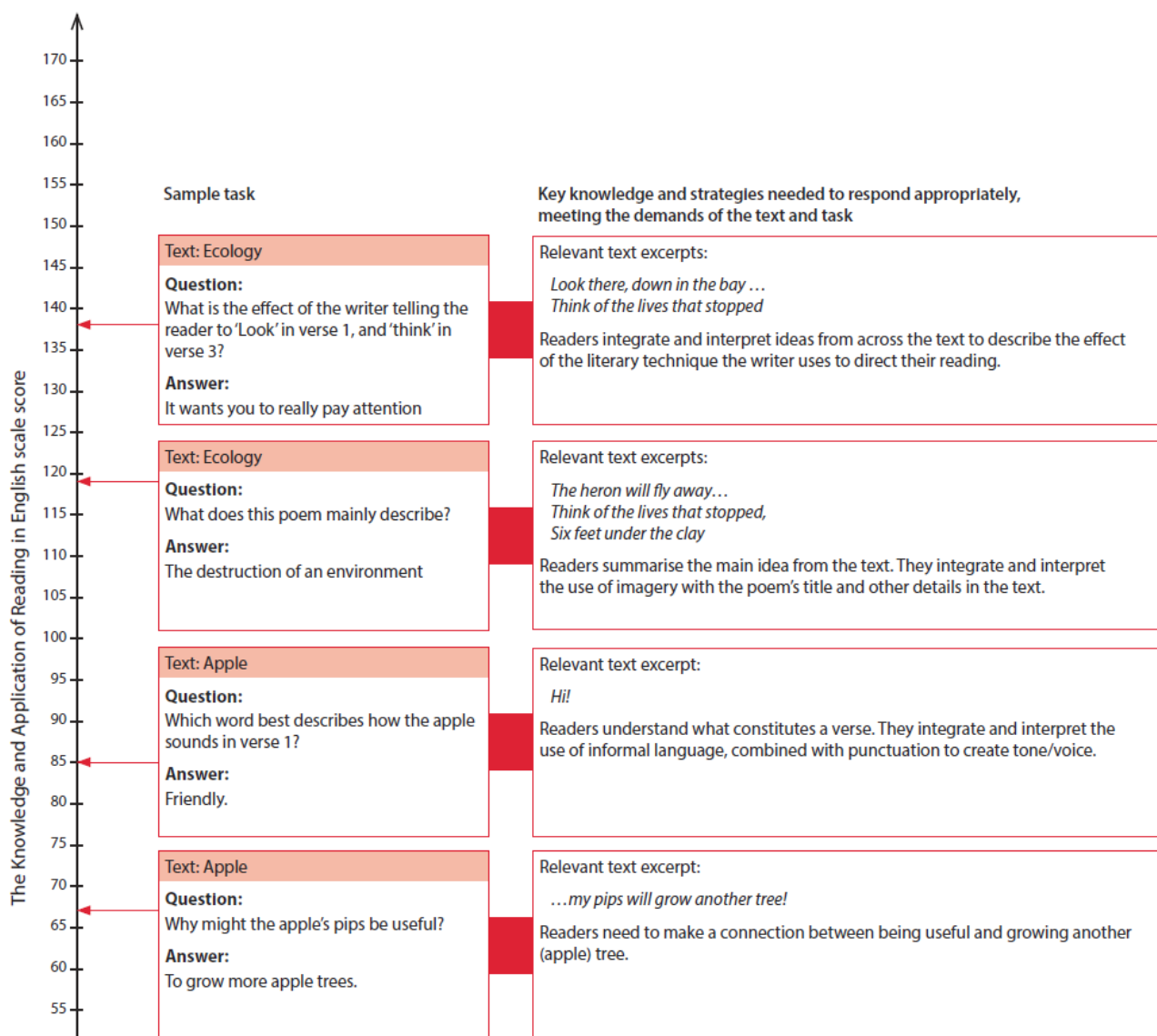


Figure 2.5 Integrate and interpret examples from the Knowledge and Application of Reading in English assessment

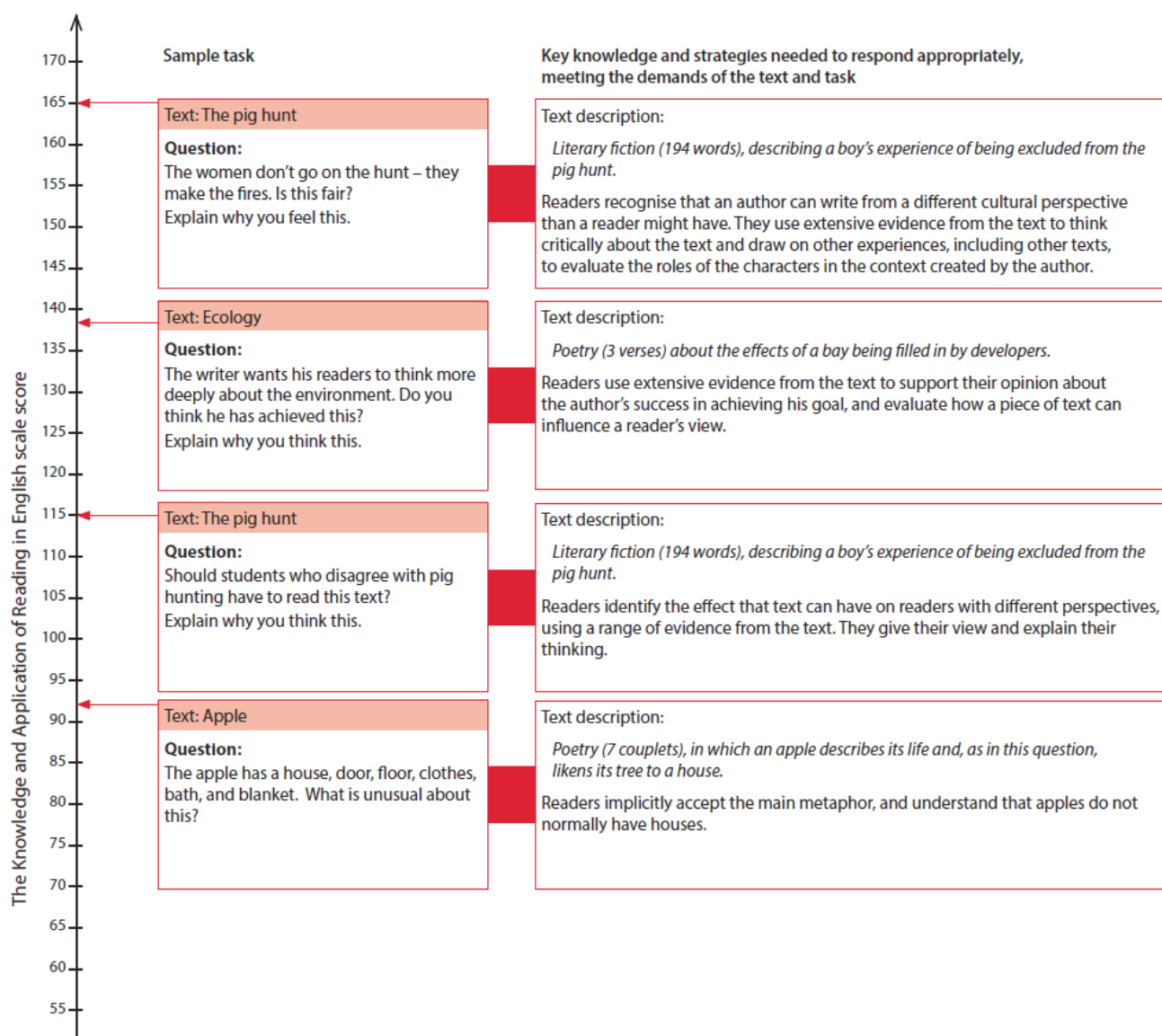


Figure 2.6 Critique and evaluate examples from the Knowledge and Application of Reading in English assessment

Reporting achievement against curriculum levels

An alignment exercise was undertaken to link performance ranges on the KARE scale to the levels of the NZC. An invited panel of teachers, academics and professional learning facilitators, guided by psychometric staff from the NMSSA team, worked to define the minimum scale scores (cut-scores) that indicated, on balance, students were achieving achievement objectives at each of curriculum levels 2, 3 and 4. This alignment allowed achievement measured on the KARE scale to be reported in terms of curriculum levels.

In the NZC, each of the first four curriculum levels has been designed to represent about 2 years of learning at school. The curriculum expectation is that students will have, on balance, achieved level 2 objectives by the end of Year 4 and, on balance, achieved level 4 objectives by the end of Year 8.

More information about the curriculum alignment procedure can be found in Appendix 8 of *Technical Information 2014 – Social Studies, English: Reading*.

Component 2: Students' attitudes and learning opportunities in English: reading

The second component of the NMSSA English: reading programme related to students' attitudes to, and their learning experiences in, English: reading. Data were collected with a questionnaire and a short interview.

Student questionnaire

The student questionnaire was administered to all students in the 2014 NMSSA study. It contained three sections regarding reading. The first of these related to students' attitudes to reading. Students were presented with a series of statements about reading and asked to indicate how much they agreed with each statement using a 4-point scale: 'do not agree at all', 'agree a little', 'agree quite a lot' and 'totally agree'.

The attitude-to-reading section of the student questionnaire was piloted with small groups of students, and then trialled with several hundred students at Year 4 and Year 8 in a range of schools. Data from the trial were used to inform the selection of the final set of statements for the main study.

The Rasch model was used to construct a reporting scale (Attitude to Reading scale) based on the responses to the attitude-to-reading statements in the main study. As with other NMSSA scales, the scale was set to have an average of 100 scale score units and an average standard deviation of 20 scale score units for a year level¹¹.

A second section of the questionnaire asked students about their reading opportunities and experiences at school. For this section students responded on a different 4-point scale ('never', 'sometimes', 'often' and 'very often') to show how frequently they were involved in a range of reading activities.

A third section contained a small number of questions about reading in general, including reading outside of school.

Student interview

Eight students from each school (about 800 students at each year level) were also interviewed about their reading by the teacher assessors. The interview involved three themes: knowledge of New Zealand literature and its impact on individual and cultural identity; understanding the impact reading has on learning; and understanding about what it means to be a proficient reader. The teacher assessors used a set protocol to conduct the interviews. Students were asked a series of questions and prompted to explain the thinking behind their answers. The interviews were videoed and a coding scheme developed to analyse the students' responses.

Component 3: Teacher and principal perspectives on English: reading

Questionnaires were developed for both teachers and principals to ask about their perspectives on the learning and teaching of English: reading.

Up to three teachers from each school were asked to fill in a teacher questionnaire. The teachers chosen were those who had the most students participating in NMSSA assessment and/or were specialist teachers of English: reading. The questionnaire included sections asking teachers about their preparedness to teach reading, students' opportunities to learn and their own opportunities to undertake professional learning.

The principals' questionnaire asked principals about the school-wide programme in English: reading.

¹¹ The WINSTEPS' reliability index related to students' attitude scale scores was 0.82. The index is analogous to Cronbach's Alpha.

4. Focus of this report

This overview report focuses on Component 1 and aspects of Component 2 of the 2014 English: reading assessment programme. A separate contextual report examines Components 2 and 3 in more detail¹². Three separate reports focusing on results for Māori students, Pasifika students and students with special education needs are also available¹³.

5. Presentation of the findings

This section describes how graphs are used to present findings in the report and includes an explanation of some of the statistics used in the tables.

Box plots

Box and whisker plots (box plots) are used extensively throughout this report to summarise score distributions.

To construct a box plot, scores are ordered from low to high and then divided into four groups of equal size, called quartile groups. These are shown in Figure 2.7.

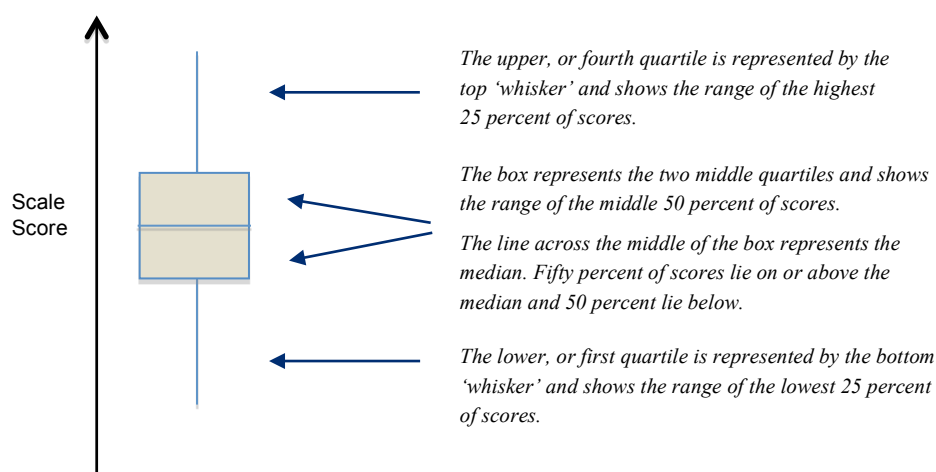


Figure 2.7 Understanding box plots

The box is used to show the range of the middle 50 percent of the scores and the whiskers the top and bottom 25 percent of scores. In this report, the whiskers of the box plot do not include outliers (scores considered to be unusually high or low) and have a maximum length of 1.5 multiplied by the inter-quartile (middle 50 percent) range.

When box plots for two or more groups are presented as part of the same graphic, the widths of the boxes are used to represent the relative sizes of the groups. For instance, a narrow box indicates that the group size is smaller than that represented by a wider box in the same plot.

The colours for the box plots have been chosen to assist with readability. Different hues have been selected to represent each of the reported variables (for instance, gender) and two different shades of each hue chosen to represent the group at each year level (a lighter shade for Year 4 and a darker shade for Year 8).

¹² Educational Assessment Research Unit and New Zealand Council for Educational Research. (2015). *NMSSA Report 5.5: English: Reading – Contextual Report*.

¹³ Educational Assessment Research Unit and New Zealand Council for Educational Research. (2015). *NMSSA Report 5.2: Māori Student Achievement in English: Reading – Key findings 2014*.
Educational Assessment Research Unit and New Zealand Council for Educational Research. (2015). *NMSSA Report 5.3: Pasifika Student Achievement in English: Reading – Key findings 2014*.
Educational Assessment Research Unit and New Zealand Council for Educational Research. (2015). *NMSSA Report 5.4: Achievement of Students with Special Education Needs in English: Reading – Key findings 2014*.

For plots involving the KARE assessment, the minimum scale score (cut-score) associated with achieving the curriculum objectives at each of curriculum levels 2 to 4 are indicated by the horizontal dotted lines across the graph (Figure 2.8).

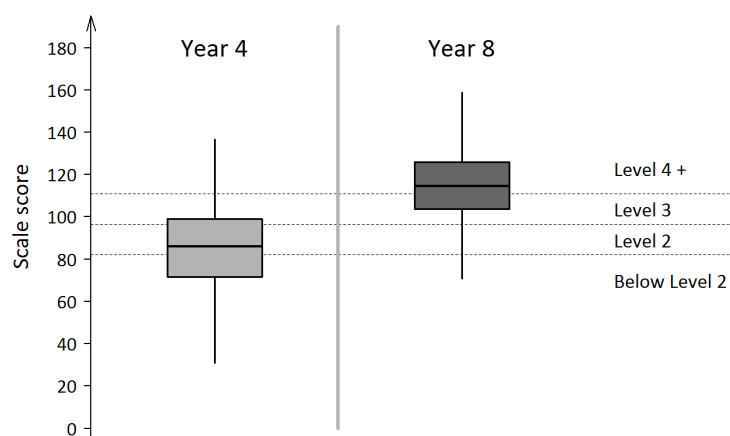


Figure 2.8 Interpreting box plots and NZC band levels

Line graphs of score distributions

Another type of graph used to display data in this report is the line graph (see Figure 2.9). Line graphs are used to show how the distributions of scores for Year 4 and Year 8 compare with curriculum expectations. As for the box plots, the horizontal shaded lines indicate the minimum scale scores (cut-scores) associated with achieving the curriculum objectives at each of curriculum levels 2 to 4. The shading around the lines provides a reminder that these lines represent the result of a judgement exercise (the curriculum alignment process).

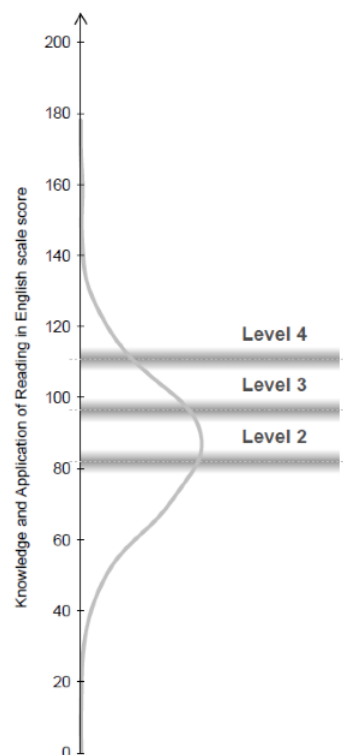


Figure 2.9 An example of a line graph

Tables of numerical results

The KARE measure developed for the NMSSA English: reading study quantifies achievement differences in terms of scale score units. Because the same scale has been used at both Year 4 and Year 8 it is possible to estimate how much change on average occurs on an annual basis. Table 2.3 shows the differences in average scale scores on the KARE scale between Year 4 and Year 8, and how this relates to annualised change. As can be seen, scores increased on average by about 7 scale score units per year. This figure is useful to keep in mind when interpreting scale score differences throughout the report.

Table 2.3 Average difference in scale score units on the Knowledge and Application of Reading in English assessment between Year 4 and Year 8

	Knowledge and Application of Reading in English
Difference in average scale score (Year 8–Year 4)	29
Confidence interval	(27.5, 30.5)
Average annual change	7.3
Average annual effect size	0.36

Table 2.3 also shows the 95 percent confidence interval associated with the difference in average scores at Year 4 and Year 8. Confidence intervals are used throughout the report and provide a range within which we can be fairly sure the population value for the reported statistic lies. The confidence intervals have been adjusted to account for any design effect created through the sampling procedure (i.e., sampling schools and then sampling students). As a general rule of thumb, when the confidence intervals for two groups overlap, any difference between the groups may reasonably be explained by the kind of random variation that occurs in sampling studies (i.e., the difference between the groups is **not** considered to be statistically significant).

In some cases, the difference in average scores between two groups has been calculated and a confidence interval for that difference presented. When a confidence interval for a difference does not include zero, this difference can be considered to be statistically significant.

Where statistically significant differences appear in tables in this report they have been bolded. For instance, in the table above, the Year 8–Year 4 difference of 29 scale score units is bolded – the difference is considered to be statistically significant.

Effect sizes have been used throughout the report to help interpret differences between groups. An effect size quantifies the difference between the average scores for two groups in terms of standard deviation units. The calculation of the effect sizes in this report weights the standard deviation for each group by its sample size¹⁴. Because the standard deviations vary from group to group, this can mean that the same difference in scale scores can be associated with a different effect size for one pair of groups compared with another. When comparing two effect sizes it is very important to refer back to the scale score differences to make sure any interpretations are valid.

Use of rounding

In the tables and text presented in this report the average scores for each group and subgroup have been rounded to whole numbers. Some tables of findings report the difference between average scale scores for two groups or subgroups. These differences have been calculated using the non-rounded averages, and are numerically correct. In some cases, the difference reported may not be the same as the simple difference between the pair of rounded averages shown in the table. All confidence intervals have been rounded to the nearest 0.5.

¹⁴ The formula for the effect size calculation is: $\frac{M_1 - M_2}{\sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}}$, where M_1 and M_2 represent the average scores for group 1 and group 2, s_1 and s_2 their standard deviations and n_1 and n_2 the number in each group.

3 Student Achievement in English: Reading

This chapter describes Year 4 and Year 8 student achievement in English: reading based on the KARE assessment results. It examines how achievement varies within and between year levels, including variation by gender, ethnicity, school decile and type of school. The final section examines results for students with special education needs.

Detailed tables of means, standard deviations, sample sizes, effect sizes and 95 percent confidence intervals can be found in Appendix 1.

1. Achievement in English: reading

Figure 3.1 uses box plots to show the distributions of scores on the KARE assessment for Year 4 and Year 8 students, and Table 3.1 provides summary statistics for each year level. On average, Year 8 students scored 29 units higher on the KARE scale than Year 4 students (an annualised difference of about 7 scale score units per year). There was also some overlap in the score distributions. The difference in average scores between Year 4 and Year 8 represents an effect size of 1.44, which is very similar to that found between Year 4 and Year 8 on the group-administered assessment in the 2013 NMSSA mathematics and statistics study.

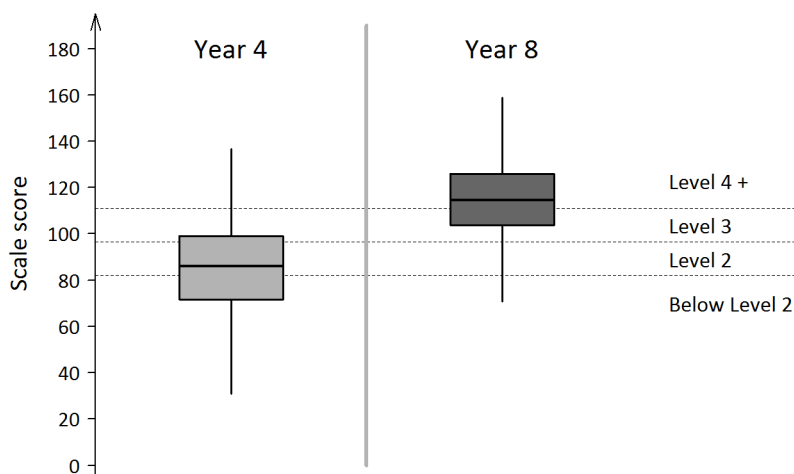


Figure 3.1 Distribution of Year 4 and Year 8 students' scores on the Knowledge and Application of Reading in English scale

Table 3.1 Summary statistics for Year 4 and Year 8 achievement on the Knowledge and Application of Reading in English scale

	Year 4	Year 8	
	N = 2,174	N = 2,190	
Average scale score	86	114	
Confidence interval for the average	(84.5, 86.5)	(113.5, 115.5)	(27.5, 30.5)
Standard deviation	21	19	

2. Achievement against the curriculum

Table 3.2 shows the performance of Year 4 and Year 8 students in terms of achievement against curriculum levels.

Table 3.2 Percentage of Year 4 and Year 8 students achieving across curriculum levels on the Knowledge and Application of Reading in English scale

Curriculum level	Year 4		Year 8	
	%	Confidence interval (%)	%	Confidence interval (%)
Level 4 and above	11	(10.0, 13.0)	59	(56.0, 61.0)
Level 3	18	(16.0, 20.0)	26	(24.0, 28.5)
Level 2	29	(27.0, 31.5)	11	(9.0, 12.0)
Below Level 2	41	(39.0, 44.0)	4	(3.5, 5.5)

Figures 3.2 and 3.3 use line graphs to show the whole score distribution for Year 4 and Year 8 respectively against the agreed alignment of curriculum levels 2, 3 and 4 with the KARE scale. The grey horizontal lines represent the cut-scores (minimum achievement scores) associated with curriculum levels 2, 3 and 4.

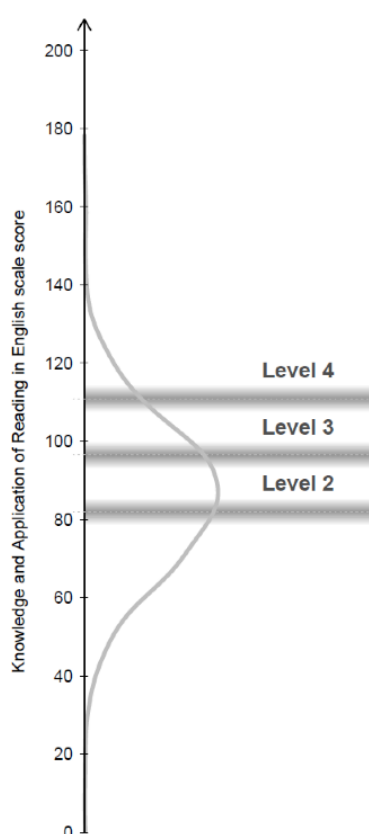


Figure 3.2 Distribution of Year 4 students' achievement on the Knowledge and Application of Reading in English scale against the NZC levels for English

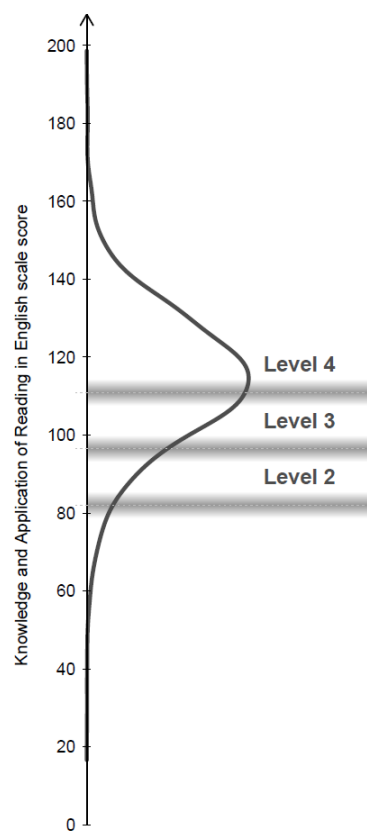


Figure 3.3 Distribution of Year 8 students' achievement on the Knowledge and Application of Reading in English scale against the NZC levels for English

Fifty-eight percent of Year 4 students scored above the minimum score on the KARE scale associated with achieving curriculum level 2 objectives. Fifty-nine percent of Year 8 students scored above the minimum score associated with achieving curriculum level 4 objectives. The curriculum expectation at Year 4 is that students will have, on balance, achieved level 2 objectives by the end of the school year. In Year 8 they will have, on balance, achieved level 4 objectives by the end of the school year. NMSSA assessment was carried out in Term 3. Therefore, we could expect a greater proportion of students at each year level to have met or exceeded the minimum score on the KARE scale for the appropriate curriculum level by the end of the year.

Compared with several other learning areas assessed by NMSSA (e.g., mathematics and statistics, and English: writing) the performance against the curriculum for Year 8 students is relatively high. In the 2013 NMSSA mathematics and statistics study, for instance, 41 percent of Year 8 students scored above the cut-score set for curriculum level 4.

3. Achievement by student-level variables

Figure 3.4 and 3.5 display the score distributions on the KARE assessment at Year 4 and Year 8 by gender and ethnicity¹⁵. As found in other studies of reading achievement in New Zealand (NEMP, PIRLS and PISA), girls scored higher on average than boys (7 scale score units at both year levels). The difference in average scores for boys and girls was statistically significant, and of a similar magnitude within ethnic groups.

At both year levels, Māori and Pasifika students, on average, performed less well than non-Māori and non-Pasifika, respectively (see Table 3.3). These differences were statistically significant.

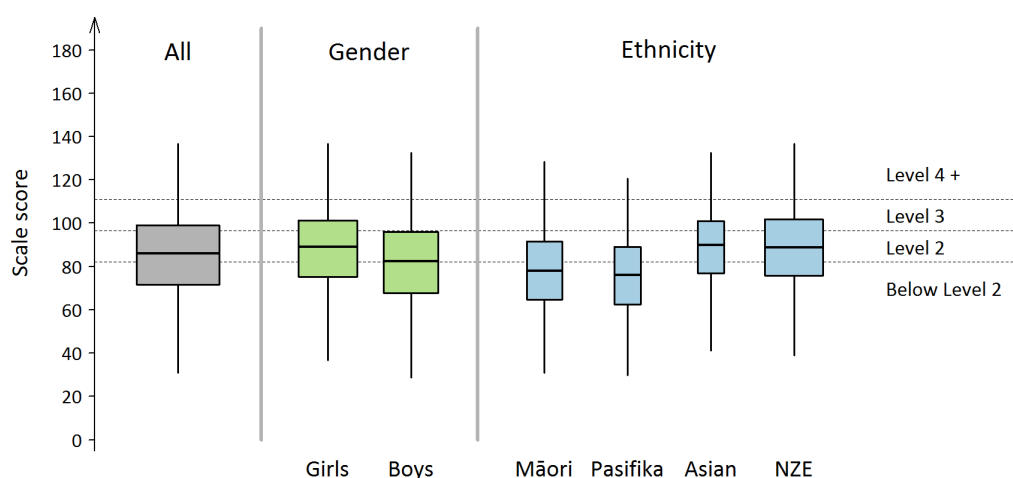


Figure 3.4 Distribution of Year 4 students' scores on the Knowledge and Application of Reading in English scale, by gender and ethnicity (NZE = NZ European)

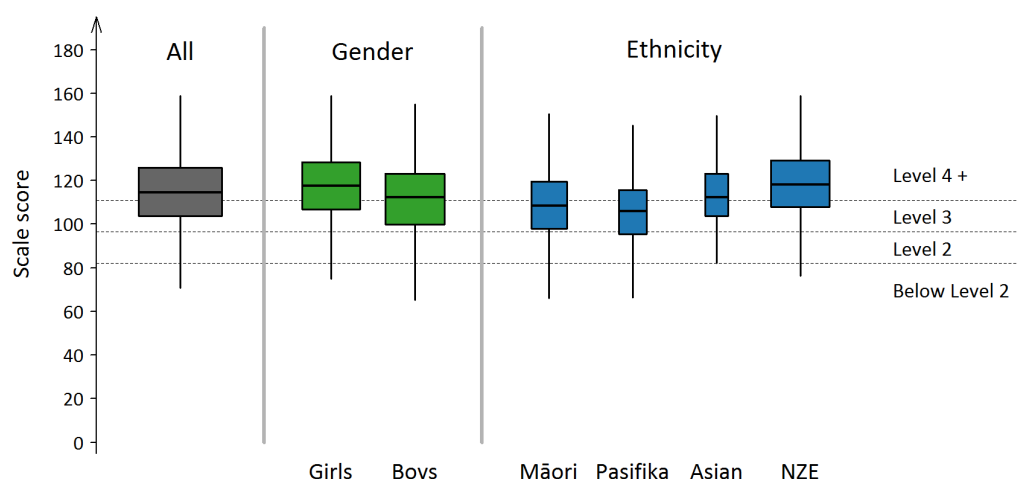


Figure 3.5 Distribution of Year 8 students' scores on the Knowledge and Application of Reading in English scale, by gender and ethnicity (NZE = NZ European)

¹⁵ Non-prioritised ethnicity was used where students could identify with up to three ethnicities. This meant they could be present in multiple ethnic groups. Student ethnicity data were obtained from National Student Number information held on the Ministry of Education ENROL database. The 'NZ European' category included NZ Pākehā only. The 'Pasifika' category included Tokelauan, Fijian, Niuean, Tongan, Cook Islands Māori, Samoan and other Pacific peoples. The 'Asian' category included Filipino, Cambodian, Vietnamese, Other Southeast Asian, Indian, Chinese, Sri Lankan, Japanese, Korean and other Asians. The 'Other' category included Australians, British/Irish, German, Dutch, Greek, Polish, South Slav, Italian and other Europeans, Middle Eastern, Latin American, African and Not Stated. About 7 percent of students at Year 4 and about 6 percent at Year 8 indicated they belonged to ethnic groups categorised as 'Other'.

4. Achievement by school-level variables

Figures 3.6 and 3.7 show the performance of students according to school decile band and school type¹⁶. The ‘low’ decile band comprised students in decile 1–3 schools, the ‘mid’ decile band comprised students in decile 4–7 schools and the ‘high’ decile band, students in decile 8–10 schools.

At both year levels, the average score for students from high decile schools was greater than the average scores for students from mid and low decile schools. At Year 4, the difference between the average scores for students in the low and high decile bands was 16 scale score units. At Year 8, it was 13 scale score units. These decile-related differences for reading represent smaller effect sizes than the differences recorded between the decile groups for the group-administered assessment in mathematics and statistics in 2013 (an average effect size of 0.8 for English: reading compared with 1.2 for mathematics and statistics).

There were no statistically significant differences between the average scores for students at different school types at either year level.

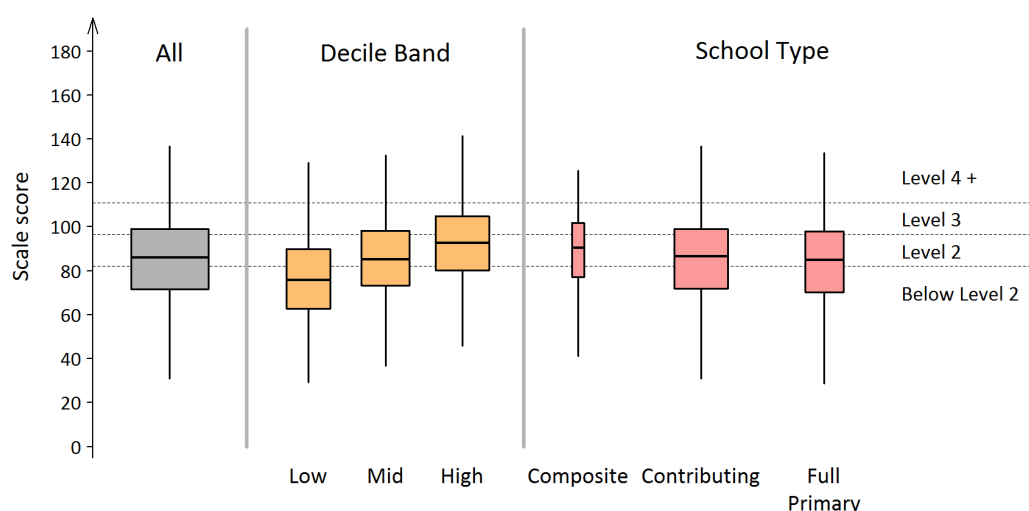


Figure 3.6 Distribution of Year 4 students' scores on the Knowledge and Application of Reading in English scale, by decile band and school type

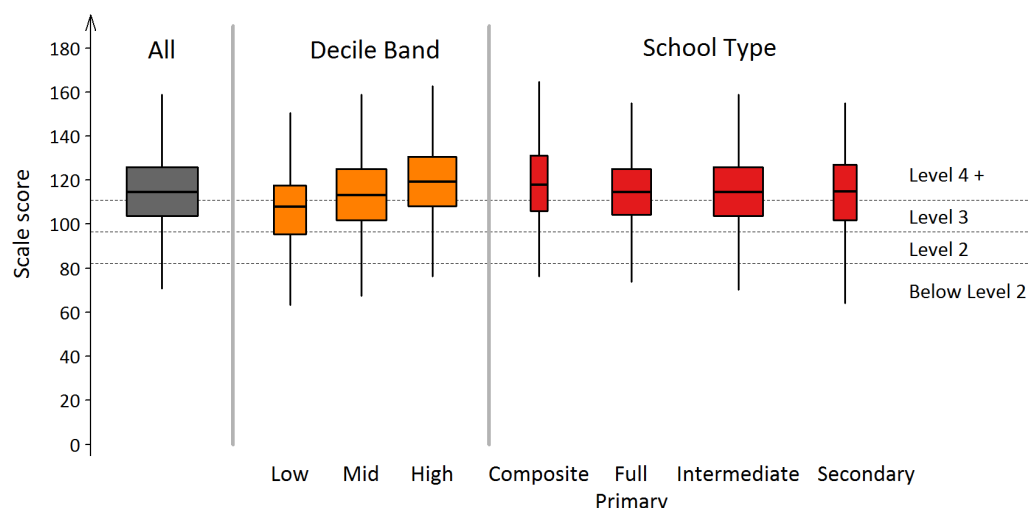


Figure 3.7 Distribution of Year 8 students' scores on the Knowledge and Application of Reading in English scale, by decile band and school type

¹⁶ A *composite* school combines students from different year levels that are typically found in separate primary or secondary schools. A *contributing* school caters for Years 1 to 6 of schooling. A *full primary* school caters for Years 1 to 8 of schooling. *Secondary* schools cater for Year 7 to Year 15 of schooling, although many cater for Year 9 to Year 15 only. An *intermediate* school caters for Years 7 and 8 of schooling.

It is important to note that differences in average scores between ethnic groups may be confounded with decile differences. A regression analysis using decile and ethnicity groupings¹⁷ to predict achievement indicated that separate effects related to decile and to ethnicity could be identified. This means that when we account for differences in achievement between deciles, there are still differences in average KARE scores between students from different ethnic groups (see Appendix 9 of *NMSSA Technical Information 2014 – Social Studies & English: Reading*).

5. Difference in achievement between Year 4 and Year 8

Table 3.3 shows the difference between the average scale scores for Year 4 and Year 8 on the KARE assessment across a range of groups. In general, the difference between the average scale scores for Year 4 and Year 8 was fairly similar across the groups (about 29 scale score units). However, the difference was less for Asian students in the sample (24 scale score units) than it was for students in other ethnic groups.

Table 3.3 Difference in average scores between Year 4 and Year 8 on the Knowledge and Application of Reading in English scale, by subgroup

Knowledge and Application of Reading in English					
	Year 4 average scale score	Year 8 average scale score	Year 8–Year 4 difference in average scale scores*	Confidence interval for the difference	Annualised difference in average scale scores
Year					
All	86	114	29	(27.5, 30.5)	7
Gender					
Girls	89	118	29	(27.0, 31.0)	7
Boys	82	111	29	(27.0, 31.0)	7
Ethnicity					
Māori	78	108	30	(27.0, 33.0)	8
Pasifika	76	106	30	(26.5, 33.5)	8
Asian	89	113	24	(20.5, 28.0)	6
NZ European	89	118	29	(27.5, 31.0)	7
School decile					
Low	76	106	30	(27.5, 33.5)	8
Mid	85	113	28	(25.0, 30.0)	7
High	92	120	27	(25.0, 29.5)	7

6. Achievement for students with special education needs

The NMSSA includes students with special education needs in the assessment programme. Participating schools identified students' special education needs¹⁸ using the following categories.

- High special education needs: for example, ORS funded, severe behaviour or communication assistance from Special Education.
- Moderate special education needs: for example, provided with a teacher aide from school funds, on the case load for Resource Teachers: Learning and Behaviour (RTLB) or Child, Youth and Family Services (CYFS).
- On referral: for example, referred to Special Education or CYFS with action pending.

Students who did not fall into these categories were assigned to the 'no special education needs' group.

¹⁷ For the purposes of the regression model, the decile groupings were transformed into quintiles where quintile 1 combines decile 1 and 2 schools, quintile 2 combines decile 3 and 4 schools and so on.

¹⁸ The categories of special education needs were those commonly used in schools and therefore easy for schools to respond to. Schools were asked to describe the funding supports in place for children with special education needs to access the curriculum, through ORS, RTLB, Ministry of Education specialist staff and school funds. To capture any unmet needs, they were also asked to note students who were on referral to Ministry of Education specialist staff, RTLB, etc. These categories were discussed and endorsed by the NMSSA special education needs reference group.

Students with special education needs were encouraged to participate in the study using the level of assistance normally provided to them in school. The NMSSA project team also prepared accommodations, such as larger print booklets, when these were requested. Students could choose whether or not to read the larger print booklets.

Schools were able to withdraw any students for whom they believed participating in NMSSA would be inappropriate. Parents were also able to withdraw students from participating in the study. Reasons for withdrawing students were not always related to students having special education needs, but could also include, for example, students who had less than 2 years experience with English, or whose parents did not wish their child to be out of the classroom. Table 3.4 indicates the number of students with special education needs by category withdrawn from the study by principals and parents prior to the assessment programme.

Table 3.4 Number of Year 4 and Year 8 students with special education needs withdrawn by principals or parents

Special education needs category	Year 4	Year 8
	N = 45	N = 55
High special education needs	10	14
Moderate special education needs	26	25
On referral	5	6
Parents (SEN category not specified)	4	10

Table 3.5 shows a breakdown of student numbers according to the special education needs categories. The on referral and high needs groups were very small at each year level and cannot be considered nationally representative. Overall, about 9 percent of students at Year 4 and 7 percent of students at Year 8 were included in either the high needs, moderate needs or on referral categories.

Table 3.5 Number of students with special education needs in the Year 4 and Year 8 samples

Special education needs category	Year 4	Year 8
	N	N
High special education needs	7	7
Moderate special education needs	166	135
On referral	18	7
No special education needs	1,982	2,040
Total	2,173	2,189

Figure 3.8 shows the distribution of achievement across the combined special education needs categories. Overall, the average score for students with special education needs was about 20 scale score units lower than for students with no special education needs at both year levels. The ‘progress’ of students identified with special education needs was the same as those with no special education needs (28 scale score units).

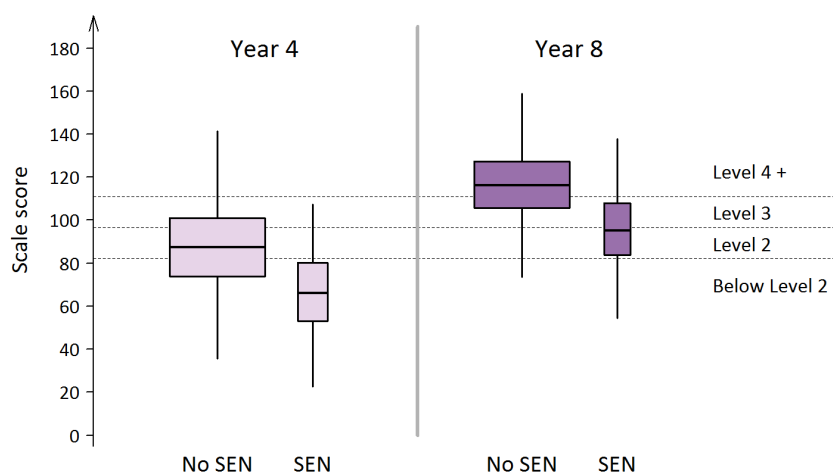


Figure 3.8 Distribution of scores on the Knowledge and Application of Reading in English scale for students with special education needs at Year 4 and Year 8 (SEN = special education needs)

7. Summary

Fifty-eight percent of Year 4 students scored above the minimum score on the KARE scale associated with achieving curriculum level 2 objectives. Fifty-nine percent of Year 8 students scored above the minimum score associated with achieving curriculum level 4 objectives.

The difference between the average scores on the KARE scale for Year 4 and Year 8 students was 29 scale score units. This represents an annualised average difference of about 7 scale score units (an annual effect size of about 0.36).

Girls scored about 7 scale score units higher, on average, than boys at both Year 4 and Year 8. This gender pattern was constant within ethnic and decile groups.

At both year levels, New Zealand European students scored higher, on average, than Māori and Pasifika students (by about 12 scale score units at Year 4 and 11 scale score units at Year 8).

At both year levels, the average score for students from high decile schools was greater than the average scores for students from mid and low decile schools. At Year 4, the difference between the average scores for students in the low and high decile bands was 16 scale score units. At Year 8, it was 13 scale score units.

Overall, the average score for students with special education needs was about 20 scale score units lower than students with no special education needs at both year levels. The 'progress' of students with special education needs between Year 4 and Year 8 was the same as those with no special education needs.

4 Students' Attitudes to Reading and their Opportunities to Learn

As described in Chapter 2, the NMSSA English: reading study used a student questionnaire to gather data on a number of contextual factors. The questionnaire included sections related to students' attitudes to reading, their reading opportunities and experiences and the amount of time spent reading outside of school. About 2,200 students responded to the questionnaire at each of Year 4 and Year 8. This chapter describes how students responded to these sections and compares the responses to patterns in achievement¹⁹.

1. Attitudes to reading

Students at both year levels were asked to respond to a series of statements about their attitudes to reading. The students showed their level of agreement with each statement using a 4-point scale: 'do not agree at all', 'agree a little', 'agree quite a lot' and 'totally agree'. Figures 4.1 and 4.2 show how students responded by gender at Year 4 and Year 8, respectively.

As found in other studies, such as PISA and NEMP, students were generally very positive about reading, with Year 4 students more positive than Year 8 students overall. One-quarter of Year 8 students did not agree at all that reading is their favourite subject at school, compared with 13 percent of Year 4 students who thought the same. In general, girls tended to be more positive than boys, who were more likely to disagree that reading was their favourite subject, and that they liked reading in their own time – outside school. Looking at Year 4 students who responded 'totally agree', both girls and boys were more likely to indicate they like reading at school than outside school. The reverse was evident for girls and boys in Year 8.

¹⁹ As noted earlier, the *NMSSA Report 5.5 English Reading 2014 – Contextual Report* provides additional reporting on contextual data gathered from students as part of the 2014 NMSSA study, as well as reporting related to the teacher and principal questionnaire.

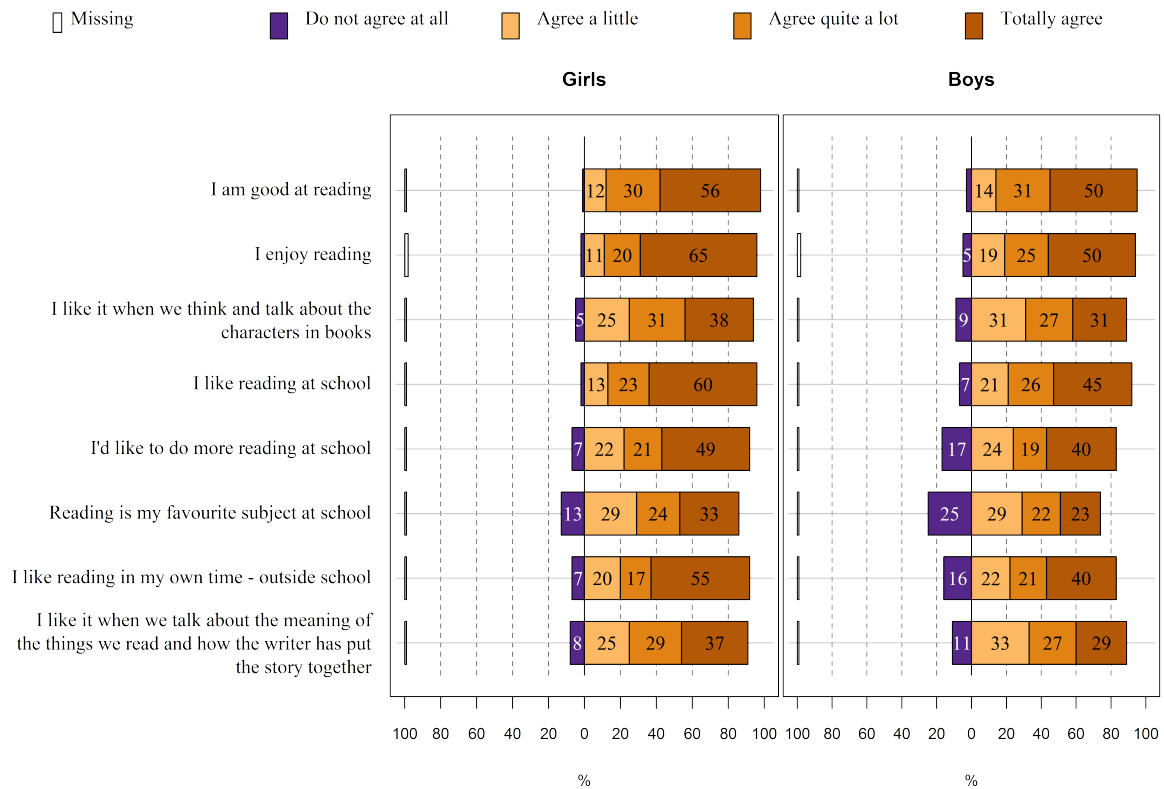


Figure 4.1 Percentage frequency of Year 4 student responses to individual attitude statements about reading, by gender

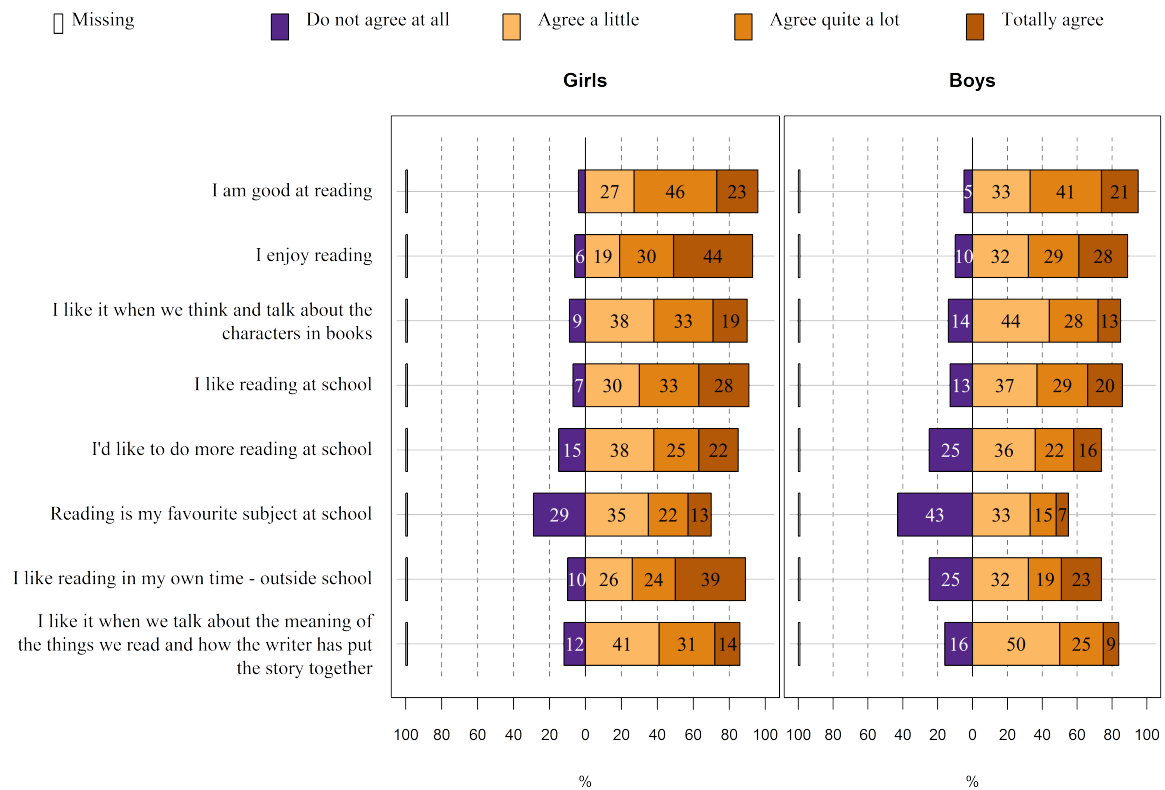


Figure 4.2 Percentage frequency of Year 8 student responses to individual attitude statements about reading, by gender

Attitude to Reading scale

The responses to the individual attitude statements were combined to construct an overall Attitude to Reading scale score for each student²⁰. Figure 4.3 shows the distribution of Attitude to Reading scale scores for Year 4 and Year 8. The scale has been divided into three regions associated with the different response categories students used to respond to the attitude statements. The 'very positive' region indicates the part of the scale where 'totally agree' responses to the statements were highly probable. That is, students whose overall attitude scores were located at this part of the scale were most likely to have selected 'totally agree' rather than any of the other response categories when responding to the statements. On the other hand, the 'negative' region indicates the part of the scale where 'do not agree at all' responses were most probable. The positive region indicates the part of the scale where students, whose overall attitude score was located around this part, typically responded to each statement with at least some level of agreement ('agree a little' or 'agree quite a lot').

As indicated by the response patterns to the individual attitude statements shown above, on average, Year 4 students were located higher on the Attitude to Reading scale than Year 8 students. Most Year 8 students, however, were still categorised as positive or very positive. The average difference between Year 4 and Year 8 students on the Attitude to Reading scale was 13 scale score units.

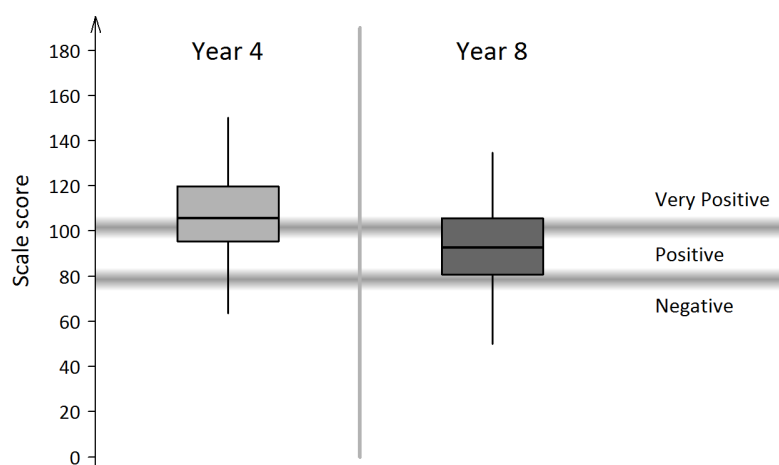


Figure 4.3 Distribution of Year 4 and Year 8 students' scores on the Attitude to Reading scale

Figures 4.4 and 4.5 show the Attitude to Reading scale score distributions by gender and ethnicity for Year 4 and Year 8 students, respectively. On average, at both year levels, boys tended to be less positive than girls (by 8 and 10 scale score units at Year 4 and Year 8, respectively). Māori students at Year 8 were less positive on average about reading than non-Māori, while Pasifika students tended to be more positive than non-Pasifika at both year levels.

²⁰ An IRT approach was used to create the scale – see Chapter 2.

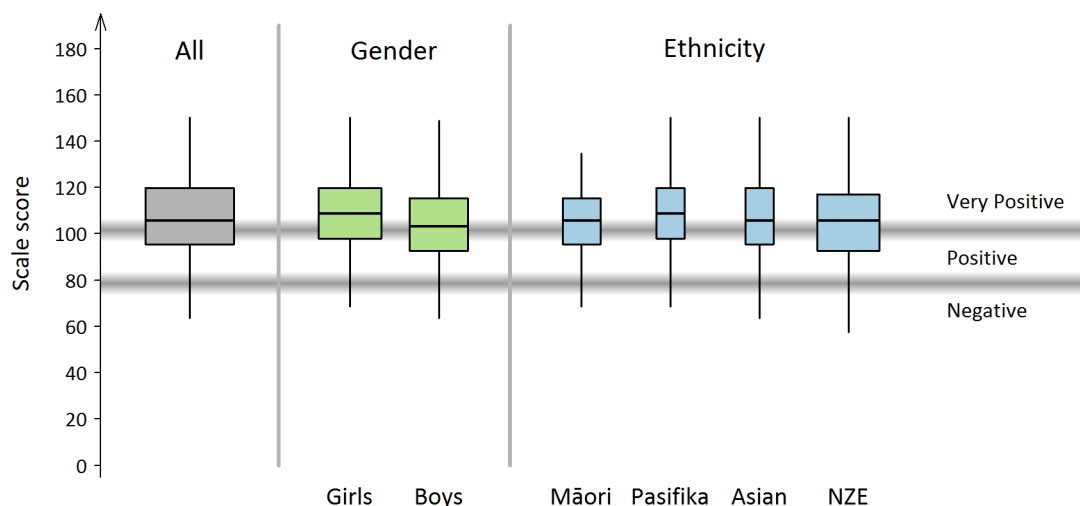


Figure 4.4 Distribution of Year 4 students' scores on the Attitude to Reading scale, by gender and ethnicity (NZE = NZ European)

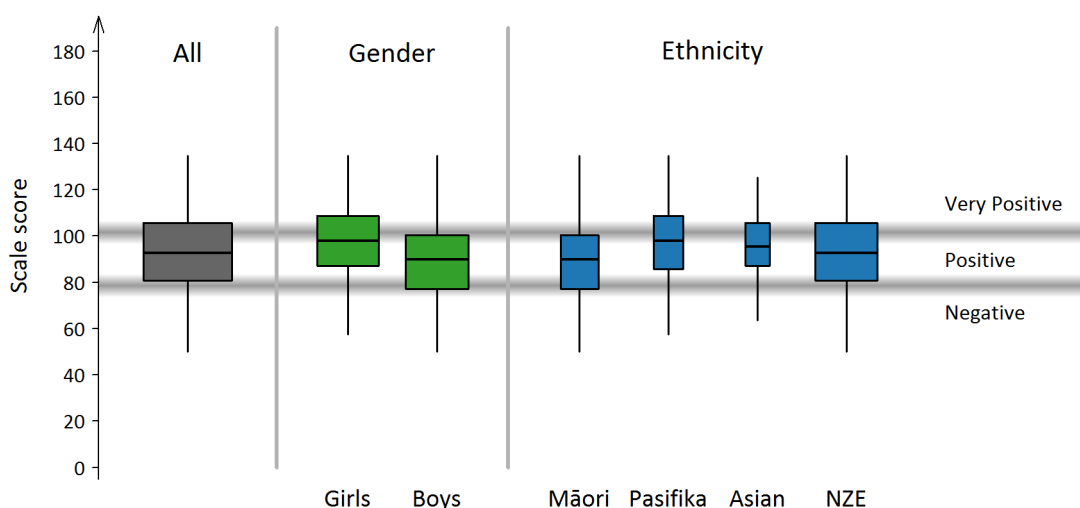


Figure 4.5 Distribution of Year 8 students' scores on the Attitude to Reading scale, by gender and ethnicity (NZE = NZ European)

Attitudes to reading for students with special education needs

Figures 4.6 and 4.7 show how Year 4 and Year 8 students responded to individual attitude statements about reading, according to special education needs. The responses of Year 4 students with special education needs indicated slightly less positive attitudes overall than those shown by the group with no special education needs. At Year 8, the difference between the two groups was more marked, with greater proportions of students with special education needs responding 'do not agree at all', than students with no special education needs. However, the proportions of Year 8 students who 'totally agree' with the statements were similar for both groups.

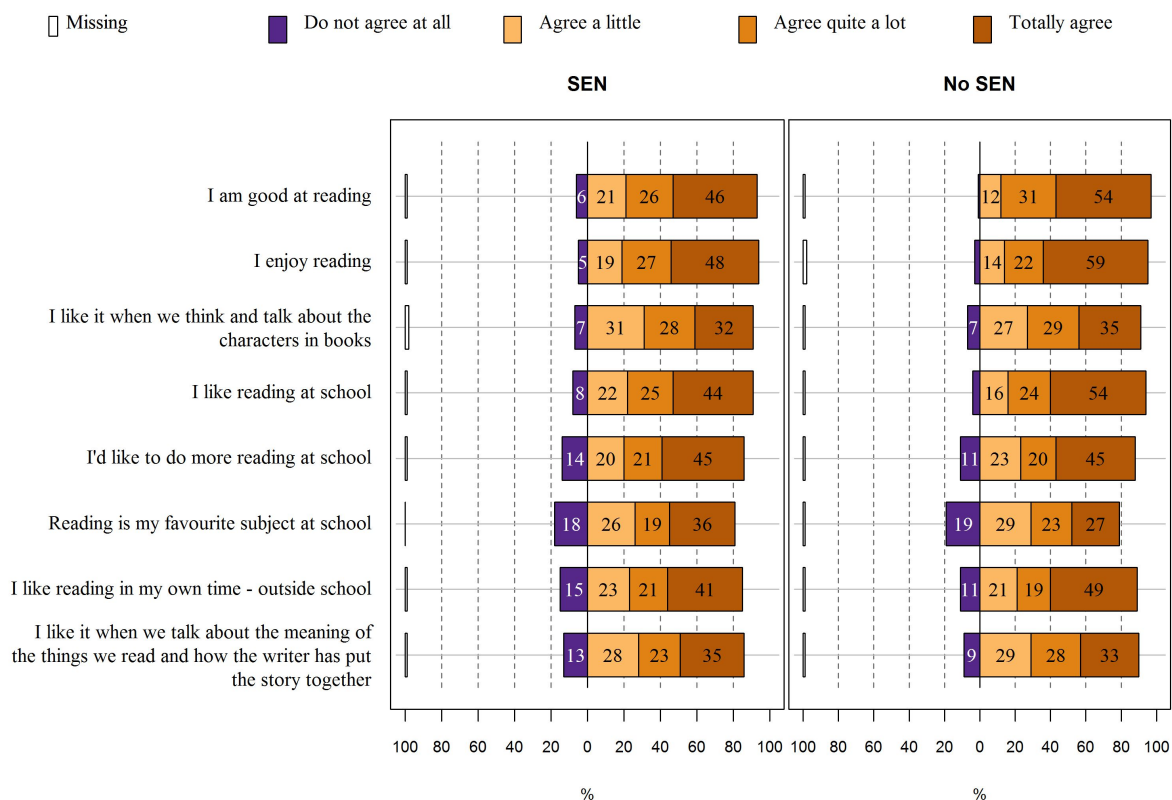


Figure 4.6 Percentage frequency of Year 4 students' responses to individual attitude statements about reading, by special education needs

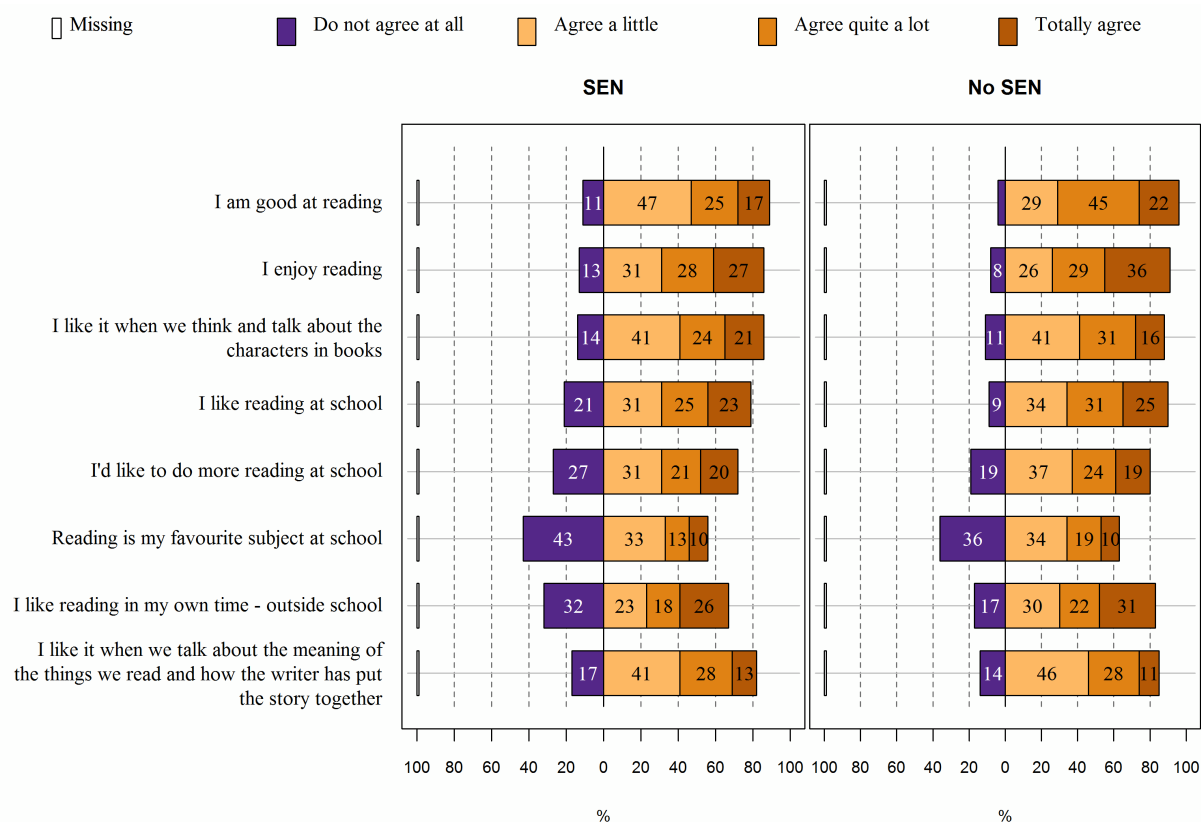


Figure 4.7 Percentage frequency of Year 8 students' responses to individual attitude statements about reading, by special education needs

Figure 4.8 shows the Attitude to Reading scale score distributions for students with special education needs at Year 4 and Year 8. These are compared with the scale score distributions for students with no special education needs. Overall, students with special education needs responded positively to questions regarding their attitudes to reading. The difference between the average scores on the Attitude to Reading scale for students with special education needs and students with no special education needs was not statistically significant at Year 4 or Year 8, although students with special education needs did score slightly lower on average at both year levels (105 compared with 107 scale score units at Year 4 and 88 compared with 93 scale score units at Year 8).

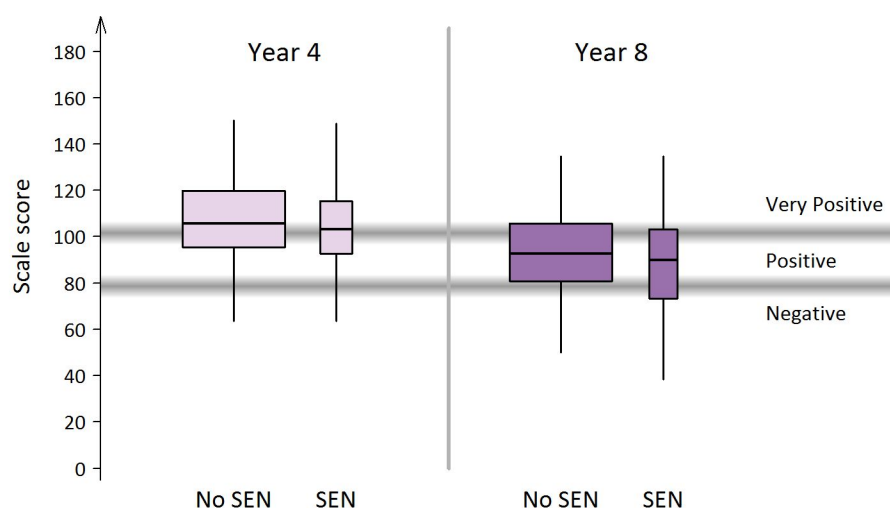


Figure 4.8 Distribution of Year 4 and Year 8 students' scores on the Attitude to Reading scale, by special education needs

2. Relationship between achievement and Attitude to Reading scale

A weak positive correlation between Attitude to Reading and KARE scale scores was evident for Year 4 students ($r = 0.20, p < .05$). At Year 8, the correlation was slightly stronger ($r = 0.34, p < .05$).

Figures 4.9 and 4.10 show the relationship between attitudes and achievement by using the very positive, positive and negative regions of the Attitude to Reading scale to form three attitude groupings. At both year levels, the average difference in achievement between students who scored in the negative and very positive Attitude to Reading groups was about 15 scale score units on the KARE scale (an effect size of about 0.75).

The PIRLS 2010/11²¹ study involving Year 5 students also found an association between positive attitudes towards reading and reading achievement. Students who scored more highly on the PIRLS' Students Like Reading scale on average scored higher on the PIRLS assessment of reading than other students. In PISA 2009²², the 25 percent of New Zealand 15-year-olds who reported the greatest enjoyment of reading scored much higher on average than the 25 percent of students who enjoyed reading the least. The difference in average scores between these groups was equivalent to about 1 year of schooling.

²¹ Chamberlain, M. (2013). *PIRLS 2010/11 in New Zealand: An overview of findings from the third cycle of the Progress in international Reading Literacy Study (PIRLS)*. Retrieved from Education Counts: https://www.educationcounts.govt.nz/_data/assets/pdf_file/0020/125057/PIRLS-2010-11-in-NZ-An-overview-of-findings-from-the-3rd-cycle-of-PIRLS.pdf

²² Teleford, M. (2013). *PISA 2009 Reading to Learn: New Zealand 15-year-olds' reading habits, learning approaches and experiences of teaching practices*. Retrieved from Education Counts: http://www.educationcounts.govt.nz/publications/numeracy/PISA-2009/PISA_2009_Reading_to_Learn

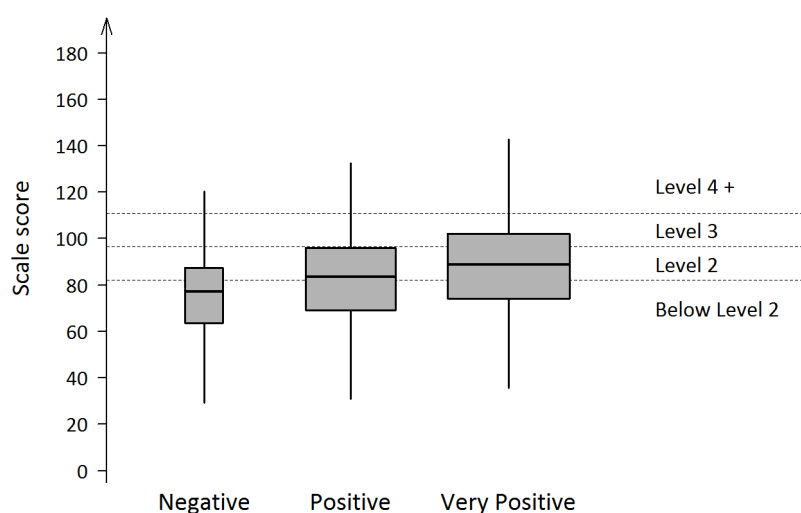


Figure 4.9 Distribution of Year 4 students' achievement scores, by level on the Attitude to Reading scale

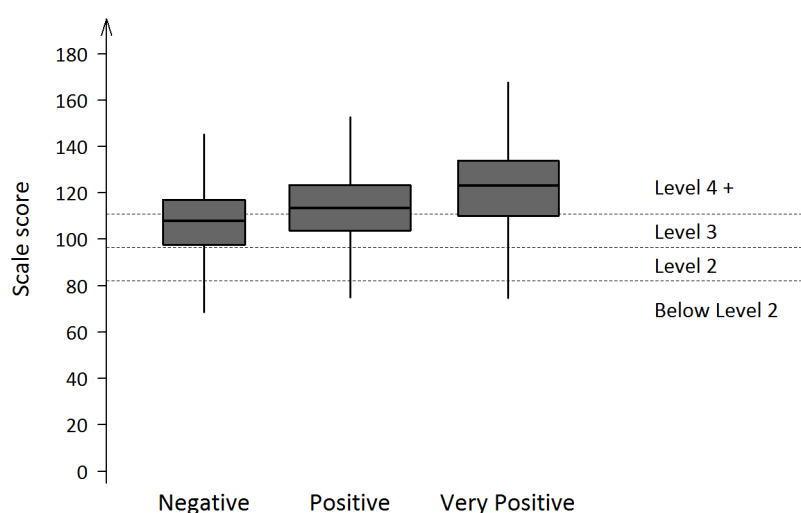


Figure 4.10 Distribution of Year 8 students' achievement scores, by level on the Attitude to Reading scale

3. Reading opportunities and experiences at school

Another section of the student questionnaire asked students about their reading opportunities and experiences at school. Students rated how often they were involved in each of a range of opportunities using a 4-point scale: 'never', 'sometimes', 'often' and 'very often'. Figures 4.11 and 4.12 show how boys and girls at each year level responded to each statement. Overall, Year 8 students reported slightly less frequent involvement than Year 4 students in most of the activities. Boys' and girls' responses were fairly similar at each year level. At Year 4, boys were more likely than girls to report 'never' having some of these experiences. At both year levels and for both genders, the item to which the greatest proportions of students responded 'never' was, 'The things we read in class are about people like me and my family/whānau'.

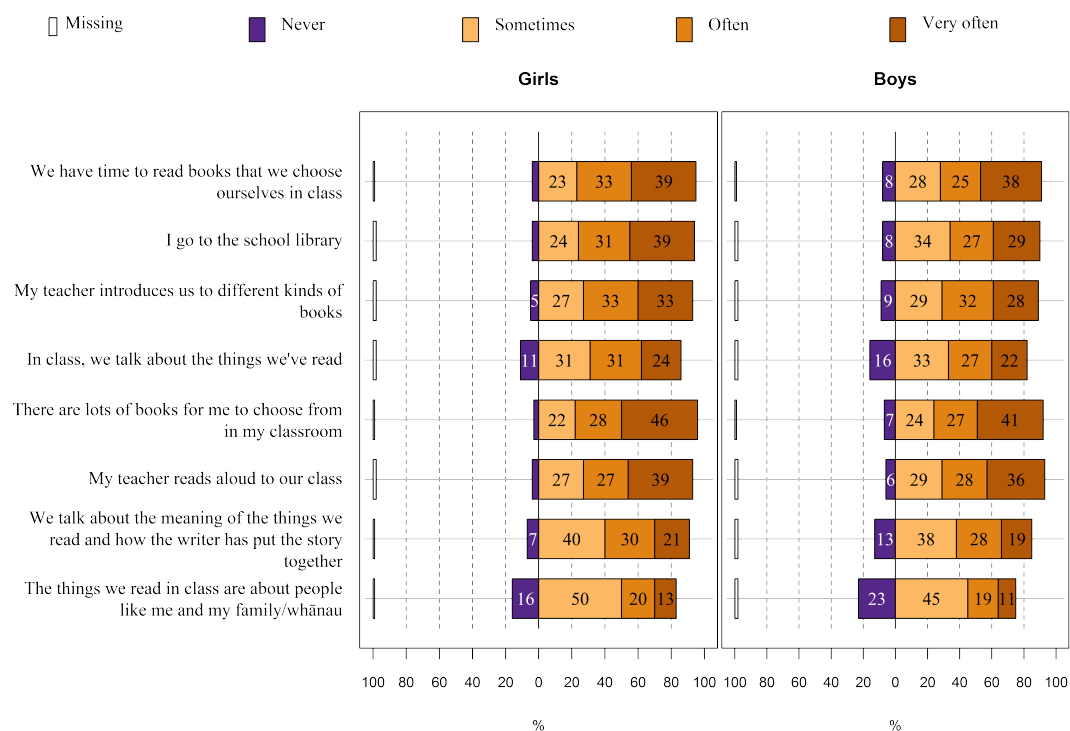


Figure 4.11 Frequency of reading opportunities and experiences reported by Year 4 students

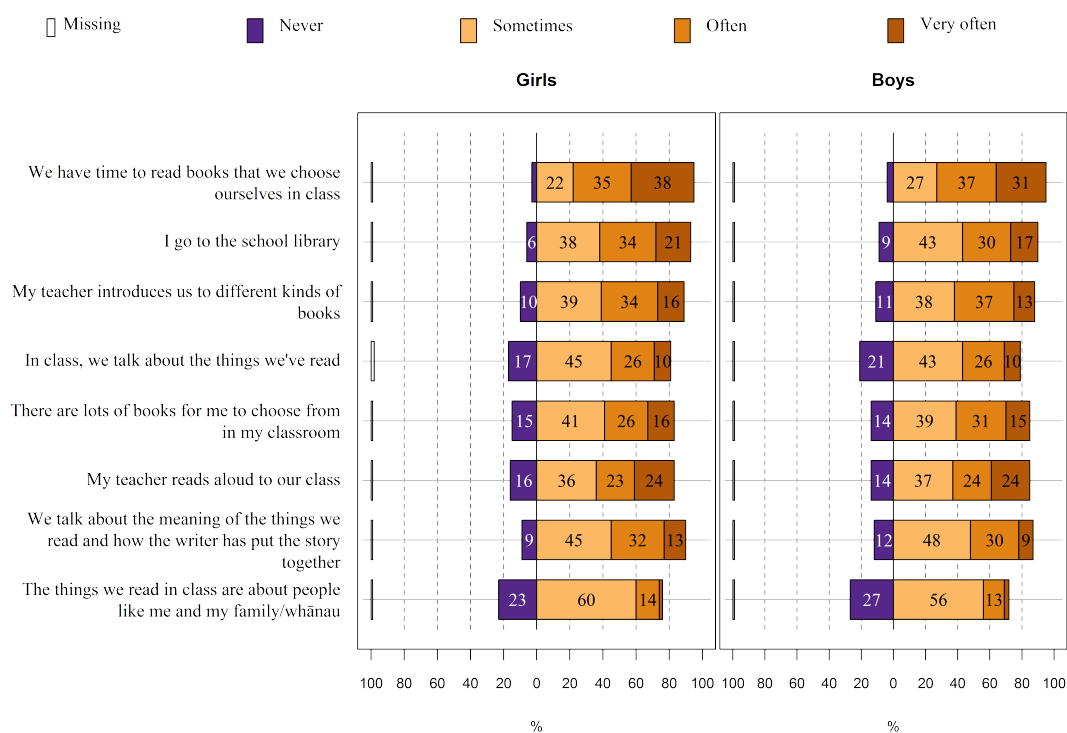


Figure 4.12 Frequency of reading opportunities and experiences reported by Year 8 students

4. Relationship between achievement and opportunities to learn in English: reading

The relationship between student-reported opportunities to learn and achievement on the KARE scale was examined by calculating correlations between the responses to each statement and achievement scores. All correlations were close to zero. The greatest correlation between responses to an opportunity-to-learn item and achievement on the KARE scale was for the statement, 'I go to the school library' ($r = 0.15, p < 0.05$).

5. Reading in your own time

Students in Year 8 were asked how much reading they did in their own time (when not at school). The students responded by selecting from the following scale: 'none or very little', 'up to an hour a week', '1 to 2 hours a week', '2 to 5 hours a week' and 'more than 5 hours a week'.

Overall, boys reported that they spent less time than girls reading in their own time (see Figure 4.13). Boys were more likely than girls to report no or very little reading (23 percent compared with 14 percent, respectively). Māori students were more likely than non-Māori students to report that they did no or very little reading (27 percent compared with 16 percent, respectively). Twenty-nine percent of students with special education needs indicated they did little or no reading, compared with 18 percent of students with no special education needs.

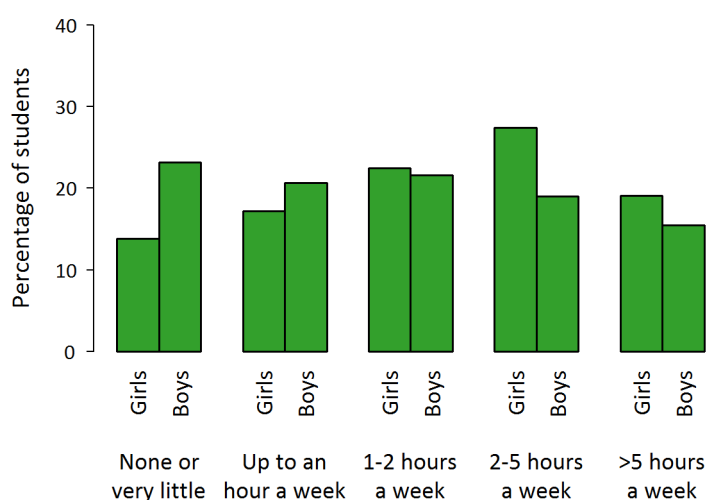


Figure 4.13 Percentage frequency of Year 8 students' responses to: 'How much reading do you do in your own time (when not at school)?', by gender

Relationship between reading in your own time and achievement

Figure 4.14 shows the distributions of achievement on the KARE scale associated with each of the response categories for the question about reading in your own time. Students who selected ‘more than 5 hours a week’ scored about 20 scale score units higher on average than students who reported that they did no or very little reading (an effect size of about 1.0). This score difference was similar across the decile groupings. The correlation between responses to this question and achievement was 0.41 ($p < 0.05$).

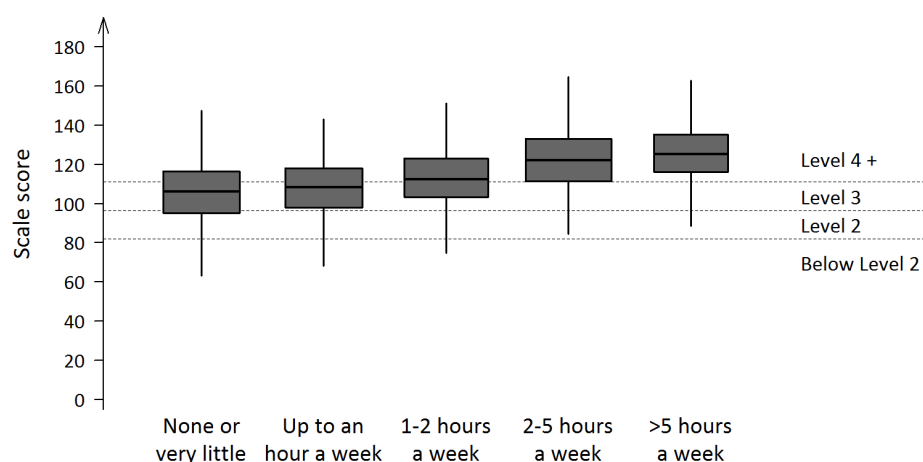


Figure 4.14 Distribution of Year 8 students' scores on the Knowledge and Application of Reading in English assessment, by response categories, for: 'How much reading do you do in your own time (when not at school)?'

6. Summary

Students in Year 4 and Year 8 held generally positive attitudes towards reading. On average, girls tended to be more positive than boys. Māori students at Year 8 were less positive on average about reading than non-Māori. Overall, students with special education needs were slightly less positive about reading on average than students with no special education needs at both year levels.

There was a weak positive correlation between Attitude to Reading scores and achievement on the KARE scale at Year 4. The correlation was slightly stronger at Year 8.

In general, students reported frequent involvement in a range of reading opportunities and experiences at school including: going to the school library; having access to books and time to read in class; listening to the teacher read aloud; and being introduced to new books. Students reported that reading things in class that were about people like themselves and their family/whānau happened less frequently than the other reading opportunities and experiences.

Overall, boys reported spending less of their own time reading than girls and were more likely than girls to indicate that they did no or little reading in their own time. Māori students were more likely than non-Māori students to report that they did no or very little reading in their own time, as were students with special education needs compared with students with no special education needs.

Higher levels of achievement on the KARE assessment were associated with more time spent reading in students' own time.

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Table A1.1 Achievement on the KARE scale: Summary statistics for Year 4 students

Group	Actual sample size	Effective sample size	Mean	Confidence interval for the mean	Standard deviation
All	2,174	1,457	86	(84.5, 86.5)	21
Gender					
Girls	1159	777	89	(87.0, 90.0)	21
Boys	1,015	680	82	(80.5, 83.5)	21
Ethnicity					
Māori	482	323	78	(75.5, 80.0)	21
Non-Māori	1,692	1,134	88	(86.5, 89.0)	21
Pasifika	271	182	76	(73.0, 78.5)	19
Non-Pasifika	1,903	1,275	87	(86.0, 88.0)	21
Asian	267	179	89	(86.0, 92.0)	20
Non-Asian	1,907	1,278	85	(84.0, 86.5)	22
NZE	1,310	878	89	(87.5, 90.0)	21
Non-NZE	864	579	81	(79.0, 82.5)	21
Decile band					
Low decile	592	397	76	(74.0, 78.0)	20
Mid decile	693	464	85	(83.5, 87.5)	21
High decile	889	596	92	(90.5, 94.0)	20
School type					
Contributing school	1,401	939	86	(84.5, 87.5)	22
Full primary school	700	469	85	(83.0, 86.5)	21
Composite school (Years 1–15)	73	49	88	(82.5, 94.0)	20
Special education needs					
No SEN	1,982	1,328	87	(86.5, 88.5)	21
On referral for SEN	18	12	57	(43.5, 71.5)	25
Moderate SEN	166	111	68	(64.0, 71.5)	20
High SEN	7	5	72	(56.0, 87.5)	17
SEN (combined)	191	128	67	(63.5, 70.5)	21

Table A1.2 Achievement on the KARE scale: Summary statistics for Year 8 students

Group	Actual sample size	Effective sample size	Mean	Confidence interval for the mean	Standard deviation
All	2,190	1,467	114	(113.5, 115.5)	19
Gender					
Girls	1,074	720	118	(116.5, 119.0)	17
Boys	1,116	748	111	(110.0, 112.5)	19
Ethnicity					
Māori	478	320	108	(106.0, 110.0)	18
Non-Māori	1,712	1,147	116	(115.0, 117.5)	18
Pasifika	291	195	106	(103.5, 108.0)	17
Non-Pasifika	1,899	1,272	116	(114.5, 117.0)	18
Asian	207	139	113	(110.5, 116.0)	16
Non-Asian	1,983	1,329	115	(113.5, 115.5)	19
NZE	1,296	868	118	(117.0, 119.5)	18
Non-NZE	894	599	109	(107.5, 110.5)	18
Decile band					
Low decile	386	259	106	(104.5, 108.5)	17
Mid decile	927	621	113	(111.5, 114.5)	19
High decile	877	588	120	(118.0, 121.0)	17
School type					
Full primary school	691	463	114	(112.5, 116.0)	18
Intermediate school	1,119	750	114	(113.0, 115.5)	19
Secondary school (Years 7–15)	250	168	113	(110.5, 116.5)	20
Composite school (Years 1–15 & 7–10)	130	87	119	(115.0, 122.5)	18
Special education needs					
No SEN	2,040	1,367	116	(115.0, 117.0)	18
On referral for SEN	7	5	99	(86.0, 113.0)	15
Moderate SEN	135	90	95	(91.5, 99.0)	19
High SEN	7	5	92	(69.0, 116.0)	26
SEN (combined)	149	100	95	(91.5, 99.0)	19

Table A1.3 Achievement on the KARE scale: Differences between subgroup means for Year 4 students

Subgroup 1	Subgroup 1 effective sample size	Subgroup 2	Subgroup 2 effective sample size	Difference in means	Confidence interval for difference in means	Effect size
Gender						
Girls	777	Boys	680	7	(4.5, 9.0)	0.31
Ethnicity						
Māori	323	Non-Māori	1,134	-10	(-12.5, -7.0)	-0.46
Pasifika	182	Non-Pasifika	1,275	-11	(-14.0, -8.5)	-0.53
Asian	179	Non-Asian	1,278	4	(0.5, 7.0)	0.18
NZE	878	Non-NZE	579	8	(6.0, 10.5)	0.39
Decile band						
High decile	596	Mid decile	464	7	(4.5, 9.5)	0.34
High decile	596	Low decile	397	16	(14.0, 19.0)	0.82
Mid decile	464	Low decile	397	9	(6.5, 12.0)	0.45
School type						
Composite school (Years 1–15)	49	Contributing school	939	3	(-3.5, 8.5)	0.12
Composite school (Years 1–15)	49	Full primary school	469	4	(-2.0, 10.0)	0.18
Contributing school	939	Full primary school	469	1	(-1.0, 3.5)	0.06
Special education needs						
No SEN	1,328	SEN (combined)	128	20	(16.5, 24.0)	0.99

Table A1.4 Achievement on the KARE scale: Differences between subgroup means for Year 8 students

Subgroup 1	Subgroup 1 effective sample size	Subgroup 2	Subgroup 2 effective sample size	Difference in means	Confidence interval for difference in means	Effect size
Gender						
Girls	720	Boys	748	7	(5.0, 8.5)	0.36
Ethnicity						
Māori	320	Non-Māori	1,147	-8	(-10.5, -6.0)	-0.45
Pasifika	195	Non-Pasifika	1,272	-10	(-12.5, -7.5)	-0.54
Asian	139	Non-Asian	1,329	-1	(-4.5, 1.5)	-0.08
NZE	868	Non-NZE	599	9	(7.0, 11.0)	0.50
Decile band						
High decile	588	Mid decile	621	7	(4.5, 8.5)	0.37
High decile	588	Low decile	259	13	(10.5, 15.5)	0.77
Mid decile	621	Low decile	259	7	(4.0, 9.0)	0.36
School type						
Composite school (Years 1–15 & 7–10)	87	Full primary school	463	4	(0.5, 8.5)	0.25
Composite school (Years 1–15 & 7–10)	87	Intermediate school	750	4	(0.5, 8.5)	0.24
Composite school (Years 1–15 & 7–10)	87	Secondary school (Years 7–15)	168	5	(0.5, 10.0)	0.27
Full primary school	463	Intermediate school	750	0	(-2.0, 2.0)	0.00
Full primary school	463	Secondary school (Years 7–15)	168	1	(-2.5, 4.0)	0.04
Intermediate school	750	Secondary school (Years 7–15)	168	1	(-2.5, 4.0)	0.04
Special education needs						
No SEN	1,367	SEN (combined)	100	21	(17.0, 24.5)	1.16

Table A1.5 Achievement on the KARE scale: Differences between means for Year 4 and Year 8 by subgroup

Group	Year 8 effective sample size	Year 4 effective sample size	Difference in means	Confidence interval for difference in means	Effect size
All	1,467	1,457	29	(27.5, 30.5)	1.44
Gender					
Girls	720	777	29	(27.0, 31.0)	1.50
Boys	748	680	29	(27.0, 31.0)	1.45
Ethnicity					
Māori	320	323	30	(27.0, 33.0)	1.56
Pasifika	195	182	30	(26.5, 33.5)	1.71
Asian	139	179	24	(20.5, 28.0)	1.33
NZE	868	878	29	(27.5, 31.0)	1.50
Decile band					
Low decile	259	397	30	(27.5, 33.5)	1.60
Mid decile	621	464	28	(25.0, 30.0)	1.38
High decile	588	596	27	(25.0, 29.5)	1.48
Special education needs					
No SEN	1,367	1,328	28	(27.0, 30.0)	1.48
On referral for SEN	5	12	42	(22.5, 61.5)	1.83
Moderate SEN	90	111	27	(22.0, 33.0)	1.41
High SEN	5	5	21	(-7.5, 49.0)	0.94
SEN (combined)	100	128	28	(23.0, 33.5)	1.42

Table A1.6 KARE Curriculum Levels: Year 4 students

Group	Actual sample size	Effective sample size	Percentage of students at <L2	Confidence interval for <L2 percentage	Percentage of students at L2	Confidence interval for L2 percentage	Percentage of students at L3	Confidence interval for L3 percentage	Percentage of students at L4+	Confidence interval for L4+ percentage
All	2,174	1,457	41%	(39.0%, 44.0%)	29%	(27.0%, 31.5%)	18%	(16.0%, 20.0%)	11%	(10.0%, 13.0%)
Gender										
Girls	1,159	777	35%	(32.0%, 38.5%)	30%	(26.5%, 33.0%)	20%	(17.5%, 23.0%)	14%	(12.0%, 17.0%)
Boys	1,015	680	48%	(44.5%, 52.0%)	28%	(25.0%, 31.5%)	16%	(13.0%, 18.5%)	8%	(6.0%, 10.0%)
Ethnicity										
Māori	482	323	57%	(51.5%, 62.5%)	25%	(20.0%, 29.5%)	13%	(9.0%, 16.5%)	5%	(3.0%, 8.0%)
Non-Māori	1,692	1,134	37%	(34.0%, 39.5%)	30%	(27.5%, 33.0%)	20%	(17.5%, 22.0%)	13%	(11.0%, 15.0%)
Pasifika	271	182	61%	(54.0%, 68.0%)	28%	(21.5%, 34.5%)	8%	(4.0%, 11.5%)	3%	(0.5%, 6.0%)
Non-Pasifika	1,903	1,275	39%	(36.0%, 41.0%)	29%	(27.0%, 32.0%)	20%	(17.5%, 22.0%)	13%	(10.5%, 14.5%)
Asian	267	179	34%	(27.0%, 40.5%)	35%	(28.0%, 42.0%)	20%	(14.5%, 26.0%)	11%	(6.5%, 16.0%)
Non-Asian	1,907	1,278	42%	(39.5%, 45.0%)	28%	(26.0%, 31.0%)	18%	(15.5%, 20.0%)	11%	(9.5%, 13.0%)
NZE	1,310	878	34%	(31.0%, 37.0%)	31%	(27.5%, 33.5%)	21%	(18.5%, 24.0%)	14%	(11.5%, 16.5%)
Non-NZE	864	579	52%	(48.5%, 56.5%)	27%	(23.0%, 30.5%)	13%	(10.5%, 16.0%)	7%	(5.5%, 9.5%)
Decile band										
Low decile	592	397	62%	(57.0%, 67.0%)	23%	(19.0%, 27.5%)	11%	(8.0%, 14.0%)	4%	(2.0%, 5.5%)
Mid decile	693	464	40%	(36.0%, 45.0%)	32%	(27.5%, 36.0%)	18%	(14.0%, 21.0%)	10%	(7.5%, 13.0%)
High decile	889	596	28%	(24.5%, 32.0%)	31%	(27.5%, 35.0%)	23%	(20.0%, 26.5%)	17%	(14.5%, 20.5%)
School type										
Composite school (Years 1–15)	73	49	38%	(24.5%, 52.0%)	25%	(12.5%, 36.5%)	22%	(10.5%, 33.5%)	15%	(5.0%, 25.0%)
Contributing school	1,401	939	41%	(37.5%, 44.0%)	29%	(26.0%, 31.5%)	19%	(16.5%, 21.5%)	12%	(9.5%, 14.0%)
Full primary school	700	469	43%	(38.5%, 47.5%)	30%	(26.0%, 34.5%)	16%	(13.0%, 20.0%)	10%	(7.5%, 13.0%)
Special education needs										
SEN (combined)	191	128	76%	(69.0%, 84.0%)	15%	(9.0%, 21.5%)	8%	(3.0%, 12.5%)	1%	(-0.5%, 2.0%)
No SEN	1,982	1,328	38%	(35.5%, 40.5%)	30%	(28.0%, 33.0%)	19%	(17.0%, 21.0%)	12%	(10.5%, 14.0%)

Table A1.7 KARE Curriculum Levels: Year 8 students

Group	Actual sample size	Effective sample size	Percentage of students at <L2	Confidence interval for <L2 percentage	Percentage of students at L2	Confidence interval for L2 percentage	Percentage of students at L3	Confidence interval for L3 percentage	Percentage of students at L4+	Confidence interval for L4+ percentage
All	2,190	1,467	4%	(3.5%, 5.5%)	11%	(9.0%, 12.0%)	26%	(24.0%, 28.5%)	59%	(56.0%, 61.0%)
Gender										
Girls	1,074	720	2%	(1.0%, 3.5%)	7%	(5.0%, 9.0%)	25%	(22.0%, 28.5%)	65%	(62.0%, 69.0%)
Boys	1,116	748	6%	(4.5%, 8.0%)	14%	(11.5%, 16.5%)	28%	(24.5%, 31.0%)	52%	(48.5%, 55.5%)
Ethnicity										
Māori	478	320	8%	(5.0%, 10.5%)	16%	(12.0%, 20.0%)	32%	(27.0%, 37.0%)	44%	(39.0%, 50.0%)
Non-Māori	1,712	1,147	3%	(2.5%, 4.5%)	9%	(7.5%, 10.5%)	25%	(22.5%, 27.5%)	63%	(60.0%, 65.5%)
Pasifika	291	195	7%	(3.5%, 11.0%)	22%	(16.0%, 27.5%)	34%	(27.5%, 41.0%)	37%	(30.0%, 43.5%)
Non-Pasifika	1,899	1,272	4%	(3.0%, 5.0%)	9%	(7.0%, 10.5%)	25%	(23.0%, 27.5%)	62%	(59.5%, 64.5%)
Asian	207	139	2%	(-0.0%, 5.0%)	9%	(4.5%, 14.0%)	33%	(25.0%, 40.5%)	56%	(47.5%, 64.0%)
Non-Asian	1,983	1,329	5%	(3.5%, 5.5%)	11%	(9.0%, 12.5%)	26%	(23.5%, 28.0%)	59%	(56.5%, 61.5%)
NZE	1,296	868	3%	(1.5%, 4.0%)	7%	(5.5%, 9.0%)	22%	(19.5%, 25.0%)	68%	(64.5%, 71.0%)
Non-NZE	894	599	7%	(5.0%, 9.0%)	15%	(12.5%, 18.0%)	33%	(29.0%, 36.5%)	45%	(41.5%, 49.5%)
Decile band										
Low decile	386	259	9%	(6.0%, 13.0%)	18%	(13.0%, 22.5%)	32%	(26.5%, 38.0%)	41%	(35.0%, 47.0%)
Mid decile	927	621	5%	(3.5%, 7.0%)	12%	(9.5%, 14.5%)	27%	(24.0%, 31.0%)	56%	(52.0%, 59.5%)
High decile	877	588	1%	(0.5%, 2.5%)	6%	(4.0%, 8.0%)	23%	(19.5%, 26.5%)	70%	(66.0%, 73.5%)
School type										
Composite school (Years 1–15 & 7–10)	130	87	2%	(-1.0%, 5.5%)	9%	(3.0%, 15.5%)	22%	(13.0%, 30.0%)	67%	(57.0%, 77.0%)
Full primary school	691	463	4%	(2.5%, 6.0%)	9%	(6.5%, 12.0%)	29%	(24.5%, 33.0%)	58%	(53.0%, 62.0%)
Intermediate school	1,119	750	4%	(3.0%, 5.5%)	11%	(9.0%, 13.5%)	26%	(23.0%, 29.5%)	59%	(55.0%, 62.0%)
Secondary school (Years 7–15)	250	168	6%	(2.5%, 10.0%)	12%	(7.0%, 17.0%)	24%	(17.0%, 30.0%)	58%	(50.5%, 65.5%)
Special education needs										
SEN (combined)	149	100	20%	(12.5%, 28.0%)	34%	(24.5%, 43.0%)	26%	(17.5%, 35.0%)	20%	(12.5%, 28.0%)
No SEN	2,040	1,367	3%	(2.5%, 4.0%)	9%	(7.5%, 10.5%)	26%	(24.0%, 29.0%)	61%	(59.0%, 64.0%)

Table A1.8 Attitude to Reading: Summary statistics for Year 4 students

Group	Actual sample size	Effective sample size	Mean	Confidence interval for the mean	Standard deviation
All	2,172	1,455	107	(106.0, 108.0)	20
Gender					
Girls	1,158	776	111	(109.5, 112.0)	19
Boys	1,014	679	103	(101.5, 104.5)	20
Ethnicity					
Māori	480	322	107	(105.5, 109.5)	18
Non-Māori	1,692	1,134	107	(106.0, 108.0)	20
Pasifika	268	180	110	(107.5, 113.0)	19
Non-Pasifika	1,904	1,276	107	(105.5, 108.0)	20
Asian	267	179	109	(106.0, 111.5)	19
Non-Asian	1,905	1,276	107	(106.0, 108.0)	20
NZE	1,311	878	106	(105.0, 107.5)	20
Non-NZE	861	577	109	(107.0, 110.0)	19
Decile band					
Low decile	589	395	110	(108.0, 111.5)	19
Mid decile	694	465	107	(105.0, 108.5)	20
High decile	889	596	106	(104.0, 107.5)	20
School type					
Contributing school	1,399	937	107	(106.0, 108.5)	20
Full primary school	700	469	106	(104.5, 108.0)	19
Composite school (Years 1–15)	73	49	113	(107.5, 119.0)	21
Special education needs					
No SEN	1,979	1,326	107	(106.5, 108.5)	19
On referral for SEN	18	12	102	(91.5, 111.5)	18
Moderate SEN	167	112	105	(101.5, 109.5)	23
High SEN	7	5	107	(88.5, 126.0)	21
SEN (combined)	192	129	105	(101.5, 109.0)	22

Table A1.9 Attitude to Reading: Summary statistics for Year 8 students

Group	Actual sample size	Effective sample size	Mean	Confidence interval for the mean	Standard deviation
All	2,186	1,465	93	(92.0, 94.0)	20
Gender					
Girls	1,071	718	97	(95.0, 98.0)	20
Boys	1,115	747	89	(87.5, 90.5)	20
Ethnicity					
Māori	478	320	88	(86.0, 90.5)	21
Non-Māori	1,708	1,144	94	(93.0, 95.0)	20
Pasifika	291	195	97	(94.5, 99.5)	18
Non-Pasifika	1,895	1,270	92	(91.0, 93.5)	21
Asian	205	137	95	(92.5, 98.0)	16
Non-Asian	1,981	1,327	93	(91.5, 93.5)	21
NZE	1,294	867	93	(91.0, 94.0)	21
Non-NZE	892	598	93	(91.5, 95.0)	20
Decile band					
Low decile	386	259	95	(92.5, 97.5)	21
Mid decile	927	621	92	(90.0, 93.5)	20
High decile	873	585	93	(91.5, 94.5)	21
School type					
Full primary school	690	462	95	(92.5, 96.5)	21
Intermediate school	1,117	748	92	(90.5, 93.5)	19
Secondary school (Years 7–15)	250	168	93	(89.0, 96.0)	23
Composite school (Years 1–15 & 7–10)	129	86	90	(85.5, 95.0)	22
Special education needs					
No SEN	2,036	1,364	93	(92.0, 94.0)	20
On referral for SEN	7	5	77	(65.0, 89.5)	14
Moderate SEN	135	90	89	(84.0, 93.5)	23
High SEN	7	5	87	(55.0, 118.5)	35
SEN (combined)	149	100	88	(83.5, 93.0)	24

Table A1.10 Student questionnaire – question 5: Reading in own time for Year 8 students

			Question 5: Reading in own time				
Group	Actual sample size	Effective sample size	None or very little	Up to an hour a week	1–2 hours a week	2–5 hours a week	5+ hours a week
All	2,167	1,452	19%	19%	22%	23%	17%
Gender							
Girls	1,064	713	14%	17%	22%	27%	19%
Boys	1,103	739	23%	21%	22%	19%	16%
Ethnicity							
Māori	473	317	27%	22%	21%	19%	11%
Non-Māori	1,694	1,135	16%	18%	22%	24%	19%
Pasifika	284	190	19%	31%	22%	17%	11%
Non-Pasifika	1,883	1,262	18%	17%	22%	24%	18%
Asian	204	137	12%	20%	24%	27%	17%
Non-Asian	1,963	1,315	19%	19%	22%	23%	17%
NZE	1,287	862	17%	16%	23%	26%	19%
Non-NZE	880	590	21%	24%	21%	19%	15%
Decile band							
Low decile	380	255	21%	26%	20%	18%	14%
Mid decile	915	613	21%	20%	21%	23%	16%
High decile	872	584	15%	15%	24%	26%	20%
School type							
Composite school (Years 1–15 & 7–10)	129	86	16%	19%	22%	25%	19%
Full primary school	684	458	18%	19%	21%	23%	19%
Intermediate school	1,107	742	19%	20%	23%	22%	16%
Secondary school (Years 7–15)	247	165	20%	17%	21%	26%	16%
Special education needs							
SEN (combined)	147	98	29%	27%	24%	7%	13%
No SEN	2,019	1,353	18%	18%	22%	24%	18%

Table A1.11 KARE scale score by Reading in own time for Year 8 students

Reading in own time	Actual sample size	Effective sample size	Mean KARE scale score	Confidence interval for the mean	Standard deviation
None or very little	403	270	105	(103.0, 107.0)	18
Up to an hour a week	411	275	107	(105.5, 109.5)	16
1–2 hours a week	477	320	113	(111.5, 115.0)	16
2–5 hours a week	502	336	121	(119.5, 123.0)	16
5+ hours a week	374	251	125	(123.0, 127.5)	17



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