

SECTION 5:

STUDENTS' READING ATTITUDES AND HOME CONTEXT



This section gives an overview of some of the contextual information PIRLS-05/06 sought from students. Information on students' attitudes towards reading, their views of themselves as readers, and the language(s) they spoke at home are examples of the information gathered from the students taking part in the study. Parents/caregivers also provided information about their child's early childhood education experiences as well as indications of their financial well-being and literacy resources in the home.

How is the information presented?

To summarise the information concisely, students' and parents'/caregivers' responses to sets of questions were often combined to form indices. These indices are more comprehensive (describing a general concept or activity) and more informative than the individual results for component questions. To help interpret each index, students are placed, according to their or their parents'/caregivers' responses, into one of three categories: high, medium, or low. The high level of each index corresponds to positive conditions or good educational practice and high reading achievement.

Despite a lower response rate from parents/caregivers in 2006/2006 than in 2001, the information does provide a good indication of Year 5 students' early literacy experiences and their home context at the time PIRLS was administered in 2005. However, comparisons with 2001 are limited to the reports of students rather than those of the parents/caregivers.³¹

Students' attitudes towards reading

Children who enjoy and value reading are likely to read more frequently and read a wider range of material than those who get little pleasure from reading. In turn, they are enhancing both their comprehension skills and learning experiences.

In order to gauge how positive students are in their attitudes towards reading, students were asked about their views on reading for enjoyment and their appreciation of books. Students were asked to indicate on a 4-point scale (agree a lot through to disagree a lot) the extent to which they agreed with the following statements related to reading:

- I read only if I have to
- I like talking about books with other people
- I would be happy if someone gave me a book as a present
- I think reading is boring
- I enjoy reading.

The Students' Attitudes Towards Reading (SATR) Index was then used to summarise students' responses to the five statements by averaging their combined responses.³² Students were assigned to three levels on the SATR Index. Students who had positive attitudes towards reading (i.e., responded positively) were placed at the high level of the index. Students who had negative attitudes towards reading (i.e., students who responded negatively) were placed at the low level of the index. The remainder were assigned to the medium level of the index. The international findings pertaining to New Zealand were as follows.

- Year 5 students were relatively positive towards reading, with 48 percent in the high level (about the same as the international mean of 49%) and just 7 percent in the low level (also similar to the international mean of 8%).
- The difference between the mean reading literacy scores for those Year 5 students at the high level of the index and those at the low level was about 70 scale score points.
- The students' views tended to be more moderate in 2005/2006 than in 2001. A significant increase (4 percentage points) at the medium level of the index was accompanied by (non-significant) decreases at both the high (3 percentage points) and low (1 percentage point) levels of the SATR Index.

Reading attitudes and gender

Figure 5.1 shows the proportion of New Zealand Year 5 girls and boys at each level of the SATR Index. Year 5 girls tended to express more positive views about reading than Year 5 boys: 58 percent of girls were at the high level of the SATR Index compared with just 39 percent of boys. The opposite was observed at both the medium level (38% girls and 51% boys) and low level (4% and 10%).

The relationship with reading literacy achievement was somewhat stronger for Year 5 boys than it was for Year 5 girls, with boys at the high level of the index scoring an average of 69 scale score points higher than those Year 5 boys at the low level. The average difference between Year 5 girls at each of the two levels was 59.

³¹Although more than 4,000 parents/caregivers responded to the Home Questionnaire, at 64 percent the *response rate* from New Zealand parents/caregivers in PIRLS-05/06 was less than in PIRLS-01 (84%). In the international report, comparisons have been made for New Zealand with information reported for 2001. In most cases there were no changes in the proportions at each level of the various parent-related indices over the 4-year period.

³²Disagree a lot = 1, disagree a little = 2, agree a little = 3, and agree a lot = 4. Responses for negative statements were reverse coded. Responses for each student were combined and averaged. High level on the index is where the average was greater than 3 through to 4. Medium level indicates an average of 2 through to 3. Low level indicates an average of 1 to less than 2.

Figure 5.1: Year 5 students at each level of the Students' Attitudes Towards Reading (SATR) Index in 2005/2006, by gender



Notes

The mean reading literacy scores for Year 5 students at each level of the SATR Index in 2005/2006 were:

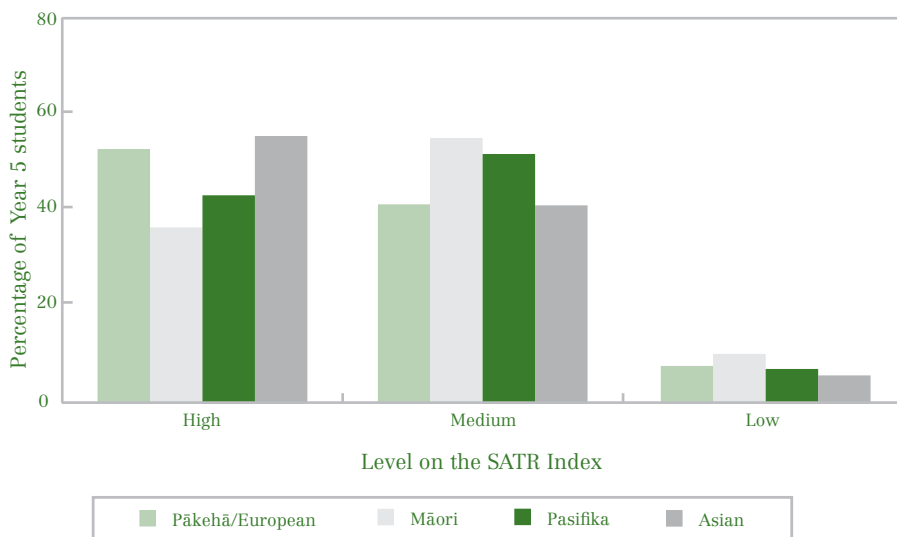
Girls: High 569 (2.5), Medium 514 (3.0), and Low 510 (5.8).

Boys: High 554 (3.9), Medium 503 (3.7), and Low 486 (6.0).

Reading attitudes and ethnicity

Figure 5.2 shows the proportion of Year 5 students from each main ethnic grouping at each level of the SATR Index in 2005/2006. Pākehā/European and Asian students tended to be more positive towards reading than Pasifika and Māori students.

Figure 5.2: Year 5 students at each level of the Students' Attitudes Towards Reading (SATR) Index in 2005/2006, by ethnic grouping



Notes

The mean reading literacy scores for Year 5 students at each level of the SATR Index in 2005/2006 were:

Pākehā/European: High 579 (2.5), Medium 528 (3.5), and Low 503 (5.5).

Māori: High 510 (5.2), Medium 470 (5.0), and Low 479 (11.1).

Pasifika: High 505 (6.7), and Medium 461 (9.0). There were too few observations to report achievement at the Low level.

Asian: High 575 (6.1), and Medium 525 (6.9). There were too few observations to report achievement at the Low level.

Māori students (9%) were also more likely to hold negative views about reading (i.e., at the low level of the SATR Index) than students from the other ethnic groupings.

Interestingly, the relationship between reading literacy achievement and students' attitudes about reading, as measured by the SATR Index, was stronger for Pākehā/European than for Māori students. The difference between the mean achievement of Pākehā/European students at the high level of the SATR Index and those at the low level was 75 scale score points, compared with a difference of 30 scale score points for Māori students.³³

Looking at gender and ethnicity together, it was apparent that the gender pattern shown in Figure 5.1 was also evident within each ethnic grouping. That is, girls in each ethnic grouping were more likely to be at the high level of the SATR Index than their male counterparts.

Any change between 2001 and 2005/2006?

The change apparent for New Zealand from 2001 to 2005/2006 was largely due to the changes for Year 5 boys. That is, Year 5 boys in 2005/2006 tended to hold more moderate views than their 2001 male counterparts. A significant 5 percentage point increase in the proportion of boys at the medium level (46% to 51%) was accompanied by non-significant decreases from 2001 to 2005/2006 at the high and low levels of the index. There were no corresponding changes for Year 5 girls over the period.

Māori students tended to hold more moderate views in 2005/2006 than in 2001, recording a significant decrease of 8 percentage points in the proportion at the high level of the SATR Index (from 44% in 2001 to 36% in 2005/2006), along with a corresponding significant 9 percentage point increase at the medium level (45% to 54%).

At 8 percentage points, the decrease at the high level of the index was greater for Māori boys than it was for Māori girls (6). However, when the changes for girls and boys were considered separately they were not found to be statistically significant.

Pākehā/European students' views also tended to be less positive in 2005/2006, although the shifts between the two levels of the index (high to medium) were not found to be of statistical significance. However, looking at the shifts for Pākehā/European girls and boys separately, the decrease in the proportion at the high level of the index was largely due to a significant decrease observed for girls (6 percentage points, c.f. a 3-point decrease for boys).

Asian students were generally more positive (44% to 55%), with the increase from 2001 to 2005/2006 in the proportion of students at the high level statistically significant.³⁴ There were no changes of note found for Pasifika students.

Reading for fun

As children are developing their reading skills, the time they spend on reading in relation to other leisure activities becomes important. Reading as a leisure activity can not only give children enjoyment but it can also provide opportunities to reinforce their literacy skills (Mullis, et al., 2006).

Just over two-fifths (42%) of New Zealand Year 5 students reported they read for fun outside of school every day or almost every day, compared with the international average of 40 percent. About one-quarter of Year 5 students (24%) read once or twice a week, with the remainder (34%) reporting that they rarely or never read for fun. The corresponding international averages were 28 percent and 32 percent. Across countries and within most countries there was a positive association between the frequency of reading for fun and the average reading achievement.

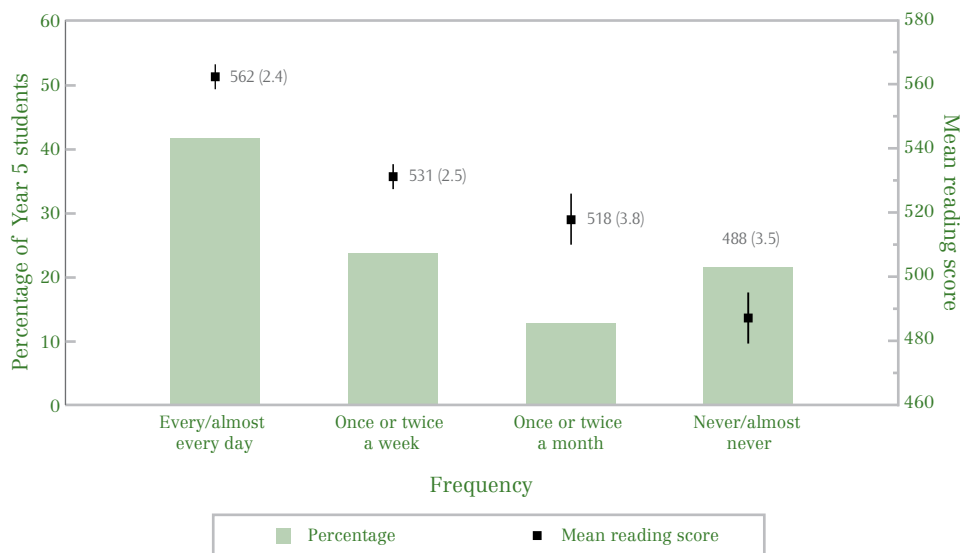
When the group of Year 5 students (34%) who rarely or never read for fun were considered separately, the majority (61%) reported that they *never* read for enjoyment; this equated to 21 percent of all Year 5 students. This percentage of non-readers was marginally higher than the international average (19%) and notably higher than some higher-achieving countries such as Germany (14%) and the Canadian provinces (10-16%). It was, however, lower than the percentage of non-readers in the United States (31%), Scotland (30%), and England (28%).

³³ There were too few observations ($N < 50$) to calculate the means for Asian and Pasifika students at the low level of the SATR Index.

³⁴ The numbers were too small in 2001 to examine these changes by gender.

Figure 5.3 shows Year 5 students' reports of how often they read for fun out of school regardless of their reading material, and the relationship with their reading literacy achievement. Not surprisingly, the students who read for fun on a regular basis tended to have higher achievement than those who never or almost never read for fun.

Figure 5.3: Year 5 students' reports of reading for fun and their reading literacy scores in 2005/2006



Notes

The bars represent the percentage of Year 5 students in each time.

The data points are the mean reading scores for Year 5 students in each response category. Standard errors appear in parentheses. The vertical lines extending from the data point show the 95 percent confidence interval around the mean (i.e., ± 2 standard errors).

Table 5.1 shows Year 5 students' reports of how often they read for fun out of school, for girls and boys separately and for each ethnic grouping.

Table 5.1: Year 5 students' reports on reading for fun in 2005/2006, by gender and ethnic grouping

Year 5 student group	Students' reports of reading for fun outside of school (%)			
	Every day or almost every day	Once or twice a week	Once or twice a month	Never or almost never
Gender				
Girls	49 (1.2)	25 (1.0)	11 (0.7)	15 (1.0)
Boys	35 (1.3)	23 (0.8)	16 (0.8)	27 (1.0)
Ethnic grouping				
Pākehā/European	45 (1.4)	23 (0.9)	13 (0.6)	19 (1.0)
Māori	34 (1.9)	24 (1.3)	15 (1.4)	28 (1.9)
Pasifika	38 (2.3)	23 (2.1)	14 (2.0)	25 (2.5)
Asian	46 (2.4)	25 (2.1)	14 (1.4)	15 (1.8)
All New Zealand*	42 (1.1)	24 (0.7)	13 (0.5)	21 (0.8)

Notes

Adjusted percentages are reported. Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

* All Year 5 students, including students in Other ethnic groups.

As shown in Table 5.1, about half of Year 5 girls reported they read for fun daily (or almost daily). Although not shown in the table, Asian and Pākehā/European girls (both 53%) tended to be in this category. Although not quite as high as their other female counterparts, about two-fifths of Pasifika girls (42%) and Māori girls (40%) read for fun daily.

Never reading for fun was more frequently reported by Year 5 boys than Year 5 girls; relatively high proportions of Māori and Pasifika also fell into this category. In particular, about one-third of Māori boys and Pasifika boys (both 32%) reported they never read for fun, compared with Pākehā/European boys (25%) and Asian boys (20%).

As noted, reading for fun was associated with achievement. This held for boys, girls, and all ethnic groupings: those students who reported reading for fun at least weekly had significantly higher reading achievement than students who never or rarely read for fun.

The reports about reading for fun by Year 5 students in 2005 were essentially the same as those for their 2001 counterparts.

Students' reading self-concept

"Motivation is affected by the learner's self-concept and sense of self-efficacy" (Ministry of Education, 2006, p. 22). As well as holding positive views about reading, children who are self-assured of their reading ability are likely to read more often and more varied materials.

The Students' Reading Self-Concept (SRSC) Index was developed to investigate students' perceptions of their ability in reading, using their responses to four statements on how well they thought they read. Students were asked to indicate on a 4-point scale (agree a lot through to disagree a lot) their level of agreement to the following statements:

- Reading is very easy for me
- I do not read as well as other students in my class
- When I am reading by myself I understand almost everything I read
- I read more slowly than other students in my class.

Students' responses to the four statements were combined and averaged to construct the SRSC Index.³⁵ Students with a high self-concept in reading (i.e., they responded positively) were placed at the high level of the SRSC Index; those students with a low self-concept in reading (i.e., responded negatively) were placed at the low level of the index. The remainder were assigned to the medium level of the index.

The key results for New Zealand in an international context were as follows.

- The percentage of Year 5 students (36%) who had a high self-concept was below the international mean (49%), and was the fourth-lowest (equal) percentage internationally.³⁶
- The average reading literacy achievement (574) of Year 5 students who viewed themselves very positively was significantly higher than the average for students who held more modest views (513), which in turn was much higher than for students who viewed themselves as weak readers (459).
- New Zealand was one of six countries (another being the United States) that recorded a significant *decrease* from 2001 to 2005/2006 in the proportion of students with high self-concept in reading. Accompanying the decrease was a significant increase at the medium level of the index.

Self-concept and gender

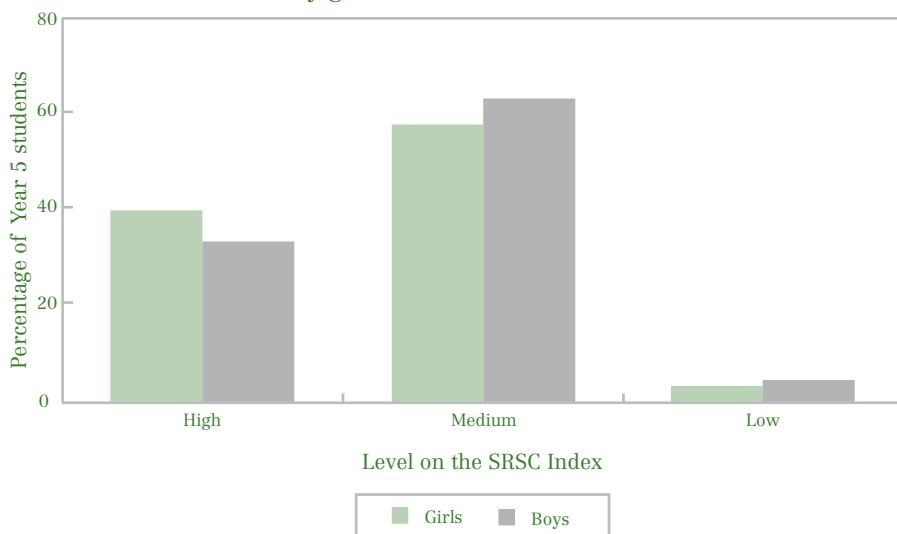
Figure 5.4 shows the percentages of New Zealand's Year 5 girls and boys at each level of the SRSC Index. Consistent with the overall pattern reported for New Zealand, relatively low proportions of both girls and boys perceived themselves as good readers (i.e., 40% and 33% respectively at the high level of the index). Both tended to hold moderate views, boys (63%) more so than girls (58%). Interestingly, Year 5 boys (4%) and girls (3%) were equally likely to report a low self-concept in reading.

The relationship with achievement (i.e., the difference between the mean achievement of students at the high level of the SRSC Index and those at the low level) was more evident for boys (118) than it was for girls (106).

³⁵ Disagree a lot = 1, disagree a little = 2, agree a little = 3, agree a lot = 4. Responses for negative statements were reverse coded. High level on the index is where the average was greater than 3 through to 4. Medium level indicates an average of 2 through to 3. Low level indicates an average of 1 to less than 2.

³⁶ The proportions of New Zealand Year 5 students at the medium and low levels were 60 percent (c.f. 48% internationally) and 4 percent (c.f. 3%) respectively.

Figure 5.4: Year 5 students at each level of the Students' Reading Self-Concept (SRSC) Index in 2005/2006, by gender



Notes

The mean reading literacy scores for Year 5 students at each level of the SRSC Index in 2005/2006 were:

Girls: High 581 (2.6), Medium 524 (2.7), and Low 475 (11.6).

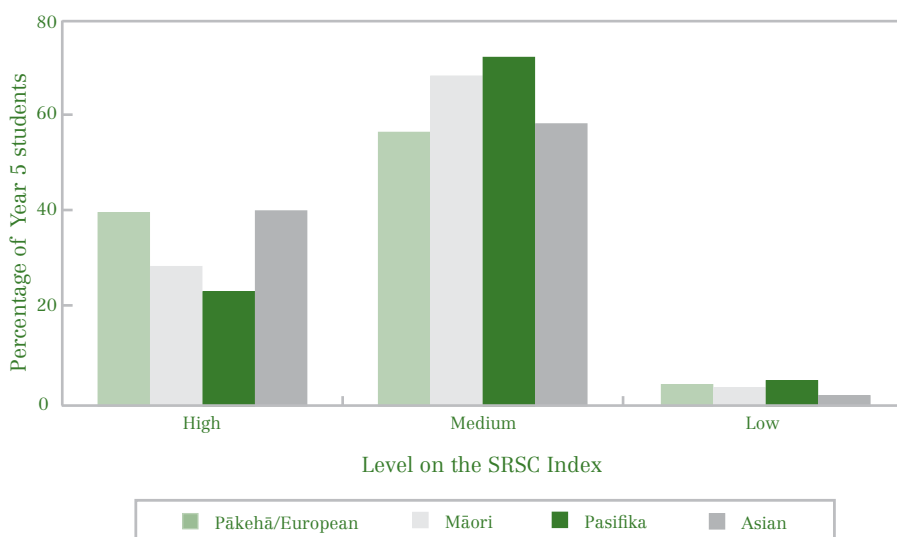
Boys: High 566 (3.2), Medium 503 (3.6), and Low 448 (8.2).

Self-concept and ethnicity

Figure 5.5 shows the percentages of Year 5 girls and boys in each ethnic grouping at each level of the SRSC Index. Proportionately more Pākehā/European and Asian students (both 40%) were found to have a high self-concept of their reading ability than Māori (29%) and Pasifika students (23%). At just 1 percent, Asian students were less likely than students in the other ethnic groupings to have a low self-concept of their reading ability than their counterparts.

The gender pattern observed in Figure 5.4 was also apparent within the ethnic groupings. That is, girls from each ethnic grouping tended to have a high self-concept in reading, with boys from each grouping having more moderate views.

Figure 5.5: Year 5 students at each level of the Students' Reading Self-Concept (SRSC) Index in 2005/2006, by ethnic grouping



Notes

The mean reading literacy scores for Year 5 students at each level of the SRSC Index in 2005/2006 were:

Pākehā/European: High 589 (2.7), Medium 533 (2.9), and Low 468 (5.8).

Māori: High 523 (5.3), Medium 472 (4.5), and Low 433 (12.6).

Pasifika: High 517 (11.0) and Medium 470 (6.1). There were too few observations to report achievement at the Low level.

Asian: High 579 (6.1) Medium and 533 (6.9). There were too few observations to report achievement at the Low level.

While there was a positive relationship between higher self-concept and achievement was observed for all ethnic groupings, the relationship was less marked (or *steep*) for Māori students than it was for Pākehā/European students. That is, the difference between Pākehā/European students' mean achievement at the high and low levels was 122 scale score points compared with a difference of 90 observed for Māori students.³⁷

Any change between 2001 and 2005/2006?

Both Year 5 girls and boys in 2005/2006 tended to be less confident about their reading ability, as measured by the SRSC Index, than their 2001 counterparts. A significant 9 percentage point decrease in the proportion of both boys and girls at the high level was accompanied by a significant increase at the medium level from 2001 to 2005/2006.

Students in all ethnic groupings in 2005/2006 were also less likely to be at the high level of the SRSC Index than their 2001 counterparts. The decreases in the proportions at the high level were significant for Māori, Pasifika, and Pākehā/European students; the decrease for Asian students was not significant. (Note: the increase in the proportions at the medium level were significant for Māori and Pākehā/European but not for Pasifika students.)

As well as looking at the changes on the entire index, it is also interesting to examine the changes in responses to the individual statements that comprise the index. These data are shown in Table 5.2.

Table 5.2: Students' level of agreement to statements on self-concept in reading in 2001 and 2005/2006

Self-concept statement	Level of agreement (%) and year of assessment							
	Agree a lot		Agree a little		Disagree a little		Disagree a lot	
	2001	2005/2006	2001	2005/2006	2001	2005/2006	2001	2005/2006
Reading is easy for me	49 (1.0)	45 (0.8) ▼	41 (1.0)	44 (0.8) ▲	7 (0.6)	9 (0.4)	3 (0.8)	3 (0.3)
I do not read as well as other students in my class	19 (0.9)	20 (0.7)	33 (1.0)	36 (0.8) ▲	22 (1.0)	22 (0.7)	26 (0.9)	21 (0.7) ▼
When I am reading by myself, I understand almost everything I read	56 (1.1)	51 (0.8) ▼	31 (1.1)	36 (0.7) ▲	9 (0.6)	10 (0.5)	4 (0.4)	3 (0.3)
I read more slowly than other children in my class	N.A.	18 (0.6)	N.A.	30 (0.6)	N.A.	27 (0.7)	N.A.	25 (0.7)

Notes

Adjusted percentages have been reported. Standard errors appear in parentheses.

N.A. Statement was not included in PIRLS 2001.

▲ = the percentage is significantly higher.

▼ = the percentage is significantly lower.

Year 5 students in 2005/2006 were generally more reticent with their views on the statements about the ease of reading and independent reading. Year 5 students in 2005/2006 were also more likely than their 2001 counterparts to view their reading ability a little more negatively when they compared themselves with their peers.

Starting early makes a difference

To provide information about students' early literacy activities, parents/caregivers were asked to indicate how frequently (on a 3-point scale – 'often', 'sometimes', 'never or almost never') they or someone else in the home engaged in six literacy-related activities with their child before the child began primary school:

- read books
- tell stories
- sing songs
- play with the alphabet
- play with word games
- read aloud signs and labels.

³⁷ There were too few observations (N < 50) to look at the mean scores for Asian and Pasifika at the low level of the SRSC Index.

The Early Home Literacy Activities (EHLA) Index summarises parents' responses.³⁸ Students were assigned to the high level of the index if their parents reported engaging in the six activities 'often', whereas students at the low level had parents who for the most part reported they 'never or almost never' did so.³⁹

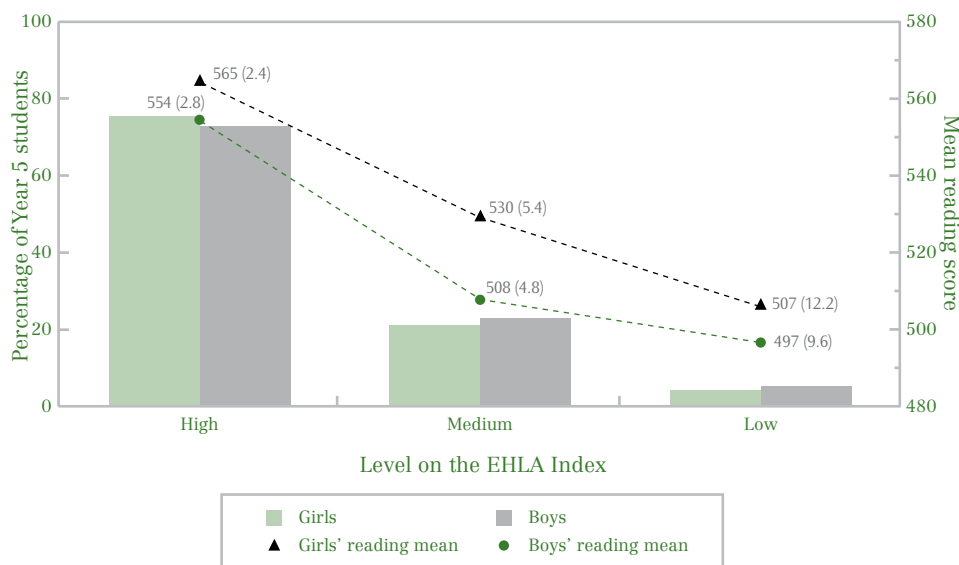
Based on the responses of parents/caregivers, internationally the following points can be made.

- New Zealand Year 5 students in 2005/2006 were found to have had one of the highest levels of engagement in early literacy activities, with nearly three-quarters (74%) at the high level of the EHLA Index. Just over one-fifth (22%) were at the medium level, and just under one-twentieth (4%) were at the low level.⁴⁰
- Internationally, there was a positive relationship between engaging in early literacy activities and students' reading literacy achievement. New Zealand Year 5 students whose parents/caregivers reported that they had frequently exposed their child to early literacy activities as a pre-schooler on average achieved significantly higher reading scores than those who had not (560 compared with 501).

Figure 5.6 shows the proportions of New Zealand's Year 5 boys and girls who were, based on their parents' reports, at each level of the index. There was very little difference in the proportions of girls and boys at each level of the index. The difference in reading literacy achievement between those students who had high exposure and those who had low exposure was about the same for both girls and boys (about 58 scale score points).

Interestingly, however, at both the high and medium levels there were still significant differences between girls' and boys' reading literacy achievement, although there was no difference between the two groups who had little exposure to early literacy activities.

Figure 5.6: Year 5 students at each level of the Early Home Literacy Activities (EHLA) Index and reading literacy scores in 2005/2006, by gender



Notes

The bars represent the percentage of Year 5 students at each level of the EHLA Index. The high level of the EHLA Index denotes high exposure to early literacy activities, whereas the low level of the index denotes a low exposure to the activities.

The data points are the mean reading literacy scores for the students at each level of the EHLA Index. Standard errors appear in parentheses.

Pākehā/European students were the most likely to have engaged in these activities (80%), while Asian students were the least likely (52%).⁴¹ Based on the responses received from parents/caregivers, the difference in reading literacy achievement was observed across all ethnic groupings.

³⁸ Although approximately 4,000 questionnaires were completed and returned by New Zealand parents/caregivers in 2005 (c.f. approx. 2,100 in 2001), the overall response rate (unweighted) was actually lower at 64 percent (c.f. 84%).

³⁹ The average for each parent was computed across the six activities: 1 = never or almost never, 2 = sometimes, and 3 = often. A high level indicates an average of greater than 2.33 through 3, a medium level indicates an average score of 1.67 through 2.33, and a low level indicates an average of 1 to less than 1.67.

⁴⁰ Only the Russian Federation, Scotland, and the Canadian province Nova Scotia had higher proportions at the high level.

⁴¹ The response rates were lower for parents/caregivers of Māori and Pasifika students (49% and 48% respectively) than for Pākehā/European students (72%) and Asian students and Other ethnic groups (both 67%). Therefore, this information should be interpreted with some caution. However, it is worth noting that in 2001 this finding was also observed.

Pre-primary education

The importance of quality pre-primary education in preparing children for primary school is well documented. In most PIRLS countries pre-primary education is voluntary, although participation rates are high. In some PIRLS countries pre-primary education is compulsory and is usually one or two years in duration, typically from about 4 years of age. These countries are Hungary, Israel, Latvia, Luxembourg, Poland, and Romania. Two Canadian provinces – British Columbia and Nova Scotia – also reported compulsory pre-primary education.

Internationally, there was a strong relationship with achievement: the mean reading literacy achievement of students who had 2 or more years of pre-primary education was about 50 scale score points higher than that of students who had not attended a facility.

In New Zealand, the majority of Year 5 students had attended an early childhood education facility prior to their starting school (96%), including 5 percent of students who had spent only up to 1 year. The 9 percent of students who either had 1 year or less (522) or who had not attended (532) tended to achieve lower scores than those who had attended for at least two years (about 550).

Of note is the 28 to 30 scale point difference between the mean reading scores for Year 5 boys who had attended (542) an early childhood facility and those Year 5 boys who either had not attended (512) or who had relatively little (516) early childhood education experience.

By way of contrast, for Year 5 girls the difference was only evident between those who had attended a facility and those girls who had little (1 year or less) early childhood education (558 c.f. 528); the 5 percent of Year 5 girls who had *no* early childhood education experience generally scored nearly as well (548) as those who had attended.

Parents' reports indicate that the majority of Pākehā/European students had attended some form of early childhood facility (93%) for more than 1 year. The corresponding figures for Māori and Pasifika students were both 85 percent; a smaller proportion was observed for Asian students at 82 percent.

Born in New Zealand

In *Reading literacy in New Zealand* students' reports of whether or not their parents were born in New Zealand was presented. Based on their reports, a relatively high proportion (20%) of New Zealand students' parents were born in another country compared with many other countries but was lower than, for example, the proportions reported for the Canadian provinces Ontario (37%) and British Columbia (33%). No significant differences in the mean reading literacy achievement was found between those Year 5 students whose parents who were born in New Zealand and Year 5 students whose parents born in another country.

Students were also asked whether or not they were born in another country. It is important to note, however, that the question as to the age of students' arrival in New Zealand was not asked. At 14 percent, the proportion of Year 5 students who reported they were born in a country other than New Zealand was relatively high compared to the comparable proportions observed for other countries. Only three other countries had higher proportions: Latvia (26%), Hong Kong and Qatar (both 18%). Table 5.3 shows the mean reading literacy scores for students by their *immigrant* status, and by their ethnicity.

Table 5.3: Year 5 students' mean reading literacy scores in 2005/2006, by New Zealand-born and ethnic grouping

Year 5 student group	Born in NZ		Born in another country		Difference in mean achievement (NZ born – Not NZ born)
	Percentage of Year 5 students	Mean score	Percentage of Year 5 students	Mean score	
Pākehā/European	90 (0.6)	551 (2.4)	10 (0.6)	574 (5.4)	-23 (5.5)*
Māori	95 (0.8)	487 (3.9)	5 (0.8)	480 (16.5)	+7 (16.5)
Pasifika	79 (2.6)	482 (6.8)	21 (2.6)	474 (12.1)	+8 (12.0)
Asian	45 (2.5)	551 (7.5)	55 (2.5)	551 (5.9)	0 (7.6)
Other ethnic groups	31 (4.7)	~ ~	69 (4.7)	534 (11.8)	N.C.†
All New Zealand	86 (0.8)	532 (2.2)	14 (0.8)	546 (3.5)	-14 (3.4)*

Notes

Standard errors appear in parentheses. Because results are rounded, some figures may appear inconsistent.

Tilde (~) indicates the achieved sample size was too small (N < 50) to calculate the mean. See TN 7 in Technical Notes for details.

* Difference between mean scores was statistically significant at 5 percent level.

† Not calculated.

The mean achievement of Year 5 students who reported they were born in another country achieved, on average, 14 scale score points higher than those students who were born in New Zealand. Interestingly, when students' reports of being born in New Zealand were examined by ethnicity, the difference in achievement was found to be largely due to the significantly higher average achievement of Pākehā/European students who were not born in New Zealand. It is also worth noting, that for each of the other ethnic groupings there was no significant difference between the mean reading literacy achievement of students born in New Zealand and those born in another country.

Home language

In PIRLS-05/06 students and parents were asked about the frequency of speaking the language in which the assessment was administered (i.e., the language of instruction).⁴² Note that the question format was different from the format used in PIRLS-01, and therefore it was not possible to make any direct comparisons with the information reported for PIRLS-05/06.

New Zealand students were tested in either English or Māori.⁴³ According to PIRLS-05/06, just under three-quarters of New Zealand Year 5 students (73%) reported they 'always' spoke the test language (English or Māori) in the home,⁴⁴ with just over one-quarter (26%) reporting they 'sometimes spoke the test language and sometimes spoke another language'. Just 1 percent of Year 5 students reported 'never' speaking the test language at home. New Zealand parents' reports were fairly consistent with students' reports, with both parents/caregivers of more than three-quarters of students (78%) reporting they mostly communicated with their child in the test language.

Countries where at least 80 percent of students reported always speaking the language of the test at home were Georgia (85%), Poland (85%), Macedonia (83%), Denmark (81%), the Russian Federation (82%), Romania (81%), Norway (80%), and Scotland (80%). Countries where 40 percent or less of students spoke the language of the test at home included Indonesia (38%), Chinese Taipei (36%), Kuwait (26%), Singapore (21%), and Luxembourg (3%).

Speaking the test language at home and achievement

As already noted, the question used in PIRLS-05/06 differed from that used in PIRLS-01. However, the relationship with the test language and speaking it at home is fairly consistent across the two studies, with both showing that students who frequently spoke the test language at home typically achieved at a much higher level than those students who rarely did. In 2005/2006 New Zealand's Year 5 students reporting they 'always' spoke the test language, on average, achieved a significant 23 scale score points higher than those who only 'sometimes' spoke the test language (542 compared with 519).⁴⁵ (Note: this difference is relatively small [effect size or Cohen's $d = 0.29$] compared with size of the average differences across the ethnic groupings reported in Section 2). Table B.12 in Appendix B reports the mean reading literacy achievement for those students who were assessed in English for the two home language categories: always spoke English in the home and sometimes/never spoke English. As already noted students assessed in Māori formed just 1.7 percent of the achieved (weighted) sample. Moreover there were insufficient numbers of students assessed in te reo Māori in each of the home language categories to be able to report their achievement separately (See TN 7 in Technical Notes for details).

Speaking the test language at home and lower achievers

In Section 3 the lower-achievers group was defined as the group of students who did not reach the *Intermediate International Benchmark*, or scored less than 475. Figure 5.7 shows the composition of the lower-performing group according to whether students reported always speaking the language of the PIRLS assessment (English or te reo Māori) at home.

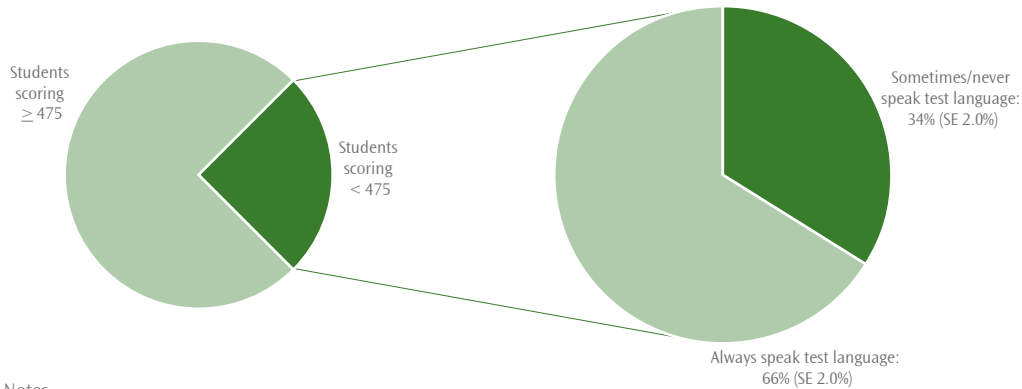
⁴²According to international criteria for excluding students from the PIRLS assessment, students with *limited proficiency* in the test language could be excluded from the assessment. Typically these were students who had received only 1 or 2 years' instruction in the language of the test. New Zealand's exclusion rate in 2005/2006 was higher than in 2001 largely due to the exclusions based on the language criterion. See Table A.3 in Appendix A.

⁴³Testing in te reo Māori was conducted in schools and classes where students received 81 to 100 percent of their instruction in te reo (i.e., Level 1 immersion).

⁴⁴This compared with Scotland (80%), England (76%), the United States (72%), and Singapore (21%), and the international mean of 66%.

⁴⁵There were proportionally too few New Zealand students never speaking the test language to report their achievement. This was also the case in many other countries. The mean for the combined categories of 'sometimes' and 'never' was 518. Examples of countries with a difference higher than the one observed in New Zealand included Belgium (Flemish) (29), and Germany (28); countries with a lower difference included the Netherlands (20), England (14), and the United States (13).

Figure 5.7: Composition of the Year 5 lower-achievers group in 2005/2006 by their reports of speaking the language of the PIRLS assessment at home



Notes

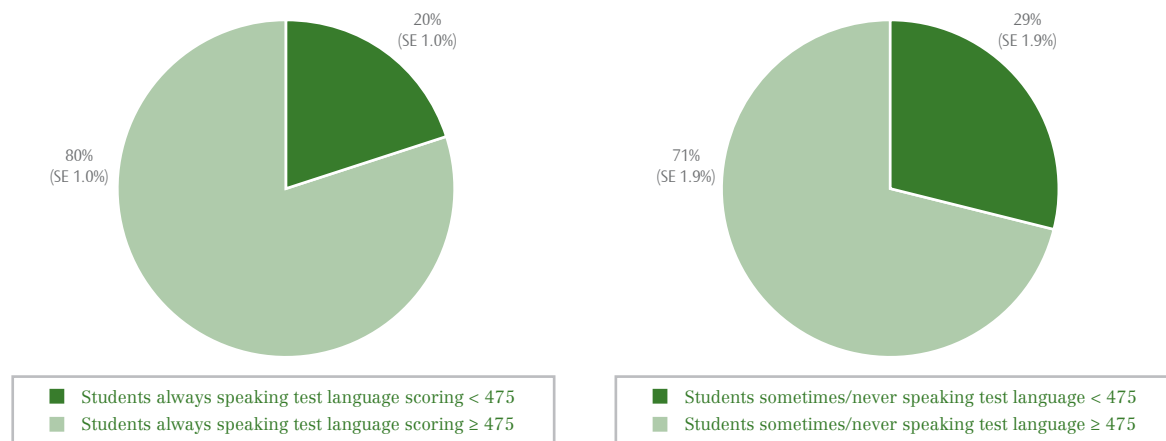
Standard errors (SE) appear in parentheses.

The proportion of all Year 5 students who reached the PIRLS *Intermediate International Benchmark* was 76 percent (SE 1.0%); the proportion who did not reach this benchmark was 24 percent (SE 1.0%).

After combining students in the ‘sometimes’ speak the test language (26%) and ‘never’ speak it categories (1%), non-speakers of the test language were somewhat over-represented in the lower-achievers group, with about one-third of these Year 5 students (34%) scoring below 475.⁴⁶

Figure 5.8 shows the proportions of students in each home language category that fell into the lower-achieving category. The proportion of students who sometimes/never spoke the test language at home and who were in the lower-achievers group was about 9 percentage points higher than the proportion observed for the group who always spoke the test language at home.

Figure 5.8: Percentage of Year 5 students who spoke the language of the PIRLS assessment at home and were in the lower-achievers group in 2005/2006



Notes

Standard errors (SE) appear in parentheses.

The proportion of all Year 5 students who reached the PIRLS *Intermediate International Benchmark* was 76 percent (SE 1.0%); the proportion who did not reach this benchmark was 24 percent (SE 1.0%).

Odds ratio

Summing up the information above, the odds of a Year 5 student who rarely spoke the test language at home being in the lower-achievers group was 60 percent higher than the odds of a Year 5 student who always spoke the test language at home (i.e., 0.40 c.f. 0.25).

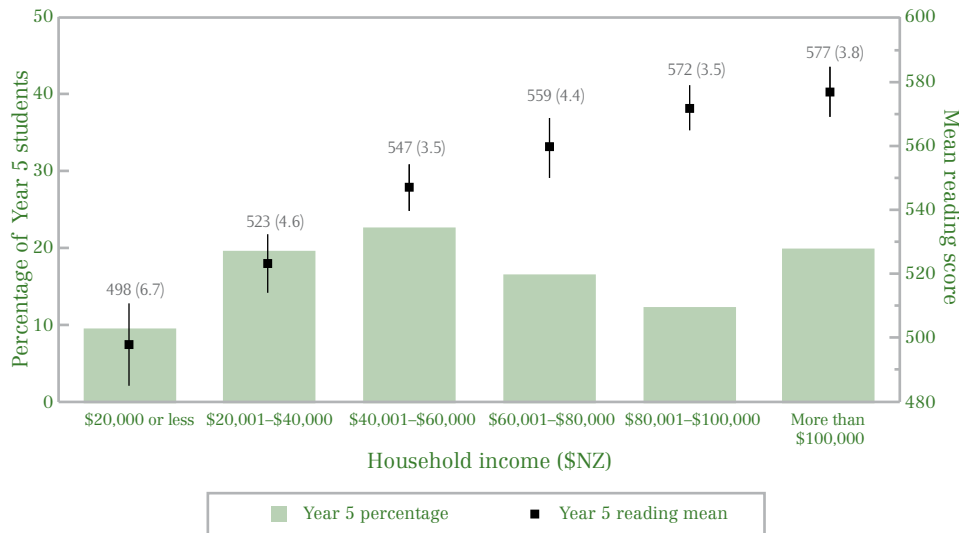
⁴⁶Another way to view this information is to look at the composition according to home language status *and* the language in which students were assessed. However, due to the very small sample of students assessed in Māori (< 2%), the responses from students in two home-language categories (always and sometimes/rarely) were not analysed separately by test language.

Socio-economic background

A family's socio-economic status is likely to have an impact on its children's access to educational resources that can be acquired out of school, on their extra-curricular experiences, and on their educational outcomes. In PIRLS, socio-economic information is sought from both parents/caregivers and students. The information sought from parents/caregivers in 2005/2006 included details about household income, financial wellbeing, and parents' highest level of education.

Figure 5.9 summarises one of two key socio-economic indicators, household income, collected from the parents of Year 5 students. The figure shows clearly the relationship between household income and student achievement.

Figure 5.9: Household income and Year 5 students' reading literacy achievement in 2005/2006



Notes

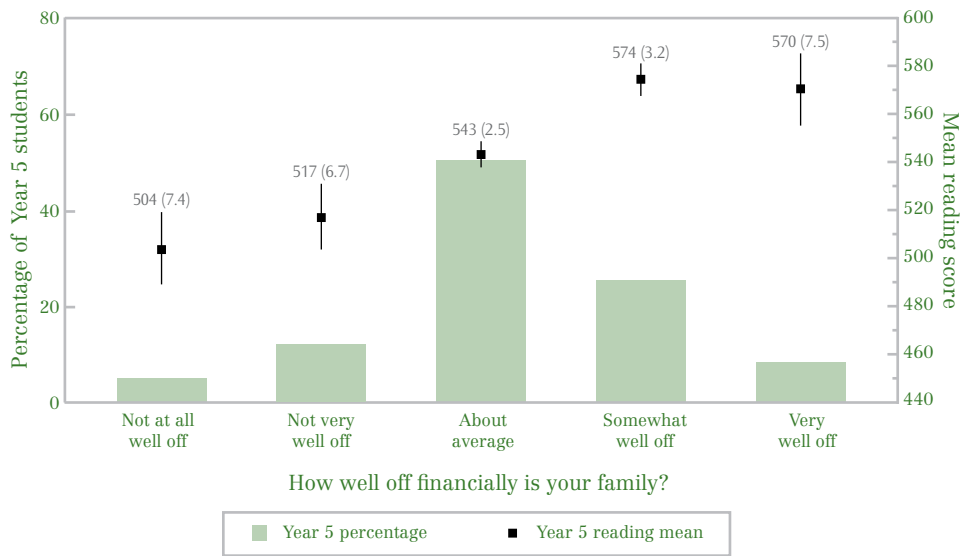
Each bar represents the percentage of students whose parents/caregivers indicated their household income falls within a particular band. The mean reading literacy scores are shown for each group of students in each income band. The vertical lines extending from the data point show the 95 percent confidence interval around the mean (i.e., ± 2 standard errors).

The overall response rate to the questionnaire was 64 percent and therefore may not be representative of all parents/caregivers of Year 5 students.

Figure B.1 in Appendix B also summarises the parents' reports on household income information by students' ethnicity. Although within all ethnic groupings there is a linear relationship between household income and achievement, there are still observable differences in students' achievement across groupings. That is, income on its own does not appear to account for all the differences among students of different ethnic backgrounds. For example, Asian students in households with relatively low income appear to achieve at a higher level than Pākehā/European students in households at the same lower income level, who in turn achieve at a higher level than Māori students in households at the same income level. One possible explanation for this is household size. This information was not collected in PIRLS-05/06, but in 2001 this data was available and went some way towards explaining some of the difference (Caygill & Chamberlain, 2004).

Parents/caregivers were also asked to compare their financial circumstances ('financial well-being') with other families. Figure 5.10 summarises this, the second of the two key socio-economic indicators. Again, there is a strong relationship between parents' ratings of financial well-being and children's reading achievement.

Figure 5.10: Parents'/caregivers' ratings of household financial well-being and Year 5 students' reading literacy scores in 2005/2006



Notes

Each bar represents the percentage of students whose parents/caregivers rated their household's financial well-being. The data points are the mean reading literacy scores for each group of Year 5 students in each well-being category. The vertical lines extending from the data point show the 95 percent confidence interval around the mean (i.e., ± 2 standard errors).

The overall response rate to the questionnaire was 64 percent and therefore may not be representative of all parents/caregivers of Year 5 students.

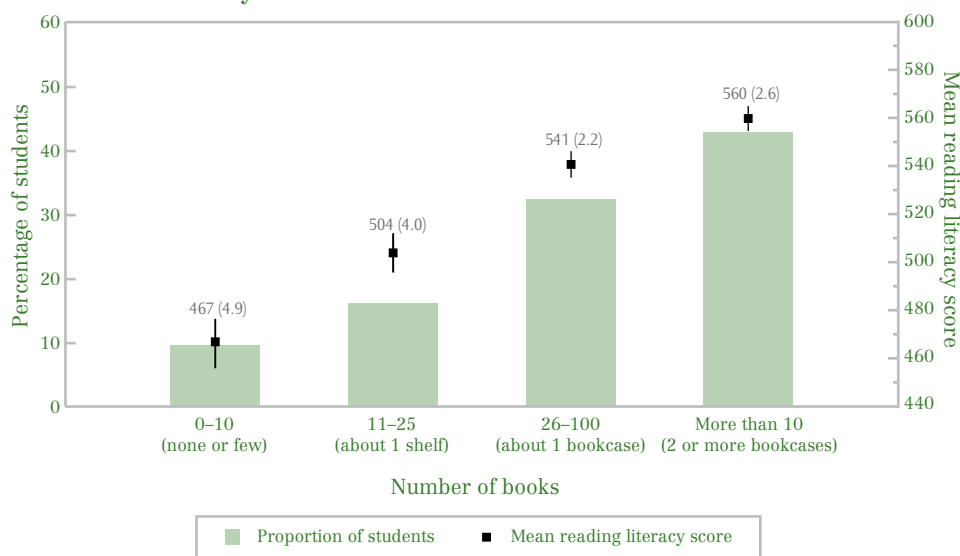
Both sets of financial data complement home education resources information, which was summarised and reported as the Home Education Resources (HER) Index, described in *Reading literacy in New Zealand* (Chamberlain, 2007b).

The HER Index combined parents' and students' responses to questions on the number of books, the presence of educational aids, and whether or not at least one parent had completed a university education. The relationship between New Zealand students' reading literacy achievement and the level on the index was positive, with the average achievement of the 18 percent of students at the high level of the index (i.e., high access) 50 scale score points *higher* than the 80 percent of students at the medium level of the index (591 c.f. 541). There were too few Year 5 students (1%) at the low level of the index to calculate the mean for this group. (The corresponding international means for each level were 563, 503, and 426.) Because the index is constructed to summarise information, it is worth examining some of the individual components separately.

Students' reports of books in the home

'Books in the home', used in many of the large-scale student assessment studies, has been found to be a reliable proxy of students' family socio-economic status. Using numbers and illustrations of bookcases, students in PIRLS were asked to estimate the number of books in their home. Figure 5.11 summarises Year 5 students' estimates. Not surprisingly, there is a strong positive relationship between the number of books and reading literacy achievement.

Figure 5.11: Year 5 students' reports on the number of books in their homes and their reading literacy scores in 2005/2006



Notes

Each bar represents the percentage of Year 5 students reporting particular book ownership.

The data points are the mean reading literacy scores for the students in each books-in-the-home category. The vertical lines extending from the data point show the 95 percent confidence interval around the mean (i.e., ± 2 standard errors).

The relationship between books in the home and achievement was weakest for Pasifika students, and to some extent Māori students, than it was for Pākehā/European and Asian students as Figure B.2 with Table B.13 in Appendix B illustrate.

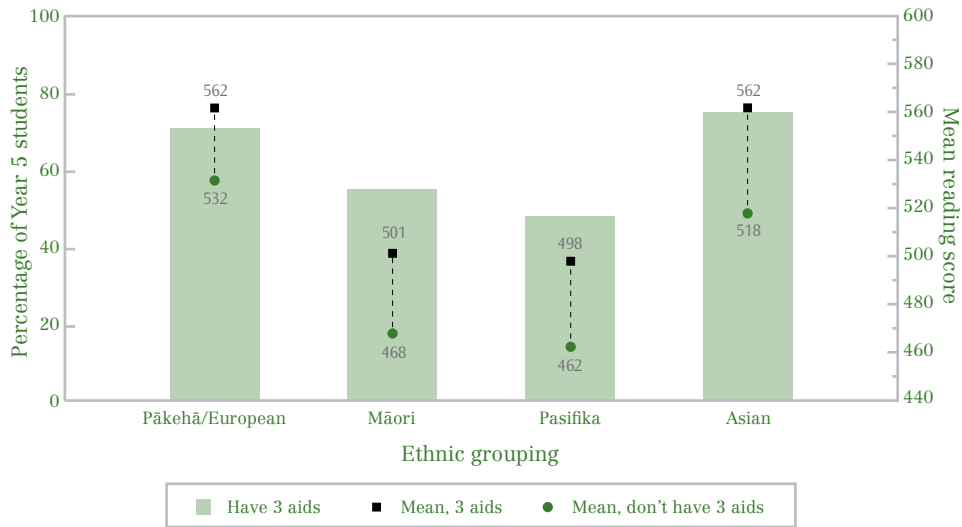
Students' reports of three educational aids

Three other indicators of socio-economic/educational wellbeing were combined in order to examine the relationship further. Students were asked if they had access to three educational aids: a computer, a study desk or table, and whether or not they had their own books. Two-thirds of Year 5 students reported having all three aids. Moreover, the average achievement of this group was a significant 42 scale score points higher than the group who reported fewer or none of the aids (548 c.f. 506).

At this point it is also worth considering this information in the context of being in the lower-achievers group. That is, what were the *odds* of Year 5 students who did not have the three educational aids being in the lower-achievers group (i.e., did not reach the *Intermediate International Benchmark* as they scored less than 475)? Just over one-third of Year 5 students (35%) who did not have three aids scored below 475; the odds were 0.54. Furthermore, the odds of a Year 5 student who did not have all three aids being in the lower-achievers group was 2.6 times higher than the odds of a Year 5 student who had all three aids being in the lower-achievers group (i.e., 0.21).

Figure 5.12 summarises the educational aids data for students in each of the four main ethnic groupings. The average achievement of Year 5 students who had access to all three aids in each grouping was clearly higher than that of their counterparts who did not. The average difference in achievement was greatest for Asian students (44 scale score points). The corresponding differences for students in the other groups were: Pasifika, 35, Māori, 33, and Pākehā/European, 29. In all cases the differences were statistically significant.

Figure 5.12: Year 5 students' reports of three educational aids in the home and their reading literacy scores in 2005/2006, by ethnic grouping



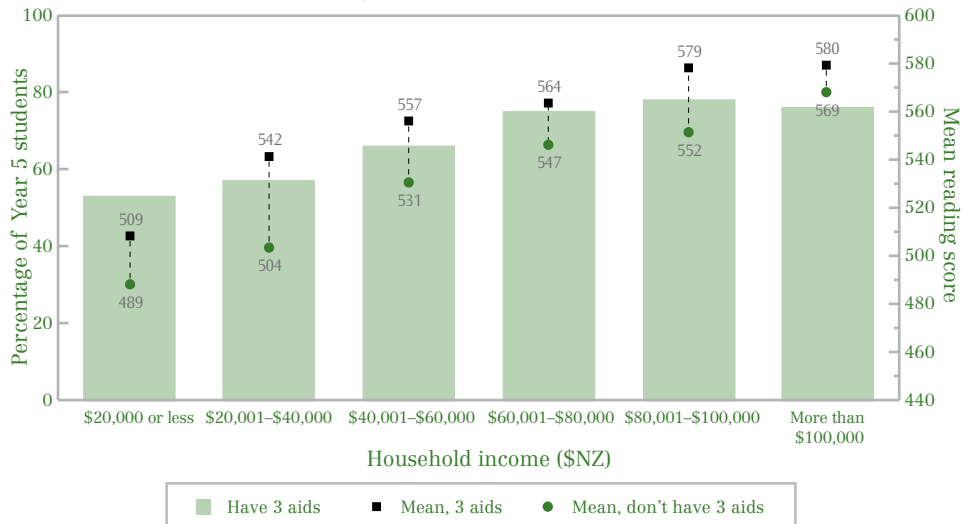
Notes

The bars represent the percentages of Year 5 students in each ethnic grouping who reported they had three educational aids and those who had fewer than three or none.

The ■ data points are the mean reading literacy achievement for Year 5 students in each ethnic grouping who had all three educational aids. The ● data points are the mean scores for counterparts who had fewer or none of the aids.

Looking at the educational aids data along with household income is also revealing. Bearing in mind that the parent/caregiver data do have some limitations due to the non-response rate, Figure 5.13 illustrates the positive relationship between household income and students having the three aids: as income increases, the probability of having three educational aids increases.

Figure 5.13: Year 5 students' reports of three educational aids and their reading literacy scores in 2005/2006, by household income



Notes

The bars represent the percentages of students who reported they had three educational aids according to their family household income.

The ■ data points are the mean reading literacy scores for students who reported having all three aids in each income band. The ● data points are the mean literacy scores for students who had fewer or none of the aids in each income band.

Furthermore, in every income band Year 5 students who had access to all three educational aids generally had higher reading achievement than their counterparts who did not have the three aids.

In summing up, all economic measures (income, financial well-being,) and educational resources (books in the home and educational aids) clearly have a positive relationship with Year 5 student achievement. However, while all these single measures appear to provide some insight into differences in reading achievement *within* ethnic groupings, they do not account for all the differences *between* groupings.