

## 4. Overview of the relationships between factor and cluster variables and school and social characteristics

Before attempting to investigate the interrelationship between the variables derived from student, parent, and teacher responses, we look at how each of these variables relates to the social characteristics (gender, ethnicity, family income, maternal qualifications, family financial situation at age 14, and history of family income age 5–14) and school characteristics (decile, history of school decile age 5–14, and gender mix). It is worth looking at the school and family characteristics together, as there appear to be some gender effects that are actually more attributable to the type of school the young person attends (for example, a comparative learning environment is more likely in a single-sex boys' school than in a co-educational or girls-only school). It is difficult to separate gender mix, decile, and family income effects out, as half the students attending co-educational schools are attending low- or mid-decile schools, and correspondingly, most of those attending single-sex schools are attending high-decile or private schools (82 percent of those at girls' schools and 70 percent of those at boys' schools). All the low-decile schools are co-educational. Students attending low- or mid-decile schools are more likely to come from low- or middle-income families, while students from high-income families were more likely to attend high-decile or private schools.

By including the history of school decile and family income variables, we are able to trace the extent to which some of the associations are due to the situation at a particular time-point, or whether they are linked to particular changes over time.

The relationship between the demographic variables and the discrete engagement variables (typically, those derived as a result of a cluster analysis) was investigated using a simple cross-tabulation and the associated chi-square test statistic; associations with continuous variables (typically, those derived as a result of a factor analysis) were investigated using 1-way analysis of variance (ANOVA or regression using dummy variables).

The results are reported by type of analysis and within that derivation (whether from teacher comments, parent comments, or young person's comments), so that similar analyses can be discussed together.

### Discrete variables

The variables considered here are a combination of age-16 variables and some that were used at age 14. The age-16 variables are:

- subject cluster
- number of Level 1 NCEA credits (using Level 1 credits only means that Year 11 and Year 12 students can be meaningfully compared), split into quartile groups
- attendance (rating of attendance/absence at school)
- student values.

The age-14 variables that were used are:

- motivation
- parental interests
- student interests
- history of TV watching (age 8–14)

- history of enjoyment of reading (age 8–14)
- history of involvement in bullying (age 10–14)
- history of feelings about school (age 8–12)
- history of parents and teachers working on concerns (age 8–14).

The age-14 versions of the history and other variables have been used as:

- they are the same categorical variables that were used at age 14
- they capture events or influences during the more formative years of the lives of the young people
- any changes in what they measure between ages 14 and 16 are less likely to affect age-16 outcomes than would be the case for changes at earlier ages.

Ignoring all other variables, we first look at apparent associations with each of the social characteristics in turn. Results in this section are reported only for the variables where there were statistically significant associations.

### Gender and gender mix of school

These two characteristics are discussed together as some of the associations are more likely to be associated with the school (subject cluster, for example), and others are more likely to be associated with the characteristics of the individual.

Of the students still at school, 215 were male and 204 female, and 14 males and 13 females had left school by age 16. Most of those still at school were at co-educational schools (232 students), while 78 were at girls-only schools and 83 were at boys-only schools.

There are strong associations between gender and:

- Student values at 16; girls were more likely to value a satisfying life (48 percent) than boys (34 percent), whereas boys were more likely to have “standing out” values (45 percent) than girls (28 percent). A similar pattern was found at age 14, when more students valued the “standing out” values highly (48 percent of boys and 33 percent of girls).
- Number of Level 1 NCEA credits; the difference between the number of credits achieved by males and females was not statistically significant, but there was a significant difference based on the gender mix of the school (which has a stronger association with decile, maternal qualifications, and family income): fewer than 80 credits were achieved by 28 percent of the young people at co-educational schools, 6 percent at single sex girls’ schools, and 13 percent at single sex boys’ schools, while corresponding percentages achieving 120 or more credits were 34, 60, and 54, respectively.
- Motivation at 14; this showed an association with gender mix of school, as the proportions rating education highly in co-educational, all-girls, and all-boys schools were 27, 40, and 29 percent respectively, with correspondingly reversed ratings for those rating education as being of low importance: 38, 17, 24.
- Out-of-school interests at 14; the proportions having creative interests and only having computer games as an interest were broadly similar among the males and females, but more girls had wide interests including reading, arts, and sports (36 percent) than boys (23 percent), but more boys had playing sport as their main interest (44 percent) than girls (24 percent). Differences were even more marked in terms of the gender mix of the school, although these differences may be to do with the socioeconomic status of the students attending the single-sex or co-educational schools: 46 percent of girls at all-girls schools had wide interests, compared with 28 percent of boys at all-boys schools and 25 percent of young people at co-educational schools; 27

percent of the young people at co-educational schools had computer games as their main interest if they had one, compared with 8 percent of those at all-girls schools and 17 percent of those at a boys' school.

- Historical pattern of enjoyment of reading; more girls had consistently reported enjoying reading (48 percent) than boys (29 percent), and correspondingly more boys (12 percent) had said on two or more occasions they did not enjoy reading than girls (1 percent).
- Historical pattern of attitude to school; not only did girls more often report enjoying reading, they also were more often reported by their parents to be enthusiastic about school (47 percent) than boys (34 percent), and boys were more often reported to have mixed feelings about school (27 percent) or to have been unhappy at least once (14 percent) than girls (18 and 7 percent, respectively).

There are indicative associations between gender and:

- Subject cluster; males are more likely to be taking vocational (21 percent compared with 15 percent) or contextual (16 compared with 11 percent) orientation subjects, and girls are more likely to be taking traditional academic courses with a science orientation (55 percent compared with 40 percent). There was a stronger association with gender mix: Vocational and contextual orientation courses are more likely to be taken by people at co-educational schools (22 and 17 percent, respectively) than those at all-male (15 and 11 percent) or all-female schools (10 and 5 percent); traditional academic, arts orientation courses were more likely at single-sex schools (32 and 29 percent for all-female and all-male schools, respectively) than at co-educational schools (13 percent); and traditional academic, science orientation courses were more likely at girls' schools (54 percent) than at boys' schools (45 percent) or co-educational schools (47 percent).

## Ethnicity

Effects of ethnicity are difficult to separate out from income, maternal qualifications, school decile, and school gender mix.

At age 16, 56 of the students identified as Māori or Pacific by their parents at age 5 were still at school and seven had left school, and 351 identified as Pākehā/Asian were still at school, while 20 had left school.

At age 5, about half of the Māori or Pacific children who are still in the study at age 16 were from low-income homes, compared with about a quarter of Pākehā/Asian children. At age 16 these proportions are much the same, although there was a certain amount of movement between groups: of those in the lowest income group at age 5, 59 percent were in the corresponding group at age 16, and 10 percent were in the highest income group; of those in the highest income group at age 5, 70 percent were in the same group at age 16, and 8 percent were in the lowest income group.

The relationship discussed above between income, school decile, and gender mix can be extended to include ethnicity, given the association between ethnicity and income.

Three percent of the age-5 Māori/Pacific students' mothers had university qualifications, and 30 percent had no formal qualifications, compared with 21 percent of the Pākehā/Asian students' mothers, who had university qualifications, and 11 percent who had no formal qualifications.

Many, if not most, of the apparent associations between ethnicity and the engagement/motivation variables are no longer significant in larger models that include other variables. In other words, few of the ethnic differences described below are likely to be attributable to nothing other than ethnicity.

There were associations between ethnicity and:

- Subject cluster; Māori/Pacific students were more likely than Pākehā/Asian students to be taking subjects with a vocational orientation (28 percent compared with 16 percent) or a contextual orientation (33

compared with 10 percent), and were less likely to be taking traditional academic subjects (9 compared with 23 percent for arts, and 31 compared with 50 percent for science).

- Number of Level 1 NCEA credits; a third of Māori/Pacific students achieved up to 80 credits and 15 percent achieved over 120 credits, compared to just under a fifth and just under half of Pākehā/Asian students.
- Student values at age 16; Māori/Pacific students were less likely to place value on having a satisfying life than to have aspirational values (30 percent compared with 37 percent), but the order and magnitude of the differences was greater for the Pākehā/Asian students (43 and 19 percent, for satisfying life and aspirational, respectively).
- History of family income; given the association between ethnicity and family income described above, it is not surprising to find that Māori/Pacific students are more likely than Pākehā/Asian students to come from families that have mostly had a low income (19 compared with 8 percent), and less likely to come from families that have reported a high income in at least one round of data collection (11 compared with 28 percent).

### Family income and financial situation

Many of the students' families had relatively constant incomes: between ages 5 (or 8 if that is when they joined the study) and 16 their income tended to fall consistently into one of the low, middle, or high groups. Some varied over time, and some increased or decreased steadily. The numbers of young people with families in the various categories are shown in Table 1.

**Table 1: Family income variables**

Family income at age 5	Number at school	Number left school	Family income at age 14	Number at school	Number left school
Unknown	11	2	Unknown	16	3
Under \$30K	93	19	Under \$30K	44	12
\$30–60K	193	5	\$30–60K	103	10
\$60–80K	60	1	\$60–100K	141	0
\$80K or more	64	0	\$100K or more	117	2
<b>Total</b>	<b>421</b>	<b>27</b>	<b>Total</b>	<b>421</b>	<b>27</b>
<b>Financial situation</b>					
Comfortable	245	3			
Moderate	112	9			
Difficult	64	15			
<b>Total</b>	<b>421</b>	<b>27</b>			

When we use income in analyses we have a choice of which income to use: that at age 5, which captures some of the advantages or lack thereof that the child had when he or she started school and which may have had a long-term effect on his or her progress through school; that at age 14, which captures some of the advantages that the child had when starting secondary school; or the latest measure at age 16. The biggest disadvantage of using age-16 family income is that we have information about this variable for at most 440 students, as 440 parent interviews were completed, and not all were willing or able to give information about income. For this reason, the analyses carried out are similar to those run at age 14: both age-5 and age-14 family income was included in

turn in models, and where there was an effect, this was reported for the stronger of the two effects. This time, as we found at age 14, there is a tendency for the age-5 income to have a stronger effect on cognitive competencies, and some attitudinal competencies (like *thinking and learning* and *focused and responsible*), and for the age-14 family income to have a stronger effect on the social competencies, and some of the engagement measures.

At age 14 we obtained a measure which we called family financial situation which is a slightly broader look at socioeconomic status that includes income, ability to pay bills, and money remaining after bills have been paid. Like family income, to which it is closely related, this variable shows fewer Māori/Pacific than Pākehā/Asian students coming from families with "comfortable" circumstances (30 percent compared with 59 percent), and more coming from homes with "difficult" circumstances (29 percent compared with 15 percent). Students whose mothers had no formal qualifications were more likely to be living in difficult circumstances than those whose mothers had university qualifications (33 percent and 5 percent, respectively). Given the link between income and school decile, it is not surprising that students attending a high-decile school were more likely to have a comfortable family financial situation (67 percent) than a difficult one (9 percent), and the converse was true for students at low-decile schools (26 and 37 percent, respectively).

There were associations with family income and:

- Subject cluster; students from lower-income homes were more likely to take subjects with a vocational or contextual orientation, and those from high-income homes were more likely to take traditional academic subjects. The differences are most marked using the age-5 family income: a third of those from homes with an income of under \$30,000 (described as "low-income" below) were taking subjects with a vocational orientation, compared with 8 percent of those from homes with an income of over \$60,000 ("high-income"); for contextual orientation the percentages are 25 and 6 for low- and high-income homes; traditional academic with an arts orientation subjects were taken by 15 and 34 percent, respectively, and traditional academic with a science orientation subjects were taken by 25 and 51 percent, respectively. There were similar associations with the history of family income, and family financial circumstances at age 14.
- Number of Level 1 NCEA credits; 36 percent of students from families with an age-5 income of under \$30,000 achieved under 80 Level 1 credits, compared with 11 percent of those from families with incomes of over \$60,000; 45 percent of those from low-income families achieved between 80 and 120 credits, compared with 28 percent from higher-income families; and none of the students from low-income families achieved over 160 credits, while 10 percent of those from higher-income families did. There was a similar picture for history of family income and family financial circumstances at age 14.
- Motivation at 14; 25 percent of the young people from low-income families at age 5 saw education as something valuable, compared with 36 percent of those from high-income families, and 47 of those from low-income families placed a low value on education, compared with 22 percent of those from high-income families. The differences were more extreme using the family circumstances at 14 variable: 15 percent of those in difficult circumstances saw education as valuable, compared with 33 percent of those in a comfortable situation, and the corresponding percentages for placing a low value on education were 51 and 24.
- History of bullying; differences in experience of bullying are most marked for age-14 family income (they are indicative; they are not significant for income at other ages), perhaps because this is associated with the schools attended in the middle school years, and the culture in the schools. Seventeen percent of the young people from low-income (under \$30,000) homes had never reported involvement in bullying, compared with 32 percent of those from high-income (over \$60,000) homes. Similarly, a third of those categorised as having a comfortable family financial situation had never been involved in bullying, compared to about a fifth of those from moderate or difficult circumstances.

- History of TV watching; 54 percent of those from low-income families (age-5 income of under \$30,000) had a low rate of TV watching between ages 8 and 14, as did 74 percent of those from high-income families (age-5 income of over \$60,000), while 25 percent of those from low-income families had high rates, compared with 13 percent of those from high-income families.

## Maternal qualifications

Maternal qualifications are used to capture a wide range of genetic and environmental influences. Mothers with higher levels of qualifications are more likely to belong to families with higher income levels (52 percent of students with mothers with university-level qualifications had a family income over \$100,000 at least once by age 14, compared with 7 percent of those whose mothers had no formal qualifications) and, in our sample, to have Pākehā or Asian children (and so to belong to a similar ethnic group). Mothers with higher levels of qualifications are also more likely to have children who would like to have and be able to have similar qualifications, they are more likely to value learning (in the broadest sense), and to engage in activities that support and encourage learning in their children.

**Table 2: Maternal qualifications**

Maternal qualifications	Number at school	Number left school
Unknown	5	1
No formal qualifications	49	9
Mid-school/Trade	207	13
Senior secondary/Tertiary	78	2
University	82	2
Total	421	27

In the descriptions below, the responses of those whose mothers had no formal qualifications are contrasted with those whose mothers had university-level qualifications. The responses of those with mid-secondary/trade or senior secondary/tertiary qualifications tended to form a gradient between the two extremes.

There were associations between maternal qualifications and:

- Subject cluster; eighty-nine percent of the students with mothers with university-level qualifications were taking traditional academic subjects in either arts (41 percent) or science (48 percent), compared with 42 percent of the students with mothers with no formal qualifications (6 percent arts, 36 percent science). Students with mothers with no formal qualifications were much more likely to be taking the vocational orientation subjects (34 percent) or contextual orientation (22 percent) compared with those whose mothers had a university qualification (4 and 5 percent, respectively). Possible reasons for this include that individuals in both generations had difficulty with the academic subjects, that the young person was following a similar career path to their parents, and that parents who had completed a formal academic education themselves encouraged their children to take the more traditional subjects in preparation for post-secondary study.
- Number of Level 1 NCEA credits; 35 percent of students whose mothers had no formal qualifications achieved fewer than 80 Level 1 credits, 60 percent achieved between 80 and 120, 4 percent achieved between 120 and 160 credits, and none achieved over 160 credits. The students whose mothers had university qualifications had somewhat different outcomes: 5, 30, 56, and 10 percent, respectively.

- Motivation at age 14; almost half (48 percent) of students whose mothers had no formal qualifications placed a low value on education, and only 22 percent placed a high value, whereas for young people whose mothers had university-level qualifications the percentages were 24 and 37 percent, respectively.
- History of enjoyment of reading; just under a quarter (24 percent) of students whose mothers had no formal qualifications had always enjoyed reading, whereas a half of those whose mothers had university-level qualifications had.
- History of TV watching; not only is there an association between parental interests, where TV watching features as one of the main interests for some mothers, and maternal qualifications, but there is a matching pattern in the amount of TV the young people were allowed to watch between ages 8 and 14: 71 percent of those whose mothers had university qualifications had low rates of TV watching, compared with 40 percent of those whose mothers had no formal qualifications, and the corresponding percentages with high rates of watching were 11 and 33.

### School decile

School decile is associated with family income (present and past), maternal qualifications, and ethnic group. In addition to information about the decile rating of their current school, we have a variable that captures the history of the decile rating of the schools attended between ages 8 and 14. The numbers of young people falling into each group are shown in Table 3.

**Table 3: School decile variables**

Decile groups of age-16 school	Number at school	Main decile groups of age 8–14 schools	Number at school	Number left school
Unknown/not applicable	28	Unknown/not applicable	34	1
1–2	18	1–2	28	3
3–8	129	3–8	132	10
9–10/Private	246	9–10/Private	162	5
		Mixed	65	8
<b>Total</b>	<b>421</b>	<b>Total</b>	<b>421</b>	<b>27</b>

Just as age-16 Māori/Pacific students are more likely than Pākehā/Asian students to be in low-decile schools, so, too they are more likely to have spent most of their careers up to age 14 in such schools (27 percent compared with 3 percent) and correspondingly less likely to have been in mainly high-decile schools (21 percent compared with 40 percent).

Using age-14 income, 15 percent of students from low-income (under \$30,000) homes attended mainly decile 1 or 2 schools, but none of the students from high-income (over \$100,000) homes did; 19 percent of the students from low-income homes attended mainly decile 9 or 10 schools, while 55 percent of those from high-income homes did; and 19 percent of students from low-income homes attended a range of schools with low-, mid-, and high-decile classification, compared with 13 percent of students from high-decile homes.

There are associations, too, with maternal qualifications: none of the students whose mothers had university-level qualifications attended mainly decile 1 or 2 schools between the ages of 8 and 14, and 51 percent attended mainly decile 9 or 10 schools; students of mothers with no formal qualifications were almost equally likely to attend mainly low- or mainly high-decile schools (19 and 22 percent, respectively).

And, given the association between gender mix and decile, the 71 percent of students who are attending a co-educational school have mainly attended decile 1 or 2 schools.

School decile, or history of school decile, showed associations with:

- Subject cluster; students in low-decile schools are more likely to do vocational or contextual orientation subjects (42 and 32 percent, respectively) than students in high-decile schools (14 and 9 percent, respectively), and those in low-decile schools are less likely to do traditional academic subjects with emphasis in either arts or science (none did arts, 26 percent did science subjects), while these subjects are more likely to be taken by students in high-decile schools (26 and 50 percent, respectively).
- Number of Level 1 NCEA credits; students at low-decile schools were more likely to achieve under 80 credits (56 percent) than were students at high-decile schools (13 percent), and those at high-decile schools were more likely to achieve over 120 credits (52 percent) than those at low-decile schools (11 percent, but none achieved more than 160 credits).
- Motivation at 14; there was not a statistically significant association between the decile of the age-16 school, but there was an association with history of decile, where 58 percent of students who had mostly been in low-decile schools placed a low value on education, compared with 20 percent of those who had mostly been in high-decile schools, with the corresponding percentages for those placing a high value on education being 16 and 34.
- Attendance at 16; none of the students attending low-decile schools were rated as having excellent attendance, but 28 percent of those at high-decile schools were, and the corresponding percentages with multiple absences and seldom attending were 29 and 9, respectively.
- History of bullying; there was an indicative association between history of bullying and history of school decile: 16 percent of those mainly attending decile 1 or 2 schools had never been involved in bullying, compared with 32 percent of those mainly in mid-decile schools and 26 percent of those mainly in high-decile schools. The highest rate of longer-term involvement in bullying (two or more years) was among those who had attended schools in a range of decile groups (45 percent—by contrast only 32 percent of those mainly in mid-decile schools reported as much involvement), which may suggest that this was one of the motivators for changing school, for at least some of the 73 young people in this mixed-decile category, or that students changing schools are more likely to be subject to bullying when they are new to a school.
- History of TV watching; mainly low rates of TV watching were more common among those who had mainly attended high-decile schools aged 8–14 (63 percent) than those who mainly attended low-decile schools (42 percent), while the corresponding percentages for mainly high rates of TV watching were 18 and 29, respectively.

## Continuous variables

We turn now to scale variables derived from a series of factor analyses of parent, teacher, and student responses, all of which measure some aspect of the young person's attitude to or engagement with life in general or school in particular, or measure the extent to which their attitude or engagement may have been affected by the environment in which they live or some events in their lives. These scale variables, and the items used to construct them, are discussed in detail in the chapter "Scale variables, cluster variables, and history variables". In particular, we are looking at subsets of scale variables that describe the young person's home life:

- the student's view that:
  - the *family communicates well*

- there is *family pressure*
- the *family is inclusive, or supportive;*
- the student's information about the extent to which they:
  - were involved in *risky behaviour*
  - expressed *rejection*
  - had experienced *adverse events*
  - had *friends involved in risky behaviour*
  - had *solid friendships*
  - had *extending friendships*
  - had *praise and achievement* in any sphere of their life;
- the parent's view that the young person was:
  - *self-confident*
  - showed *self-efficacy*
  - or *responsibility*.

Variables that describe their school life:

- teacher views on:
  - the student and *NCEA assessment*
  - *overall ability*
  - and the attitudinal competencies of *thinking and learning, focused and responsible, social skills, and social difficulties;*
- student views of the extent to which they are:
  - *engaged in school*
  - *affirmed at school*
  - *satisfied with their subject mix*
  - use *internal markers* of achievement
  - in a *positive learning environment*
  - *absorbed in learning*
  - *disengaged in learning*
  - in a *disrupted learning environment*
  - experiencing *relevant learning opportunities*
  - in a *comparative learning environment, and their*
  - *attitude to all work.*

We have used 1-way ANOVAs in which the demographic home and school variables (current and historical, in the case of income and school decile) are used as explanatory variables.

The results are reported for all 31 outcome variables, whether the differences were statistically significant or not. Variables where there were differences that were significant at the 1 percent level, or were almost significant at that level and the demographic variable accounted for over 2 percent of the variability, are in **bold face**.

## Gender

There are gender differences for several variables, most of them measuring a social or attitudinal attribute. Where there were differences, they were usually in females' favour.

**Table 4: Associations between engagement, attitude, and experience variables and gender**

Scale variable	Males	Females	p-value	R <sup>2</sup> (%)
Cognitive competency	5.96	6.19	0.079	0.7
<b>Student view of family life</b>				
Family communicates well	6.57	6.62	0.703	0
Family pressure	4.59	4.32	0.090	0.7
Family is inclusive	7.81	7.83	0.848	0
Family is supportive	8.11	7.80	0.043	0.9
<b>Student views of friends and experiences</b>				
Adverse events	1.86	2.00	0.123	0.5
Rejection	2.19	2.11	0.872	0
<b>Praise and achievement</b>	<b>5.63</b>	<b>5.99</b>	<b>0.010</b>	<b>1.5</b>
Risky behaviour	3.62	3.58	0.766	0
Friends with risky behaviour	4.10	4.18	0.649	0
<b>Extending friendships</b>	<b>7.06</b>	<b>7.44</b>	<b>0.0007</b>	<b>2.6</b>
Solid friendships	8.26	8.53	0.018	1.2
<b>Parent view of student</b>				
Self-confidence	6.97	7.09	0.298	0.2
Self-efficacy	7.01	7.28	0.019	1.3
<b>Responsibility</b>	<b>7.08</b>	<b>7.57</b>	<b>&lt; 0.0001</b>	<b>3.7</b>
<b>Teachers' view of student</b>				
<b>Focused and responsible</b>	<b>6.55</b>	<b>7.15</b>	<b>0.0001</b>	<b>3.5</b>
<b>NCEA assessment</b>	<b>3.27</b>	<b>3.47</b>	<b>0.010</b>	<b>1.6</b>
Overall ability	6.19	6.64	0.022	1.3
<b>Social difficulties</b>	<b>2.60</b>	<b>2.06</b>	<b>&lt; 0.0001</b>	<b>6.1</b>
<b>Social skills</b>	<b>5.98</b>	<b>6.59</b>	<b>&lt; 0.0001</b>	<b>4.9</b>
<b>Thinking and learning</b>	<b>6.08</b>	<b>6.56</b>	<b>0.001</b>	<b>2.6</b>
<b>Student views on school and classes</b>				
Absorbed in learning	5.83	5.98	0.182	0.4
Affirmed at school	5.05	5.26	0.029	1.2
Attitude to all work	6.65	6.44	0.041	1.0
<b>Comparative learning environment</b>	<b>4.23</b>	<b>3.38</b>	<b>&lt; 0.0001</b>	<b>7.0</b>
Engaged in school	5.55	5.61	0.602	0.1

Scale variable	Males	Females	<i>p</i> -value	<i>R</i> <sup>2</sup> (%)
<i>Student views on school and classes - continued</i>				
<b>Internal markers of achievement</b>	<b>7.42</b>	<b>7.79</b>	<b>0.007</b>	<b>1.7</b>
<b>Disengaged in learning</b>	<b>4.68</b>	<b>4.17</b>	<b>&lt; 0.0001</b>	<b>4.2</b>
<b>Disrupted learning environment</b>	<b>5.41</b>	<b>5.02</b>	<b>0.0003</b>	<b>3.1</b>
Positive learning environment	6.83	6.75	0.361	0.2
Satisfied with subject mix	7.71	7.62	0.493	0.1
Relevant learning opportunities	4.98	4.80	0.061	0.8

**Bold face** indicates that the differences were significant at the 1 percent level.

Very few of the apparent gender differences remain significant once other variables are included in the model.

## Ethnicity

There are few apparent differences between the two broadly categorised ethnic groups, and few of these remain significant once other variables are added to the model. Where there are differences, they are to do with risky behaviour, the teachers' perceptions of the young person's attitude or teacher expectations (the attitudinal competencies and overall ability), and the young person's engagement in school and satisfaction with their current subject mix.

**Table 5: Associations between engagement, attitude, and experience variables and ethnicity**

Scale variable	Māori/Pacific	Pākehā/Asian	p-value	R <sup>2</sup> (%)
<b>Cognitive competency</b>	<b>5.43</b>	<b>6.17</b>	<b>&lt; 0.0001</b>	<b>8.7</b>
<b>Student view of family life</b>				
Family communicates well	6.39	6.64	0.374	0.4
Family pressure	4.52	4.45	0.920	0
Family is inclusive	7.84	7.81	0.753	0.1
Family is supportive	8.19	7.91	0.353	0.5
<b>Student views of friends and experiences</b>				
Adverse events	2.01	1.91	0.744	0.1
Rejection	2.19	2.18	0.192	0.7
Praise and achievement	5.95	5.80	0.426	0.4
Risky behaviour	4.03	3.53	0.035	1.5
<b>Friends with risky behaviour</b>	<b>4.94</b>	<b>4.02</b>	<b>0.001</b>	<b>3.1</b>
Extending friendships	7.48	7.20	0.190	0.7
Solid friendships	8.50	8.37	0.738	0.1
<b>Parent view of student</b>				
Self-confidence	6.98	7.03	0.832	0
Self-efficacy	7.01	7.15	0.611	0.2
Responsibility	6.95	7.37	0.072	1.2
<b>Teachers' view of student</b>				
<b>Focused and responsible</b>	<b>5.93</b>	<b>6.70</b>	<b>&lt; 0.0001</b>	<b>5.4</b>
<b>NCEA assessment</b>	<b>3.01</b>	<b>3.43</b>	<b>0.0004</b>	<b>3.8</b>
<b>Overall ability</b>	<b>5.26</b>	<b>6.63</b>	<b>&lt; 0.0001</b>	<b>5.9</b>
Social difficulties	2.65	2.29	0.069	1.3
Social skills	5.97	6.33	0.182	0.8
<b>Thinking and learning</b>	<b>5.53</b>	<b>6.44</b>	<b>&lt; 0.0001</b>	<b>4.5</b>
<b>Student views on school and classes</b>				
Absorbed in learning	5.78	5.94	0.156	0.9
Affirmed at school	5.05	5.18	0.508	0.3

Scale variable	Māori/Pacific	Pākehā/Asian	p-value	R <sup>2</sup> (%)
<i>Student views on school and classes - continued</i>				
Attitude to all work	6.26	6.61	0.027	1.8
Comparative learning environment	3.70	3.87	0.097	1.1
<b>Engaged in school</b>	<b>5.13</b>	<b>5.67</b>	<b>0.001</b>	<b>3.2</b>
Internal markers of achievement	7.46	7.63	0.595	0.3
Disengaged in learning	4.78	4.39	0.074	1.2
Disrupted learning environment	5.47	5.19	0.171	0.8
Positive learning environment	6.63	6.82	0.333	0.5
<b>Satisfied with subject mix</b>	<b>7.13</b>	<b>7.75</b>	<b>0.009</b>	<b>2.3</b>
Relevant learning opportunities	4.84	4.90	0.843	0.1

**Bold face** indicates that the differences were significant at the 1 percent level.

## Family income and financial situation

There are some apparent differences by family income, and family financial situation. Some of these differences are statistically significant only for age-5 family income, some only for age-14 family income, and some only for family financial situation; others are significant for two or more of the income measures. The differences significant only for age-5 family income relate to parental views of self-confidence and responsibility, and to social difficulties, all likely to be long-term characteristics of the young people; the differences significant only for age-14 family income were social skills and engagement in school; the differences significant only for financial situation were inclusive family and extending friendships. Many of the variables significant for differences in both age-14 income and family financial situation were those that related to the world the young person experienced at age 16 or what was happening to them: how the family relates, school engagement, adverse events, and risky behaviour.

**Table 6: Associations between engagement, attitude, and experience variables and age-5 family income**

Scale variable	< \$30K	\$30-\$60K	\$60-\$80K	> \$80K	p-value	R <sup>2</sup> (%)
<b>Cognitive competency</b>	<b>5.47</b>	<b>6.06</b>	<b>6.52</b>	<b>6.75</b>	<b>&lt; 0.0001</b>	<b>9.5</b>
<b>Student view of family life</b>						
Family communicates well	6.39	6.55	6.60	7.12	0.030	2.4
Family pressure	4.57	4.87	4.35	4.29	0.816	0.4
Family is inclusive	7.76	7.76	7.82	8.15	0.311	1.1
Family is supportive	7.73	7.92	7.81	8.58	0.015	2.7
<b>Student views of friends and experiences</b>						
Adverse events	2.10	1.88	1.92	1.81	0.240	1.2
Rejection	2.19	2.22	2.06	2.27	0.855	0.3
Praise and achievement	5.76	5.69	6.00	6.16	0.132	1.6
Risky behaviour	3.94	3.46	3.59	3.59	0.015	2.8
<b>Friends with risky behaviour</b>	<b>4.69</b>	<b>3.98</b>	<b>4.15</b>	<b>3.82</b>	<b>0.006</b>	<b>3.2</b>
Extending friendships	7.21	7.19	7.37	7.44	0.319	1.1
Solid friendships	8.35	8.34	8.55	8.60	0.149	1.5
<b>Parent view of student</b>						
<b>Self-confidence</b>	<b>6.83</b>	<b>6.94</b>	<b>7.43</b>	<b>7.31</b>	<b>0.008</b>	<b>3.1</b>
<b>Self-efficacy</b>	<b>6.91</b>	<b>7.04</b>	<b>7.59</b>	<b>7.45</b>	<b>0.001</b>	<b>4.1</b>
<b>Responsibility</b>	<b>7.02</b>	<b>7.24</b>	<b>7.79</b>	<b>7.67</b>	<b>0.0004</b>	<b>4.6</b>
<b>Teachers' view of student</b>						
<b>Focused and responsible</b>	<b>6.34</b>	<b>6.87</b>	<b>7.27</b>	<b>7.09</b>	<b>0.004</b>	<b>3.7</b>
<b>NCEA assessment</b>	<b>3.13</b>	<b>3.36</b>	<b>3.54</b>	<b>3.56</b>	<b>0.005</b>	<b>3.6</b>
<b>Overall ability</b>	<b>5.76</b>	<b>6.37</b>	<b>7.15</b>	<b>6.81</b>	<b>0.0003</b>	<b>4.9</b>
<b>Social difficulties</b>	<b>2.65</b>	<b>2.34</b>	<b>2.14</b>	<b>2.06</b>	<b>0.007</b>	<b>3.4</b>

Scale variable	< \$30K	\$30-\$60K	\$60-\$80K	> \$80K	p-value	R <sup>2</sup> (%)
<i>Teachers' view of student - continued</i>						
<b>Social skills</b>	<b>6.05</b>	<b>6.20</b>	<b>6.75</b>	<b>6.45</b>	<b>0.014</b>	<b>3.0</b>
<b>Thinking and learning</b>	<b>5.96</b>	<b>6.27</b>	<b>6.84</b>	<b>6.55</b>	<b>0.001</b>	<b>4.3</b>
<i>Student views on school and classes</i>						
Absorbed in learning	5.81	5.91	6.07	5.87	0.735	0.5
Affirmed at school	4.93	5.14	5.40	5.30	0.038	2.4
Attitude to all work	6.34	6.49	6.63	6.89	0.023	2.7
Comparative learning environment	3.93	3.90	3.70	3.51	0.480	0.8
Engaged in school	5.37	5.58	5.76	5.68	0.200	1.5
Internal markers of achievement	7.29	7.60	8.10	7.61	0.014	3.0
Disengaged in learning	4.68	4.42	4.22	4.40	0.194	1.5
Disrupted learning environment	5.42	5.23	5.26	4.71	0.084	2.0
Positive learning environment	6.77	6.80	6.87	6.78	0.881	0.3
Satisfied with subject mix	7.44	7.73	7.58	7.86	0.383	1.0
Relevant learning opportunities	5.03	4.96	4.70	4.66	0.087	1.9

**Bold face** indicates that the differences were significant at the 1 percent level.

Table 7: Associations between engagement, attitude, and experience variables and age-14 family income

Scale variable	< \$30K	\$30–\$60K	\$60–\$100K	> \$100K	p-value	R <sup>2</sup> (%)
<b>Cognitive competency</b>	5.61	5.58	6.31	5.53	< 0.0001	8.7
Student view of family life						
<b>Family communicates well</b>	6.23	6.36	6.80	6.82	0.009	3.0
Family pressure	4.67	4.41	4.44	4.35	0.372	1.0
Family is inclusive	7.51	7.72	8.02	7.91	0.034	2.3
<b>Family is supportive</b>	7.40	7.78	8.15	8.24	0.003	3.5
Student views of friends and experiences						
<b>Adverse events</b>	2.39	1.85	1.86	1.80	0.0003	4.8
Rejection	2.39	2.11	2.17	2.26	0.510	0.7
Praise and achievement	5.56	5.51	5.94	6.03	0.039	2.3
<b>Risky behaviour</b>	4.18	3.60	3.36	3.54	0.005	3.3
<b>Friends with risky behaviour</b>	4.89	4.12	3.88	4.01	0.003	3.6
Extending friendships	6.84	7.39	7.32	7.25	0.042	2.2
Solid friendships	8.27	8.45	8.39	8.40	0.942	0.2
Parent view of student						
Self-confidence	6.72	6.87	7.07	7.26	0.057	2.1
<b>Self-efficacy</b>	6.86	6.94	7.19	7.40	0.019	2.7
Responsibility	6.98	7.22	7.41	7.48	0.119	1.7
Teachers' view of student						
<b>Focused and responsible</b>	6.52	6.45	7.04	7.14	0.001	4.4
<b>NCEA assessment</b>	3.19	3.22	3.47	3.50	0.0008	4.6
<b>Overall ability</b>	6.00	5.82	6.64	6.92	< 0.0001	5.6
Social difficulties	2.47	2.55	2.31	2.15	0.094	1.9
<b>Social skills</b>	6.03	5.97	6.44	6.51	0.002	4.0
<b>Thinking and learning</b>	5.88	5.87	6.56	6.63	< 0.0001	6.2
Student views on school and classes						
Absorbed in learning	5.89	5.96	5.88	5.98	0.178	1.5
Affirmed at school	4.97	5.08	5.17	5.34	0.026	2.7
Attitude to all work	6.36	6.37	6.67	6.68	0.029	2.6
Comparative learning environment	3.73	4.00	5.70	3.81	0.666	0.6
<b>Engaged in school</b>	5.40	5.40	5.72	5.74	0.003	3.8
Internal markers of achievement	7.37	7.54	7.70	7.66	0.626	0.6

Scale variable	< \$30K	\$30-\$60K	\$60-\$100K	> \$100K	p-value	R <sup>2</sup> (%)
<i>Student views on school and classes - continued</i>						
Disengaged in learning	4.60	4.56	4.27	4.45	0.349	1.1
Disrupted learning environment	5.30	5.34	5.16	5.14	0.567	0.7
Positive learning environment	6.76	6.81	6.75	6.91	0.198	1.4
<b>Satisfied with subject mix</b>	<b>7.55</b>	<b>7.66</b>	<b>7.76</b>	<b>7.72</b>	<b>0.007</b>	<b>1.7</b>
Relevant learning opportunities	5.11	5.02	4.84	4.80	0.227	1.4

**Bold face** indicates that the differences were significant at the 1 percent level.

Table 8: Associations between engagement, attitude, and experience variables and family financial situation

Scale variable	Difficult	Moderate	Comfortable	p-value	R <sup>2</sup> (%)
Cognitive competency	5.73	5.62	6.41	< 0.0001	7.2
Student view of family life					
Family communicates well	5.99	6.61	6.80	< 0.0001	4.1
Family pressure	4.84	4.47	4.31	0.050	1.3
Family is inclusive	7.33	7.94	7.94	0.0009	3.1
Family is supportive	7.27	7.99	8.17	< 0.0001	4.2
Student views of friends and experiences					
Adverse events	2.26	1.98	1.80	0.0008	3.2
Rejection	2.23	2.25	2.13	0.372	0.4
Praise and achievement	5.58	5.81	5.90	0.257	0.6
Risky behaviour	3.92	3.66	3.47	0.047	1.4
Friends with risky behaviour	4.65	4.22	3.91	0.011	2.0
Extending friendships	6.84	7.33	7.34	0.003	2.6
Solid friendships	8.20	8.41	8.45	0.296	0.5
Parent view of student					
Self-confidence	6.61	7.12	7.12	0.006	2.3
Self-efficacy	6.67	7.16	7.28	0.0006	3.4
Responsibility	6.93	7.30	7.45	0.010	2.1
Teachers' view of student					
Focused and responsible	6.48	6.61	7.04	0.008	2.3
NCEA assessment	3.45	3.34	3.17	0.012	2.2
Overall ability	5.80	6.14	6.69	0.002	3.0
Social difficulties	2.32	2.49	2.28	0.239	0.7
Social skills	5.81	6.27	6.41	0.008	2.3
Thinking and learning	5.76	6.21	6.51	0.001	3.3
Student views on school and classes					
Absorbed in learning	5.86	5.90	5.93	0.914	0
Affirmed at school	4.84	5.19	5.22	0.025	1.8
Attitude to all work	6.28	6.47	6.66	0.028	1.7
Comparative learning environment	3.74	3.92	3.88	0.597	0.2
Engaged in school	5.32	5.59	5.65	0.094	1.1
Internal markers of achievement	7.33	7.55	7.70	0.152	0.9
Disengaged in learning	4.50	4.46	4.40	0.820	0.1

Scale variable	Difficult	Moderate	Comfortable	<i>p</i> -value	<i>R</i> <sup>2</sup> (%)
<i>Student views on school and classes - continued</i>					
Disrupted learning environment	5.33	5.31	5.15	0.344	0.5
Positive learning environment	6.56	6.80	6.86	0.080	1.2
Satisfied with subject mix	7.43	7.72	7.70	0.366	0.5
Relevant learning opportunities	4.89	4.87	4.97	0.813	0

**Bold face** indicates that the differences were significant at the 1 percent level.

### Maternal qualifications

The variables with apparent differences associated with maternal qualifications are to do with risky behaviour (on the whole, less likely for the young people with mothers with higher levels of education), levels of self-efficacy and responsibility as judged by a parent and the teachers, and the engagement variables (on the whole these variables are all higher for the young people with mothers with higher levels of education).

**Table 9: Associations between engagement, attitude, and experience variables and maternal qualifications**

Scale variable	None	Mid-secondary/ Trade	Senior-secondary/ Tertiary	University	p-value	R <sup>2</sup> (%)
<b>Cognitive competency</b>	5.13	5.90	6.40	6.97	< 0.0001	18.1
<b>Student view of family life</b>						
Family communicates well	6.54	6.47	6.82	6.76	0.335	1.0
Family pressure	4.46	4.64	4.23	4.31	0.041	2.2
Family is inclusive	7.90	7.69	8.06	7.88	0.271	1.2
Family is supportive	8.21	7.82	8.09	7.96	0.185	1.4
<b>Student views of friends and experiences</b>						
Adverse events	2.03	2.00	1.75	1.80	0.112	1.7
Rejection	2.13	2.14	2.19	2.45	0.240	1.2
Praise and achievement	5.55	5.88	5.65	5.97	0.187	1.4
<b>Risky behaviour</b>	<b>3.70</b>	<b>3.85</b>	<b>3.20</b>	<b>3.27</b>	<b>0.001</b>	<b>4.0</b>
<b>Friends with risky behaviour</b>	<b>4.56</b>	<b>4.43</b>	<b>3.72</b>	<b>3.53</b>	<b>0.0002</b>	<b>4.9</b>
Extending friendships	7.20	7.24	7.14	7.38	0.700	0.5
Solid friendships	8.36	8.35	8.48	8.40	0.869	0.3
<b>Parent view of student</b>						
Self-confidence	6.65	7.09	7.02	7.16	0.071	2.0
<b>Self-efficacy</b>	<b>6.81</b>	<b>7.13</b>	<b>7.36</b>	<b>7.25</b>	<b>0.003</b>	<b>3.6</b>
<b>Responsibility</b>	<b>6.64</b>	<b>7.31</b>	<b>7.51</b>	<b>7.63</b>	<b>0.0002</b>	<b>5.4</b>
<b>Teachers' view of student</b>						
<b>Focused and responsible</b>	<b>6.14</b>	<b>6.54</b>	<b>7.23</b>	<b>7.69</b>	<b>&lt; 0.0001</b>	<b>11.2</b>
<b>NCEA assessment</b>	<b>3.06</b>	<b>3.27</b>	<b>3.43</b>	<b>3.74</b>	<b>&lt; 0.0001</b>	<b>7.7</b>
<b>Overall ability</b>	<b>5.47</b>	<b>6.14</b>	<b>6.66</b>	<b>7.50</b>	<b>&lt; 0.0001</b>	<b>10.8</b>
<b>Social difficulties</b>	<b>2.71</b>	<b>2.50</b>	<b>2.08</b>	<b>1.93</b>	<b>&lt; 0.0001</b>	<b>6.6</b>
<b>Social skills</b>	<b>6.03</b>	<b>6.04</b>	<b>6.60</b>	<b>6.80</b>	<b>&lt; 0.0001</b>	<b>7.3</b>
<b>Thinking and learning</b>	<b>5.74</b>	<b>6.08</b>	<b>6.59</b>	<b>7.04</b>	<b>&lt; 0.0001</b>	<b>9.6</b>
<b>Student views on school and classes</b>						
Absorbed in learning	5.71	5.90	5.83	6.05	0.095	1.9
<b>Affirmed at school</b>	<b>5.07</b>	<b>5.02</b>	<b>5.18</b>	<b>5.51</b>	<b>0.005</b>	<b>3.6</b>

Scale variable	None	Mid-secondary/ Trade	Senior-secondary/ Tertiary	University	p-value	R <sup>2</sup> (%)
Student views on school and classes - <i>continued</i>						
Attitude to all work	<b>6.18</b>	6.51	6.52	6.90	0.004	3.7
Comparative learning environment	<b>3.69</b>	3.98	3.59	3.57	0.001	4.2
Engaged in school	<b>5.47</b>	5.37	5.76	6.05	< 0.0001	6.3
Internal markers of achievement	<b>7.07</b>	7.62	7.51	7.98	0.006	3.4
Disengaged in learning	4.53	4.59	4.22	4.18	0.041	2.4
Disrupted learning environment	5.05	5.31	5.19	5.09	0.356	1.1
Positive learning environment	6.75	6.71	6.88	6.94	0.228	1.4
Satisfied with subject mix	7.66	7.59	7.58	7.94	0.396	0.1
Relevant learning opportunities	5.02	4.86	4.92	4.84	0.478	0.8

**Bold face** indicates that the differences were significant at the 1 percent level.

### School decile

The only factor to be indicative with respect to current decile group is *disrupted learning environment*, which is slightly more likely in low-decile schools (Table 10)

More variables show significant differences across the historical pattern of school decile (Table 11):: the parent perception of the young person's *self-confidence* and *responsibility*, and all of the teacher perception variables. In each case, the students who have mainly been in high-decile schools tend to have higher scores than those in low-decile schools (with the exception of *social difficulties*, for which students in high-decile schools have lower scores, indicating fewer difficulties). Young people who have mainly attended high-decile schools also on average had higher scores for *engaged in school* and *attitude to work*, and lower scores for *disengaged in learning* and *disrupted learning environment*.

**Table 10: Associations between engagement, attitude, and experience variables and age-16 school decile**

Scale variable	Decile 1–2	Decile 3–8	Decile 9–10/ Private	p-value	R <sup>2</sup> (%)
Cognitive competency	5.94	6.00	6.12	0.837	0.2
Student view of family life					
Family communicates well	6.60	6.60	6.63	0.884	0.2
Family pressure	4.90	4.43	4.42	0.419	0.7
Family is inclusive	7.75	7.83	7.84	0.969	0.1
Family is supportive	7.57	7.96	7.99	0.696	0.3
Student views of friends and experiences					
Adverse events	1.99	1.90	1.94	0.840	0.2
Rejection	2.64	2.15	2.21	0.360	0.8
Praise and achievement	5.96	5.71	5.90	0.493	0.6
Risky behaviour	4.17	3.60	3.60	0.368	0.7
Friends with risky behaviour	4.39	4.11	4.14	0.902	0.1
Extending friendships	7.29	7.17	7.27	0.803	0.2
Solid friendships	8.28	8.26	8.47	0.417	0.7
Parent view of student					
Self-confidence	6.84	6.95	7.11	0.570	0.5
Self-efficacy	7.37	6.95	7.26	0.081	1.6
Responsibility	7.45	7.19	7.40	0.396	0.7
Teachers' view of student					
Focused and responsible	6.72	6.97	6.83	0.694	0.4
NCEA assessment	3.04	3.47	3.34	0.100	1.6
Overall ability	6.04	6.35	6.51	0.698	0.4
Social difficulties	2.22	2.23	2.39	0.495	0.6

Scale variable	Decile 1–2	Decile 3–8	Decile 9–10/ Private	p-value	R <sup>2</sup> (%)
<i>Teachers' view of student - continued</i>					
Social skills	6.51	6.35	6.24	0.483	0.6
Thinking and learning	6.11	6.40	6.33	0.438	0.7
<i>Student views on school and classes</i>					
Absorbed in learning	5.99	6.00	5.86	0.717	0.3
Affirmed at school	5.08	5.18	5.70	0.674	0.4
Attitude to all work	6.13	6.56	6.57	0.416	0.7
Comparative learning environment	4.00	3.70	3.81	0.409	0.7
Engaged in school	5.44	5.67	5.53	0.519	0.6
Internal markers of achievement	7.69	7.58	7.59	0.951	0.1
Disengaged in learning	4.12	4.31	4.50	0.546	0.5
Disrupted learning environment	5.54	5.06	5.25	0.020	2.4
Positive learning environment	7.04	6.84	6.75	0.562	0.5
Satisfied with subject mix	7.92	7.80	7.58	0.460	0.6
Relevant learning opportunities	5.11	4.92	4.83	0.307	0.9

Table 11: Associations between engagement, attitude, and experience variables and history of age-8–14 school decile

Scale variable	Mainly decile 1–2	Mainly decile 3–8	Mainly decile 9–10	Mixed over time	p-value	R <sup>2</sup> (%)
<b>Cognitive competency</b>	<b>4.57</b>	<b>5.90</b>	<b>6.44</b>	<b>5.99</b>	<b>&lt; 0.0001</b>	<b>12.3</b>
<b>Student view of family life</b>						
Family communicates well	6.83	6.38	6.74	6.65	0.237	1.2
Family pressure	4.52	4.54	4.33	4.47	0.834	0.3
Family is inclusive	8.09	7.75	7.84	7.83	0.738	0.4
Family is supportive	8.41	7.69	8.12	7.95	0.090	1.8
<b>Student views of friends and experiences</b>						
Adverse events	2.35	1.89	1.84	1.97	0.083	1.9
Rejection	2.53	2.15	2.24	2.17	0.343	1.0
Praise and achievement	5.60	5.79	5.91	5.59	0.279	1.1
Risky behaviour	3.83	3.63	3.52	3.62	0.848	0.3
Friends with risky behaviour	4.44	4.21	4.04	4.21	0.736	0.5
Extending friendships	7.38	7.25	7.31	6.96	0.146	1.5
Solid friendships	8.57	8.40	8.36	8.26	0.550	0.7
<b>Parent view of student</b>						
<b>Self-confidence</b>	<b>6.98</b>	<b>6.70</b>	<b>7.25</b>	<b>7.06</b>	<b>0.002</b>	<b>3.8</b>
Self-efficacy	7.08	6.96	7.30	7.08	0.132	1.6
<b>Responsibility</b>	<b>6.90</b>	<b>7.12</b>	<b>7.54</b>	<b>7.21</b>	<b>0.007</b>	<b>3.2</b>
<b>Teachers' view of student</b>						
<b>Focused and responsible</b>	<b>5.45</b>	<b>6.67</b>	<b>7.21</b>	<b>6.68</b>	<b>&lt; 0.0001</b>	<b>7.7</b>
<b>NCEA assessment</b>	<b>2.71</b>	<b>3.27</b>	<b>3.56</b>	<b>3.27</b>	<b>&lt; 0.0001</b>	<b>8.1</b>
<b>Overall ability</b>	<b>4.78</b>	<b>6.24</b>	<b>6.80</b>	<b>6.13</b>	<b>&lt; 0.0001</b>	<b>7.2</b>
<b>Social difficulties</b>	<b>3.11</b>	<b>2.47</b>	<b>2.13</b>	<b>2.41</b>	<b>0.0001</b>	<b>5.5</b>
<b>Social skills</b>	<b>5.48</b>	<b>6.08</b>	<b>6.53</b>	<b>6.26</b>	<b>0.0008</b>	<b>4.6</b>
<b>Thinking and learning</b>	<b>5.16</b>	<b>6.13</b>	<b>6.64</b>	<b>6.17</b>	<b>&lt; 0.0001</b>	<b>7.0</b>
<b>Student views on school and classes</b>						
Absorbed in learning	6.03	5.83	5.98	5.82	0.743	0.5
Affirmed at school	4.96	5.18	5.21	4.96	0.199	1.4
<b>Attitude to all work</b>	<b>6.21</b>	<b>6.44</b>	<b>6.77</b>	<b>6.32</b>	<b>0.006</b>	<b>3.4</b>
Comparative learning environment	4.08	3.81	3.80	3.90	0.665	0.6
<b>Engaged in school</b>	<b>5.10</b>	<b>5.47</b>	<b>5.74</b>	<b>5.52</b>	<b>0.015</b>	<b>3.0</b>

Scale variable	Mainly decile 1–2	Mainly decile 3–8	Mainly decile 9–10	Mixed over time	<i>p</i> -value	<i>R</i> <sup>2</sup> (%)
Student views on school and classes - <i>continued</i>						
Internal markers of achievement	7.15	7.55	7.68	7.43	0.034	2.5
<b>Disengaged in learning</b>	<b>4.76</b>	<b>4.58</b>	<b>4.44</b>	<b>4.26</b>	<b>0.012</b>	<b>3.0</b>
<b>Disrupted learning environment</b>	<b>5.54</b>	<b>5.27</b>	<b>5.34</b>	<b>5.06</b>	<b>0.006</b>	<b>4.6</b>
Positive learning environment	6.67	6.84	6.78	6.68	0.313	1.1
Satisfied with subject mix	7.21	7.68	7.68	7.67	0.447	0.9
Relevant learning opportunities	5.22	5.00	4.86	4.85	0.052	2.2

**Bold face** indicates that the differences were significant at the 1 percent level.

This section gives us clues of patterns of associations between variables. There are many apparent associations between the demographic variables and engagement variables, just as there are between the engagement variables themselves. The next section explores the relationships between these same engagement, family, and friends variables and the discrete engagement variables. The chapter after that is about starting to tease apart these associations, and to identify which variables are most strongly associated with each other, starting with the variables to do with family and friends.

