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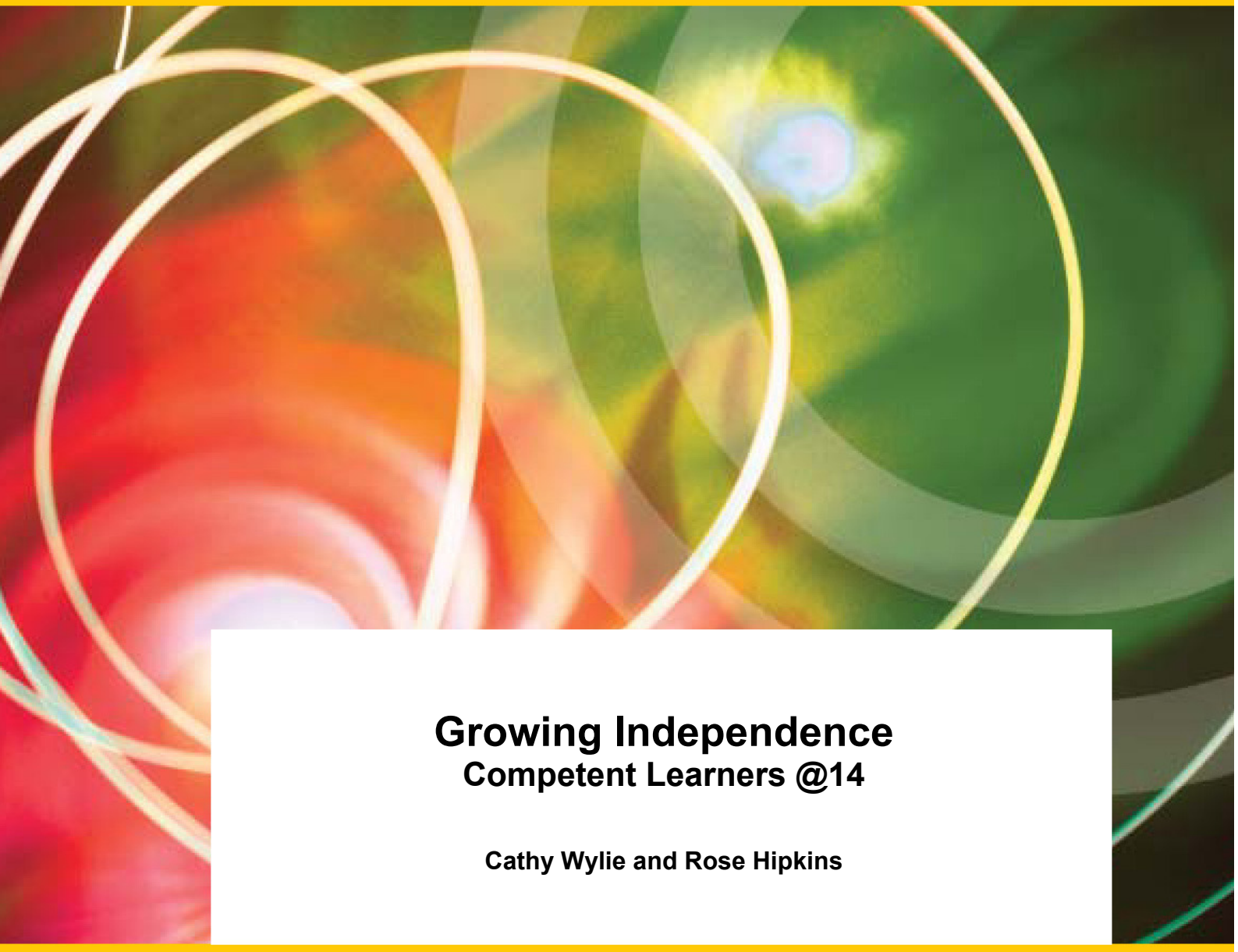

Growing Independence
Competent Learners @14

Cathy Wylie and Rose Hipkins

RESEARCH DIVISION
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NEW ZEALAND COUNCIL FOR EDUCATIONAL RESEARCH

TE RŪNANGA O AOTEAROA MŌ TE RANGAHAU I TE MĀTAURANGA

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The fieldwork undertaken when the study participants were aged 14 took place from late 2002 to late 2003. What is a complex project all went smoothly thanks to Cathy Lythe and Tineke Fijn, who co-ordinated the fieldwork, and our very able fieldwork team which consisted of Marion Bayne, Clare Falkner, Betty Irons, Joanne Leith, Patricia Meagher-Lundberg, Elizabeth Wagner, Marilyn Weir, Anna Wildey, Brigid Wikinson, and Kath Wood. The data entry and cleaning benefited from the keen eyes of Kim Lau, Denise Falloon, and Melissa Anslow. We are also grateful to the high quality secretarial support of Christine Williams, and the copy editing of Shelley Carlyle.

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The statistical analysis used in this report was undertaken by NZCER's statistics team: Edith Hodgen, Hilary Ferral, and Rachel Dingle, with Jean Thompson. Their comprehensive work is described in the technical report that accompanies this one.

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Summary

The Competent Children, Competent Learners study is following a cohort of around 500. It began in 1993, when the cohort was near-age 5, and attending early childhood education in the Wellington region. This report is one of four that describes the cohort at age 14, with analysis of the experiences and resources that are linked to differences in performance and engagement in school and learning in mid-adolescence in New Zealand.

We aim to describe what our sample was experiencing in five dimensions: their use of leisure, their relations with peers, their interactions with parents, their values and events in their lives, and their engagement in school and learning. Then we want to see how engagement in school and learning is affected by experiences in the other four dimensions of mid-adolescent experience, and how it reflects previous patterns.

Growing Independence is the title of this report because independence is a theme running through all these dimensions. The young people in the study were assuming more responsibility for themselves—not always in ways that seem positive to adults. They were spending more time with their peers, less with their parents. Yet they were not yet fully independent: they were still needing parental support and interest. And as we looked back over time, we saw that the kind of independence different individuals were growing could be linked to the earlier ways they had spent time and related to people, the habits in which they were comfortable.

There are many encouraging findings. Most of the sample had reached the venturesome stage of mid-adolescence in good shape. They have positive interactions with family and friends, and they value family and friends. Learning and school continue to engage them. They have out-of-school activities they enjoy spending their time on. At the same time, they are also exercising more independence, forming themselves more as distinct individuals. Feeling respected and known, by teachers as well as family, becomes increasingly important. This can mean that there is more questioning of adult expectations and structures, as independence and individual identities grow.

But some appeared to have already formed identities that did not find support or enjoyment with family or in school, and were focused on activities of risk, defiance, or manipulation (e.g. bullying relations). Their sphere of experience often seemed narrower, however, and less satisfying: a repetitive circle rather than the spirals of growing independence evident in the majority. These are the young people who are often of most concern to parents, teachers, other adults, other students, and policy makers.

The analysis reported here underlines the importance of early foundations; but it also shows that the die is not cast: that what teachers and parents do, and the habits they support in children and young people, and the learning environments they offer Year 9 and Year 10 students, do matter.

The Competent Children, Competent Learners study collects a wealth of material. In this report, we have aimed to strike a balance between too much detail, and too little. We summarise the statistical analysis that is described fully in a separate technical report. The chart at the end of this summary outlines the main variables used in this analysis.

ACTIVITIES AND INTERESTS

Television remained a prime leisure activity for these young adults, as was being in the company of others—hanging out, or in a more organised way. Sport, reading, and computer use were also activities that happened often for many in the sample. There were marked gender differences: females more exercised by reading and the arts, and social communication; males by computer games, sport, and television. Family resources were also reflected: lower income or maternal qualification levels went along with less engagement not just with what one might expect: reading, computer use, homework, and arts classes, but also with less engagement in competitive sport.

Four clusters of young people were found:

- Sports players (34 percent);
- Electronic games~no strong interests group (24 percent);
- All-rounders (reading/arts/sports) (28 percent); and
- Creative interests (13 percent).

Those who were in the *electronic game~no strong interests* group had lower competency scores on average. Interestingly, we found in looking back to parents' reports of their children's favourite interests at age 5 that it was those who did not have a clear interest other than physical play, who had lower average scores at age 14.

Some signs of growing independence among the sample were the marked increases since age 12 in those who have a phone in their bedroom (probably mobile), those with computers, and Internet access. A third now had a TV set in their room.

Television use remained at much the same level as at age 12. Cartoons and sitcoms remained popular, but they were joined by increased interest in adult programmes, and to a lesser extent, reality TV and sport: all programmes with some narrative line. There were some gender differences in programme preferences.

Those who watched TV for 2 or more hours a day tended to have lower average competency scores, as did those who had watched this amount of television over the ages 8 to 14. This heavy use of TV in leisure hours was also associated with disengagement in learning.

Computer use was now almost universal, particularly the Internet. Main uses were for information for school, email, online chatting, surfing, games, and downloading material. At this stage, few were using it to bank or buy things. There were some gender differences here, with males more interested in games, installing software or writing programmes, and girls, emailing, seeking information, wordprocessing, or chatting online. ICT can be used to extend knowledge, extend the use of skills, or to support consumption. There was less use of ICT to extend individuals by those with non-qualified mothers. We found little association between computer use and competency levels, perhaps because by age 14 most of the sample were using a computer, and making similar kinds of use of it.

Enjoyment of reading—which turns out to be a key indicator for learning engagement as well as competency levels—had declined since age 12; there was less use of public libraries, though only half the sample had a reasonable number of books in their home. Social characteristics are reflected now in more differences in reading enjoyment and access to reading material than we saw at earlier ages. However, newspaper readers increased (to just over half).

Writing was also enjoyed less at age 14. Email writing had increased markedly since age 12, but there was a decline in reports and creative writing.

Just over a third of the sample now had paid work, mostly informal. There were no clear associations between having paid work and competency levels, though a non-significant trend to lower average scores was evident for those working more than 5 hours a week.

Club membership was slightly down from age 12, with a drop in those belonging to service groups. Participation in music had also dropped. Just under half had lessons outside school, mostly sports or performing arts. These opportunities continued to reflect family resource levels. At previous ages, we found positive associations between competency levels and participation in music and the performing arts.

The clusters we found for parent interests or use of leisure were somewhat different from their children—they include a dimension of involvement or extension. They were:

- Literate and involved (44 percent);
- TV and little involvement (27 percent);
- Mixed interests (10 percent)—with lower reading levels than other clusters; and
- TV and few interests (19 percent).

We found that children of those in the third group tended to have lower competency levels and lower levels of engagement in school.

Parents were also using ICT more. Otherwise, their use of leisure time remained much the same as 2 years earlier—contrasting with the changes in their children's use of leisure time, which signals how much the young people were growing in their adolescence, trying out new things, and spending more time communicating with each other.

FAMILY INTERACTIONS

Parents were sharing fewer activities with their 14-year-olds, and the proportions of mothers in employment continued to show an increase. But around two-thirds of the sample came home from school to a parent.

Most parental expectations at this age were around schoolwork, housework, and language, and young people were largely aware of these. They were less aware that their parents might have expectations or rules around media use, particularly video games. Reflecting the young people's growing independence (but probably also causing some tension at times), there were more parental expectations than there had been when the sample was aged 12. Only 3 percent of the sample had never broken or ignored a parental rule. What parents see as discussion when this happens sounds to some young people like being told off.

Disagreements between parents and their 14-year-olds occurred almost universally. Growing independence saw more use of negotiation when this happened—but also more parents getting cross in order to get their way.

While their independence mattered more to the young people than it had 2 years earlier, they still largely saw their families as supportive and inclusive, though not as much as previously, and, to a lesser extent, communicating well. Family pressure was not a common experience. This is consistent with the general picture from parents: that they largely trusted their children as they started to engage in fewer shared activities. Parents were a little more positive about the quality of parent-child communication at this age, though some distance or friction was evident for around a fifth of the sample. Their child's friends were sometimes a source of unease for parents, though most liked their child's friends. The unease appears to be related to differences in boundaries or approaches that parents like to feel they have established for their own child.

While there were some differences between parental concerns for sons and daughters, and some ethnic differences in how parental authority was exercised where young people crossed boundaries, the social characteristics most associated with differences in the kinds of boundaries parents had (or had in mind) and their exercise of their responsibility for their mid-adolescents were family income and maternal qualification. But young people's views of positive relations with their family (their sense of being supported and included, and good communication), and parent views of good communication were largely not reflective of social characteristics. Feelings of family pressure were stronger among those who had non-qualified mothers, or

young people who were Pacific, or male. Parent reports of friction in the home were also stronger among those who had non-qualified mothers, were in low-income homes, or who were Pacific.

These feelings about family interactions and relations are linked to ways that young people spend their time, and the two other major dimensions of their lives, friends and school. Consistently, we found more friction and pressure for those who were in the *electronic games~no strong interests* leisure group, and those in the *standing out* values group. Those who felt positive about their family also tended not to have friends who had risky behaviour, or to show risky behaviour themselves. They were more engaged in learning. While teachers' scores for young people's overall achievement were not related to the positive aspects of family interactions, those who experienced family pressure did have lower overall achievement and competency scores. Those who reported positive interactions and relations with their family were more likely to have higher average scores for reading and the attitudinal composite.

RELATIONS WITH PEERS

Friendships have grown between the ages of 12 and 14: they occupy more time, and carry more weight in the sample's lives. Most of the sample had solid friendships. Solid friendships were more likely where young people also had supportive and inclusive families, and were less likely where they had friends with risky behaviour. But having solid friendships did not necessarily mean that young people were less engaged in risky behaviour themselves.

Risky behaviour among friends was not common. This kind of behaviour was most likely to be getting into trouble at school, though, at this age, not necessarily evading school, or thinking positively about having sex before the legal age of 16. Having friends who show risky behaviour is also associated with risky behaviour for a young adult. Risky behaviour and having friends with risky behaviour were associated with lower scores for reading and mathematics, and the attitudinal composite.

The patterns here point to crystallisation of habits and behaviours that are not school-focused or learning-supportive: but nor do they point to positive family experiences, positive peer relations, or satisfaction with life. The interests are largely passive or consumer, not extending. Young people from low-income families were most vulnerable to what seems to be a negative spiral that probably began some time back, but which can crystallise as young people exercise independence.

Friendship went beyond sharing the present for around half the sample: friends pushed them to succeed and do interesting things they would not do by themselves, or talked about hopes and plans for the future. Around half also seemed to be able to share their own problems with their friends.

Perhaps the sharpening of independence and a sense of individual identity lies behind the jump in young people thinking of aggressive responses to our hypothetical situation of being given a hard time in school grounds. The drop in assertive responses, however, does not fit this interpretation so easily. The rise in those who would turn to their friends or a gang is consistent with the growing weight of friendship in their lives.

Yet bullying seemed to be happening less at age 14, and was now reported to have happened over the past few months by 18 percent. Almost all of this bullying was at school. Two-thirds of it was verbal, and a third, physical. Half of those who were bullied ignored it. Fourteen percent said they had bullied someone else. Parents of bullies are less aware of that than are the parents of those who are bullied: but in both cases, parents often do not know of this activity.

Young people who bully (some of whom are also victims of bullying) are less engaged in school and learning, have lower average competency scores, and are more likely to express dissatisfaction with life, and show risky behaviour. They share some of the patterns related to earlier habits that we see with those who have friends with risky behaviour. Involvement in bullying over time seems to have negative effects not just for habits, but also in relation to finding positive value and enjoyment from learning, family, and friends, suggesting some "vicious" cycles (or crystallisations, since it is likely that these patterns start from connected threads, rather than a single event). Nonetheless, the patterns that we see here are not set in stone: the die is not cast at an earlier age. Experiences and relations with others remain important avenues for providing alternatives.

VALUES AND EXPERIENCES

While there have been changes in leisure activities and friendships, and signs of increasing independence, the sample's values were similar to what they had been 2 years earlier. At age 14, they did place somewhat more importance on doing well at school, and somewhat less on doing well at sport, both now and looking ahead to adulthood. Having an interesting job had become more important, as had having lots of money.

We found three clusters among the young people in terms of their values:

- *Anchored and achieving* (37 percent)—valuing relationships, achievement at school and at work, including having an interesting job and influencing others.
- *Anchored* (22 percent)—valuing relationships, achievement at school, but less emphasis on having an interesting job in future.
- *Standing out* (41 percent). The *standing out* cluster put more emphasis on money, friends, clothes and looking cool, and an important job. We found this cluster had lower average competency levels, lower school engagement, less supportive families, more friends with risky behaviour, and showed more risky behaviour themselves.

Sixty percent would now like to change something in their lives, much more than the 40 percent at age 12. There was much stronger interest in having more money and improving a skill, and in changing appearance, becoming more confident, improving health, improving friendships, or changing a teacher.

Most of this sample (which includes more young people from very high-income and high maternal qualification levels than the population at large) was thinking of professional work, or work involving technical skills and working with people. However, young people who did not know what they wanted to do were found across the board.

Parental concern about their child and school had doubled since age 12 (34 percent cf. 17 percent at age 12). Otherwise, the patterns of concerns were much the same as 2 years earlier. Most parents had some concern about their child at either age 12 or age 14. Parents' concerns were often justified: young people's scores on the attitudinal composite and for mathematics and reading comprehension were lower if their parents had concerns about them at both ages, or three or more areas of concern at age 14.

Praise did not seem to be an everyday experience for the sample. This may mean that most of them saw praise as something more than a quick comment by parents or friends. Around half had been praised for achievement or included in a valued group often or more. Less than a fifth had never taken action over the past year about something that concerned them, or supported a friend in trouble. Praise and achievement for non-school things was more likely to occur in positive family environments, and for young people who were engaged in learning—and who used internal markers of achievement. But it was not strongly associated with these; nor with an absence of risky behaviour.

Two-thirds of the sample sometimes got bored, had difficulty trying to fit everything into their time, or fought with others at home. Around half the young people felt a lack of freedom or money at least sometimes, indicating their growing independence. Levels of dissatisfaction were relatively low.

Risky behaviour was also low at age 14. It was rare to have sex or be sufficiently drunk to do something that they regretted afterwards. Around a third drank at least sometimes, lied for others, or had broken up with romantic partners (suggesting that these may be short-lived at this age for many). Just under half the sample had fallen behind with their schoolwork at least sometimes. Getting into trouble at school at least sometimes was also relatively high: a sign of young people flexing their growing sense of independence? However, high levels of risky behaviour do seem to be more of an isolating experience than dissatisfaction: there are consistent signs of a "turn-off" from school, down to the class level, as well as difficulties within the home. This turn-off comes at the price not just of current achievement levels at school, but not having the attitude to learning that would support any future desire to re-engage with it.

There are some tracks from current risky behaviour back to lower competency scores at ages 10 and 12, and back to non-enjoyment of reading, and involvement in bullying, from age 8.

Twenty-eight percent of the sample had experienced at least one adverse event over the past year: these included family break-ups, and being hassled about culture or sexuality. Māori and Pacific young people were more likely to experience being hassled about their culture; but the incidence of being hassled about sexuality was proportionately high. Adverse events did have associations with risky behaviour, school engagement, and reading and mathematics scores; but not with the attitudinal composite.

ENGAGEMENT IN SCHOOL AND LEARNING

There are two main patterns evident in student engagement at age 14. Around two-thirds enjoy learning, and show engagement in school. They were more likely to report that they had clear, helpful teachers who gave useful feedback on student work, than to report that they had teachers who seemed to pitch the work so it seemed relevant to the students, and showed interest in their students' ideas. Around a third do not find school engaging.

Just over half the sample had high attendance (less than 10 days absence over the year). Thirty-five percent were absent for between 2 to 5 weeks, and 12 percent, for more than 5 weeks. Absenteeism was related to patterns of disengagement in learning, but risky behaviour, being in the "standing out" values cluster, and disrupted or comparative learning environments carried more weight, suggesting that tackling absenteeism needs to address a number of dimensions.

There are precursors to high absenteeism. The high absence group at age 14 has consistently lower scores on the attitudinal composite from age 8, and on the cognitive competencies at ages near-5 and 6. It could be that early grasping of the work of school has some bearing on attitudes shown at school from age 8; and that both of these have some bearing on later attendance.

Most of this sample thought they would stay on at school until the end of Year 13 (84 percent). Eight percent thought they would leave school at the end of Year 12, and 3 percent at the end of Year 11, or as soon as they could. Four percent were unsure. Staying on till the end of Year 13 was not necessarily done to lead into further study. Just over a third wanted to go straight into a job.

We found three groups among the sample when we looked at a range of answers to questions about the current value of school, and adult aspirations to get a summary picture of individual motivation towards school. At age 14, only a minority had a high motivation level.

- The "high" motivation group had high faith in gains from school, and a university-professional orientation (28 percent).
- The "unsure" group was less sure about the gains from school, and their future goals (38 percent).
- The "low" group had a low level of faith in gains from school, and were oriented toward skilled and unskilled work (34 percent).

Motivation levels were more likely to be high for those with high family incomes, and tertiary- or university-qualified mothers; but they were not universal among these advantaged groups. Motivation levels reflected current differences in competency levels. They also showed links with past competency levels, back as far as age near-5 for mathematics and reading; and with patterns from age 10 of enjoyment of reading, homework completion, and experiences of bullying.

Around two-thirds of the students showed confidence in the compulsory subjects, but between 14–21 percent would like to drop one of the subjects as soon as they could. The proportion of students who feel they are floundering is low overall, but twice as large in mathematics and science as in English. Mathematics and science were seen as having more challenging work than English classes. Otherwise, English and science classes seemed to have more in common than with mathematics classes.

Overt comparison with other students, not common in the sample's classes, did not appear to contribute to either positive learning environments or student performance. Challenging schoolwork did.

Students who were engaged in school and absorbed in learning were likely to be in positive learning environments—where there is good feedback, relevant teaching, challenging work, and a focus on learning at the students' pace. Students like teachers who provide positive learning environments. Students are also inclined not to be negative about a subject and their work in it where there is a positive learning environment. Disengagement with learning tends to be more passive than actively disruptive in class.

The factors that are positively associated with engagement in learning are not the exact mirror opposite of those that are associated with higher scores for being disengaged in learning and school. Being disengaged in school is not simply a matter of not having positive learning environments, or different values. Being engaged in school is not simply a matter of having non-disrupted classes, or non-comparative classes. Nor are students simply passive recipients or lodgers in particular contexts.

Analysis shows that students' views of their teachers, and experience of disruptive or comparative learning environments are related to their life outside school. Those who show signs of disengagement or who are in less supportive learning environments are also experiencing family pressure, or engaging in risky behaviour. They were more likely not to have interests that engaged them outside school, or alternative forms of recognition and inclusion, though standing out in some way was of more importance to them. Conversely, those who are engaged in school are also supported at home, have supportive friendships, and interests that can extend them.

The attitudes and values and practices of those who are engaged or absorbed in learning, and those who have developed internal markers of achievement are likely to have taken some time to develop—and vice versa. There are consistent links with earlier attitudinal composite scores (going back to the first year at school), and somewhat less consistently, with mathematics scores. There are also consistent links with the enjoyment of reading since age 8, and earlier enjoyment of school. Engagement in learning is also supported by positive experiences or relationships in all four of the main spheres of their life: school, family, friends, interests; and it is reflected in values.

Attitudes to current class experiences: learning environments, teachers, and views of subjects carry less of the past with them: indicating that student reaction is not preset, and that what teachers do with them does matter.

SUBJECT CHOICE

English, mathematics, and science were the Year 9 and 10 compulsory subjects in the schools attended by the sample. Health and PE were also compulsory in all but one of the schools, and social studies in all but three of the schools. There was a wide range of options, with more at larger schools. Sorting students into "ability" streams for all their subjects is now uncommon, but some differentiation of classes within subjects occurred for around half the schools, particularly for mathematics. We also found evidence of some differentiation by clusters of options, with students with lower overall achievement and competency levels more likely to be in subject clusters that included technology, arts, and Māori, compared with those in clusters that included French and economics, and Japanese and graphic design technology. Students in the first cluster also had higher levels of disengagement, and were more likely to encounter disruption in their classes.

Students' choice of subjects is constrained by what their school offers. School deans guide choices, and often see themselves making the final decision about a student's learning programme. Most students see themselves making the choice, however, guided primarily by their own interests. Options are changed when students realise they do not like them, or that something else appeals more. Most were happy with the choices made, though some would like more information to help their decision: more so for those whose families may not have educational experiences to equip them with relevant knowledge.

SCHOOL CHOICE

Just over a fifth of the students—but a third of those from low-income families—said their current school was not their first choice. When we looked at whether students were attending the particular schools their parents named as their choice 2 years earlier, we found that 81 percent were at the schools they had preferred. However, while this was somewhat less likely for students from low-income homes, it was also less likely for those from high-income homes. This suggests that school choice reflects pragmatic reasons rather than ideal matching of students and schools.

Just under three-quarters of the students would choose the same school again with hindsight. Half of those who were not at their first choice school felt more positive about it, once they had experienced it. However, this was less true for students in decile 1–2 schools, and students from low-income families.

Students who were not in their first choice of school had lower levels of school engagement, school confidence, and being absorbed in learning, and lower competency levels. But they also showed lower levels of family and friend support, and higher levels of risk behaviour and adverse experiences; they were also more likely to have been unhappy at school since age 8, and had lower competency levels at age 12. Being at the school of first choice does not account for the variability in student engagement and overall achievement levels: it is outweighed by the other factors outlined in our analysis of student engagement.

PATTERNS OF PERFORMANCE

Family resources of income and maternal qualification are reflected in student competency levels. But in models that included factors that showed significant correlations with the competencies, and earlier competency levels and ways of spending time, we identified some factors that are also linked over and above these.

Positive factors are:

- enjoyment of reading over time: this is particularly strong;
- internal markers of achievement;
- earlier levels of perseverance (and for mathematics, curiosity); and
- comfortable family financial situation.

Negative factors are:

- experiencing family pressure or parent-child friction;
- being negative about mathematics;
- being involved in bullying over the last 5 years; and
- risky behaviour.

Parents of around three-quarters of the sample thought they were confident and clear in their interactions with adults, and around two-thirds saw their children as confident in the world around them: actively interested in it, able to enjoy new experiences, and asking questions. Although parents do show concern at times about their child's friends, most thought that their child did not act out of character because of peer pressure. Most thought their child was often persistent and attentive to detail, but persistence levels were lower when it came to problem solving or completing chores. Parent views of their child's effectiveness and responsibility, and to a lesser extent, their self-confidence were related to the risk variables in much the same way that teacher views were. Thus, those who were in the *electronic games~no strong interests* group, who had watched high levels of TV over time, or not enjoyed reading, were rated lower by their parents for effectiveness, responsibility, and self-confidence.

Parents do see their children in different contexts than do teachers, but there was a moderate correlation between teacher and parent views of students. The correlations between parent views of how their child approaches the world and their perspective on their child's enjoyment of school, and with students' views of their engagement in school were weaker. Parent desires to change something about their child's school were

not correlated with either their child's view or teachers' views of their child's progress. Consistency between teachers' views of a student's approach to classroom life and work, and their overall achievement level, and with student reports of their learning engagement was moderate. The level of the correlations is high enough to suggest that there is some shared information, but low enough to affirm differences in perspectives in what is seen and understood.

HIGH AND LOW SCORERS IN THE LOW-INCOME GROUP

Within the low-income group, there are some further differences in family resources that distinguish high scorers in this group from low scorers. High scorers had the advantage of higher maternal qualification levels (and probably linked to that), rising family incomes over the past 9 years. They seem to have had more stability in their housing, but otherwise, the low scorers have had no more, or less, volatility in their family lives.

As with the whole sample, high mathematics scorers were likely to have a good level of mathematics when they started school. There were indications that high scorers were more likely to have attended early childhood education that offered good staff-child interaction (including language use), and print-saturated environments. They were also more likely to have attended early childhood education services that served mainly middle-class children, and less likely to have attended decile 1–2 schools: suggesting benefits gained from advantaged peers.

The first year at school was more important for the high performers for reading comprehension in the low-income group. However, there were initial high performers among both low and high performers, indicating that for some individuals, early promise or gain is undermined by events and experiences occurring after age 8.

Literacy and the use of it—the enjoyment of it—was a key factor that appeared to distinguish the high from the low scorers in this group: this is also consistent with the patterns for the whole sample. There would appear to be somewhat more sharing of experiences between parents and students, whether school or leisure. Relations with peers tended to be more positive, and also involve more sharing (and communication). As with others, high scorers in the low-income group are more engaged in school, and more likely to use internal markers of achievement.

When we did this analysis at age 12, we saw similar patterns, but the differences relating to school engagement were not so clear. This may point to the cumulative frustrations for those with low levels of literacy and numeracy, and with them, the growing attractions of other ways of spending time. The patterns we found add weight to the importance of gaining literacy and mathematics knowledge and skills early on, and then working to ensure they are maintained—not simply for school or exam use, but as paths to enter other positive experiences.

Factors & clusters used in this report

Activities and interests

Young people	Parents
- Sports players	- Literate and involved in a range of leisure activities
- Computer games – no strong interests	- TV and little involvement
- All rounders (reading, arts, sports)	- Mixed interests (little reading)
- Creative interests	- TV and few interests

Family interaction

Young people	Parents
Family communicates well	Close parent-child communication
Inclusive family	Parent-child friction
Supportive family	
Family pressure	

Relations with peers

Solid friendships
Friends – risky behaviour
Bullying

Values

- Anchored and achieving (value family, interesting job, enjoying the things they do)
- Anchored (value family, happy family life, enjoying the things they do)
- Standing out – (value money, friends, looking cool, important job)

Experiences

Achievement and praise
Dissatisfaction
Risky behaviour
Adverse events in past year

Engagement at school

Engaged in school
Absorbed in learning
Confidence at school
Internal markers of achievement (intrinsic views)
External markers of achievement
Disengagement in learning

Subject choice

Subject cluster
1. French, IT, economics
2. Māori, Japanese, graphics (design)
3. Technology, arts, Māori
4. Arts, Māori
5. Japanese, graphics (design)
6. Technology, economics, horticulture
7. Technology, art, French

Competencies

Cognitive –
reading, writing
maths
logical problem solving

Attitude competencies –
perseverance
self-management
self-efficiency
communication
curiosity
social skills

Social characteristics –
family income
maternal qualification
gender
ethnicity

School characteristics –
decile

Motivation

High	High faith in gains from school; university/professional orientation
Unsure	of gains from school and unsure of future goals
Low	Low faith in gains from school, aiming for skilled/unskilled work

1. Introduction

The Competent Children, Competent Learners study is following a cohort of around 500. It began in 1993, when the cohort was near-age 5, and attending early childhood education in the Wellington region. This report is one of four that describes the cohort at age 14, with analysis of the experiences and resources that are linked to differences in performance and engagement in school and learning in mid-adolescence in New Zealand.

The first report, *Competencies at Age 14 and Competency Development* (Wylie, Ferral, Hodgen, & Thompson, 2006), describes the performance levels for the cohort on the measures used in the study. Students tackled the Ravens standard progressive matrices, a non-verbal test of logical problem solving, the PAT reading comprehension test, a shorter version of the PAT mathematics test, and a writing task. Their teachers rated their attitudinal competencies—the ways of approaching tasks, experiences, and people that have been associated with learning and contributing, whether in formal education, employment, personal relationships, or leisure. In this study, we measured perseverance, self-management, self-efficacy, communication, curiosity, and social skills. There are strong correlations between the first three of these six attitudinal competences: young people who showed a high level of perseverance tended to also show high levels of self-management and self-efficacy. There are moderate correlations between the attitudinal competencies and reading comprehension and logical problem solving.

When we look at consistency over time, we found more continuity in the scores for the cognitive competencies (mathematics, reading comprehension, logical problem solving, and writing) than for the attitudinal competencies. This is likely to be because the knowledge and skills developed for reading and mathematics are more cumulative, and somewhat less context-bound. Early high performance—indicating a sound base—makes it easier to keep performing at a good level, or to return to that level if performance dips. It was much harder to improve performance from an initial low level, particularly for mathematics, and those who did, generally did so gradually. It would be much harder for teachers to accurately predict young adult behaviour from new entrant behaviour in schools than to predict academic scores over the same period. But even among the initial high performers, there is a range of different trajectories over time rather than a uniform or single path of growth. Early experiences are important to provide good foundations; but continuing experiences are also important (Wylie, with Ferral, 2006).

How do attitudes support cognitive competencies? Or is it vice versa? When we analysed the relationship at age 14 alone, we found that the cognitive competencies could not account for the variance in the attitudinal competencies: someone with a high level of reading comprehension is not necessarily going to have a higher score for, say, curiosity than someone with a low level of reading comprehension. But attitudinal competencies did account for a reasonable proportion of the variance in cognitive scores, particularly perseverance, communication, and curiosity. So a 14-year-old who listens carefully, keeps going when they face a problem, or keeps an open mind, is more likely to get a higher reading comprehension or mathematics score than one who does not.

The relationship between attitudes and cognitive performance is more complex when traced over time. Attitudinal competencies contribute to cognitive performance at the same age, but not to cognitive performance at a later age. Cognitive performance at one age does contribute to attitudinal performance at the next age. Thus, though these two dimensions are distinct from one another, they are connected over time.

Social characteristics have some bearing on competency levels at age 14. We have used four in our analyses: family income levels, maternal qualification, gender, and ethnicity. Very high and very low competency scores were achieved in all social groups. However, there are differences in average scores. The higher the level of family income and maternal qualification, the higher the average score in the cognitive competencies

at age 14. The gradients were present, but not so steep, for the attitudinal competencies. Students whose family income was low at age near-5 had lower scores than others. Females had higher average scores for reading comprehension and writing, and all the attitudinal competencies other than curiosity. Pākehā/European and Asian young people had higher average scores than Māori and Pacific young people, but not for logical problem solving.

The second report, *Contributions of Early Childhood Education to Age-14 Competency Scores* (Wylie, Hodgen, Ferral, & Thompson, 2006) focused on the role of early childhood education. Aspects of that experience continued to show associations, 9 years later. Early childhood education staff's interaction with children—their guidance to children in the use of activities, and joining children in their play, which would include aspects of language use and awareness of individual strengths and needs—is the most enduring aspect, particularly for mathematics and reading comprehension. The length of early childhood education experience appears to benefit attitudinal competencies; as did attending a service for children from mainly middle-class families. The use of open-ended questions, as well as the service being "print-saturated" appeared to benefit reading comprehension. Our findings were consistent with other research focused on concurrent or short-term contributions of early education.

The third report from the age-14 phase of this study is *Completely Different or a Bigger Version? Experiences and Effects of the Transition to Secondary School* (Wylie, Hodgen, & Ferral, 2006). This showed that for most of the sample, the transition to secondary school involved some marked change in the characteristics of the school they attended—often moving to a much larger school, or to a single-sex school. Friends were often lost in the process—but they were also gained. Secondary school offered students more, rather than a totally new world.

Most settled into secondary school within two terms. The length of time it took to settle in reflected previous reactions to school as well as current. Prior feelings about going on to secondary school were not related; high performers were no more, or less, likely to settle quickly than others. Those who did take two terms or more to settle had lower scores for the attitudinal competencies after taking into account prior performance and social characteristics.

Views of school remained mainly positive, though there were marked increases in boredom and restlessness. Students from low-income families, and in decile 1–2 schools showed less engagement with school. There were some similar trends for Māori and Pacific students, for whom relations with teachers seemed particularly important.

Contrary to fears that transition to secondary school negatively affects student performance, we found that change was just as likely to be up as down, and in fact that there was slightly greater stability of performance over the 2 years between age 12 and age 14, than there was for other 2-year periods when the sample was in primary school.

THIS REPORT

The scope of this report is broader than the other three reports from this phase. We aim to describe what our sample was experiencing in five dimensions: their use of leisure, their relations with peers, their interactions with parents, their values and events in their lives, and their engagement in school and learning. Then we want to see how engagement in school and learning is affected by experiences in the other four dimensions of mid-adolescent experience, and how it reflects previous patterns.

Growing Independence is the title of this report because independence is a theme running through all these dimensions. The young people in the study were assuming more responsibility for themselves—not always in ways that seem positive to adults. They were spending more time with their peers, less with their parents. Yet they were not yet fully independent: they were still needing parental support and interest. And as we looked back over time, we saw that the kind of independence different individuals were growing could be linked to the earlier ways they had spent time and related to people, the habits in which they were comfortable.

We had a number of specific research questions that we addressed in this phase. As we analysed the data, we saw more and more overlap between these questions, or, to put it another way, while the analysis that was done for each question gave different perspectives (because different variables were used in different models), the patterns that emerged were consistent.

The overall aim of the *Competent Children, Competent Learners* project is:

> *To describe children's cognitive, communication, social skills and problem-solving competencies and dispositions from the age of 5, and provide an analysis of the concurrent and enduring contributions to these competencies of early childhood education, school experiences and resources, family resources, family support for education, children's activities, and parental satisfaction with education.*

MAIN RESEARCH QUESTIONS FOR THE AGE-14 PHASE

We developed this broad description into a set of 12 research questions. The ones in italics are tackled in this report.

1. How predictable are competency levels at age 14 from earlier competency levels at ages near-5, 6, 8, 10, and 12? Are there different trends for different population sub-groups?

2. *Do earlier literacy and numeracy performance have more of a bearing than earlier levels of social skills, perseverance, communication, and individual responsibility on age-14 competency levels, learning engagement, school attendance, and the out-of-school activities which are positively associated with competency levels?*

3. *What are some key factors which can mitigate the effect of low parental qualifications and low income on competency levels?*

4. What are the key factors which contribute to a successful transition to secondary school? Analysis will include current school experiences and home support, factors from age-12 data, such as age-12 competency levels, prior school performance, experience, attitudes and aspirations, home resources and support, peer relations, and out-of-school activities, including paid work, and some key factors from earlier years.

5. Does early childhood education experience continue to have an impact at age 14? If so, which aspects remain important?

6. *How are earlier competency levels in social skills, parental and teacher reports of attitude to school, and relevant school behaviour, from age 6 on, related to relations with peers at age 14 both in and out of school, experience of bullying, and risk behaviours?*

7. *How are earlier competency levels in perseverance, communication, and individual responsibility, parent and teacher reports of dispositions, and ability to cope with problems, related to competency levels at age 14 and attitudes to school, including motivation, attendance, and engagement?*

8. *How are current attitudes to school, including motivation and engagement, problem-solving approaches, and competency levels at age 14 related to patterns of peer relations in and outside school, experiences of bullying, and perceptions of the school and class environment?*

9. *What consistency is there between young adult, parent, and teacher reports of the teenagers' engagement in learning, attitudes to school, and overall performance?*

10. *What consistency is there between competency levels at age 14 and young adults' judgements of their school experiences, parental satisfaction with their child's school, whether the school was the first choice of parents and young adult, the level of parental involvement in the school, and teacher perceptions of the young adult's school engagement, and the parental support for their learning?*

11. *Do different population sub-groups and different levels of competency at age 12 show different patterns of decision making about secondary school choice, success in gaining access to the secondary school which was their first choice, satisfaction with the secondary school their child is in, and satisfaction with their child's transition to school and their school progress? Is satisfaction with the secondary school dependent on its being the first choice of the family?*

12. *What personal interest, peer, school, and home factors influence the subject choices which students make at the start of secondary school, and how do these choices relate to their understanding of qualifications and their aspirations?*

Some of these questions lend themselves to separate reporting of what we found (e.g. school and subject choice). The research questions focused on competency levels and their association with what was happening, and had happened in the lives of the sample at age 14 turned out to be interlinked: the "explanatory" variables in one (e.g. competency levels in relation to learning engagement) used as the variables to be "explained" in another. We have therefore interwoven analyses done to answer these research questions, rather than repeat material in separate sections. In the conclusion, we draw these threads together to answer some research questions as a group, rather than separately. The inter-relations we found are real, and an important dimension to understanding the 14-year-olds in this study.

APPROACH TO DESCRIPTION AND ANALYSIS

The Competent Children, Competent Learners study collects a wealth of material. Material at age 14 was gathered from the young people themselves, through interviews and self-completed surveys of their views of their English, mathematics, science, and favourite subject classes; views of learning and the school as a whole; experiences over the past year, and views of home; from phone interviews with one parent (usually the mother; 8 percent of parents we interviewed were fathers of study participants), from tests done by the young people; self-completed surveys of their English, mathematics, science teachers, and the teacher of their nominated favourite subject that gave teacher ratings of the young people for attitudinal competencies, and some other information; and information on subject choice, class allocations, and student responses to school from Year 9 and Year 10 form teachers.

In this report, we have aimed to strike a balance between too much detail, and too little. In our descriptions of the young people's experiences, perspectives, and resources, we note where there are different patterns related to four social characteristics—family income, maternal qualification, gender, and ethnicity—since there are links between these characteristics and competency levels.

Our sample was not chosen to be representative of the New Zealand population. Because it was drawn from the Wellington region, it has more young people from high-income homes than the country as a whole, and more Pākehā/European. There are sufficient numbers of young people, however, to analyse differences in family income, maternal qualification, and gender; but for analysing ethnicity, we have had to group Māori and Pacific students, and Asian students with Pākehā/European. Table 1 gives an outline of the sample in terms of these four characteristics.

Table 1 **Social characteristics of Competent Children, Competent Learners study sample at age 14**

	(*n* = 475)	%
Family income		
Low income (< $30,000)	58	12
Medium income ($30–60,000)	123	26
High income ($60–00,000)	150	32
Very high income ($100,000+)	123	26
Not known	21	4
Maternal qualification		
None	65	14
Trade/mid-school	235	49
Tertiary/senior secondary	86	18
University	85	18
Not known	4	1
Gender		
Male	247	52
Female	228	48
Ethnicity		
Pākehā/NZ European	376	79
Māori	50	11
Pacific	23	5
Asian	14	3
Other	12	3

In this report, we hope to understand more about how the links between social characteristics and competency levels occur: what are the ways of spending time, for example, that are more likely to happen for those with greater family resources or money? Income levels, as we shall see, seemed to be somewhat more important for mid-adolescents, perhaps because their growing independence means they were moving to more costly experiences.

We have not reported results separately for Year 9 and Year 10 students because there were few differences between them (we do report some differences in relation to subject choice, in Chapter 8). We have included differences related to school socioeconomic decile; but not other school characteristics (largely because of the overlaps between decile, size, and whether a school is single-sex or coeducational).

In most of the statistical analysis, we have grouped responses together to form factors (groups of items for which the responses of an individual are similar) or clusters (groups which seem more similar to each other than to other individuals). In this report, only the summarised results of our statistical analyses appear; the full detail is available in the technical report from this phase (Hodgen, Ferral, & Dingle, 2006). The set of factors and clusters that are used often in this report is given in the following chart.

Factors & clusters used in this report

Activities and interests

Young people	Parents
- Sports players	- Literate and involved in a range of leisure activities
- Computer games – no strong interests	- TV and little involvement
- All rounders (reading, arts, sports)	- Mixed interests (little reading)
- Creative interests	- TV and few interests

Family interaction

Young people	Parents
Family communicates well	Close parent-child communication
Inclusive family	Parent-child friction
Supportive family	
Family pressure	

Relations with peers

Solid friendships
Friends – risky behaviour
Bullying

Values

- Anchored and achieving (value family, interesting job, enjoying the things they do)
- Anchored (value family, happy family life, enjoying the things they do)
- Standing out – (value money, friends, looking cool, important job)

Experiences

Achievement and praise
Dissatisfaction
Risky behaviour
Adverse events in past year

Engagement at school

Engaged in school
Absorbed in learning
Confidence at school
Internal markers of achievement (intrinsic views)
External markers of achievement
Disengagement in learning

Subject choice

Subject cluster
1. French, IT, economics
2. Māori, Japanese, graphics (design)
3. Technology, arts, Māori
4. Arts, Māori
5. Japanese, graphics (design)
6. Technology, economics, horticulture
7. Technology, art, French

Competencies

Cognitive –
reading, writing
maths
logical problem solving

Attitude competencies –
perseverance
self-management
self-efficiency
communication
curiosity
social skills

Social characteristics –
family income
maternal qualification
gender
ethnicity

School characteristics –
decile

Motivation

High	High faith in gains from school; university/professional orientation
Unsure	of gains from school and unsure of future goals
Low	Low faith in gains from school, aiming for skilled/unskilled work

Although this is a longitudinal study, we are not trying to find what "causes" something else. Trying to establish causality with social data that have not been derived from a narrowly-confined experiment, or that are not limited to a very small number of variables, is probably a Quixotic pursuit. The variation in individual lives over time is too great; in statistical terms, it is too "noisy" an environment. It is also very difficult to cleanly separate out different dimensions or factors: they are often inter-related. This makes it difficult if not impossible to create a single "omnibus" model to account for differences between young people.

We have used different variables in the models that seek to account for differences in, say, engagement in learning, because of our different research questions. Thus, different variables will emerge as more salient in different models. What we can do is establish how different things or dimensions are related, and the consistencies that are evident across different analyses.

This approach is also important because of the nature of statistical models that seek to account for differences in scores: for the "effect" of a variable on those scores. The model presented for an outcome variable (e.g. engagement in learning) is one of many models that could be fitted, depending on the order in which the variables are inserted into or deleted from the model, or even which of two relatively highly correlated variables we chose to use in the model. We have tried to keep the models "reasonable", in the sense that the apparent importance of the variables agrees with the size of the correlation coefficients, making allowance for other correlated coefficients included in the model.

This does not mean that variables not used in any particular model are not important, or less important than those that are used. If being negative about mathematics is dropped from a model, we cannot say that being negative about mathematics is not important. It is very likely that the information that variable provides is being provided by a combination of one or more associated variables (in this case, engagement in school and attitude to mathematics teacher, say).

Because of the inter-relation of many variables, it is difficult to determine the directions of the associations. If, for example, someone has a high mathematics score, is this because they have a positive attitude to their mathematics teacher, or the other way round? How does being negative about mathematics come into it? Does being negative affect the score, or the attitude to the teacher, or is it the score that affects attitude? Are attitudes to subject and teacher caused by a general level of engagement in school, or is it the other way round? Or does the one affect the other, which then affects the first, in a spiral of effects? For these reasons we have reported all correlations above about 0.12, as well as the subset of variables that were statistically significant in a model.

Derivation of the factors used in the report is described fully in the age-14 *Technical Report* (Hodgen, Ferral, and Dingle, 2006). Factor analysis was used to determine which items or individual questions to combine for the scale factors, and Cronbach's alpha was used as a measure of the reliability of the scales. All alpha values for the scales used in this report were between 0.70 and 0.93.

With each factor, we describe the overall picture first—what this tells us about the sample's perceptions and experiences as a whole. Then we look at the average scores for the factor (each on a 10-point scale), and at whether average scores are different for the four social characteristics (gender, ethnicity, maternal qualification, and family income), and in relation to aspects such as motivation, abstenteeism, leisure pursuits, and values. We identified a set of "risk" activities or dimensions in the course of this analysis. These are described more fully in the report, but are given below as an indication of how different variables go together.

- Low school motivation (view of the long-term value of school)
- Difficult school behaviour at age 12
- "Standing out" values (interest in money, having lots of friends, looking cool, an important job)
- Young person's leisure interests—electronic games~no strong interests (and little use of reading)
- Parent leisure interests—mixed (less likely to study, do voluntary work, attend meetings, or read newspapers, or regularly watch TV; a relatively high proportion of low-income families in this cluster, and the highest proportion of non-qualified mothers)
- Difficult family financial situation
- Two or more adverse experiences in the past year
- High abstenteeism
- Heavy TV watching history (from age 8)
- No enjoyment of reading (from age 8)

We look at the correlations between each factor and the others in our set, to see how, for example, engagement in school is related to other school factors, interactions with family, a young person's risk behaviour, and their friendships. Then we report the main findings from regression models undertaken in relation to the research questions for this phase—some focused mainly on current experiences, some focused mainly on trends over time—to see if we can identify the factors that might carry more weight than others in making sense of differences in school engagement and disengagement, and that are worthy of our effort as adults to support and improve adolescents in their development.

REPORT ORDER

We start by sketching the activities that the sample spent their time in out of school, as well as how parents spent their time, before moving on to their relations with peers—both positive and negative. Family interactions follow next, including both parent views, and we also look at family structures and resources. In Chapter 5, we describe the values that seemed important to different young people, and their experiences (positive and negative) over the past year as they broadened their sphere of action and experiment. The following three chapters are focused on the dimension of school: engagement in school—including class experiences—(and the aspects of interests, family, friends, values, and events that are related to different patterns here), subject choice (which has a bearing on future options), and school choice.

Chapter 9 reports on how different experiences and perceptions are related to the competencies used in the study, and teacher views of the young people's overall achievement levels, and looks at what consistency there is between teacher, parent, and student views of student approaches to life. Chapter 10 continues the investigation of how different kinds of experience are related to performance by focusing on one group that is the concern of much policy—students from low-income families. Like all social groups, this is not a homogeneous group. Although low income is often seen as a risk factor—and the discrepancies between the opportunities and achievements of students from this group and others certainly underpin that conceptualisation—there are some differences in experiences between those in this group who were performing well at age 14, and those who were not. This chapter explores these differences, and what they suggest about the kind of support needed.

In the conclusion, we focus on what we have learnt about coherence and risk in the lives of these young people.

2. Activities and interests

We start by painting an overall picture of how the sample spent their leisure time, and describe four clusters or different patterns of leisure use. Then we turn to more detail about three key uses of leisure time: television use, ICT use, and reading. We move on to look at other aspects of leisure use that have either shown previous connections with competency levels (use of writing, clubs, lessons, and music), or that are of increasing interest (paid work). Finally, we describe parents' use of leisure time, to give an idea of the context for young people's development of interests.

LEISURE ACTIVITIES

We asked the young people how often they did each of 14 activities. We chose the activities on the basis of what they said they did at age 12, previous associations found between particular leisure activities and competency levels, and information from the focus groups, other research, and our own experience.

Watching television and doing homework headed the list of activities that the young people said they often did (more than 2 days a week)—as they had at age 12. However, there was a small drop-off in those who often did homework. Sport, reading, computer use, and spending time with friends (face-to-face or electronically) is the next most frequent group of activities. While most young people played sport (more for fun than competitively) or exercised, around half never took part in art, music, or dance, or cultural activities. Making things was also a minority pursuit. At 14, the sample was more likely to be phoning or texting friends, and less likely to be playing electronic games or going to art/music/dance classes than they were at age 12.

Table 2 **14-year-old leisure activities**

Frequency→	**Often**	**1–2 days a week**	**Occasionally**	**Never**
Activity↓	**%**	**%**	**%**	**%**
Watch television	72	15	13	1
Do homework	64^{-}	21	14^{+}	1
Talk to friends (phone/text)	54^{+}	19	21^{-}	6
Hang out with friends	53	29	17	<1
Use a computer	53	26	16	4^{-}
Play sport for fun	50	26	17	8
Read a book (not for school)	42	18	31	9
Do exercise/physical training	37	33	20	9
Play competitive sport	32	33	15	19
Play electronic/video/computer/Playstation games	23^{-}	22	39^{+}	16
Practise singing/music/dance	20	13	16	51
Make things	10	20	55	15
Go to art/music/dance classes	8^{-}	19	16^{+}	58
Do cultural activities (e.g. kapa haka)	4	6	13	77

+ = more than at age 12; - = less than at age 12

There were some *gender* differences. Females were more likely than males to:

- read (51 percent of females did so often, compared with 34 percent of males; 12 percent of males said they never read a book other than for school, compared with 6 percent of the females). Interestingly, the pattern for males remained much the same between ages 12 and 14, but fewer females said they read often at age 14 (down from 62 percent, and those who never read, doubled from 3 percent);
- phone/text their friends (69 percent of females did so often cf. 40 percent of the males);
- hang out with their friends (59 percent of females did so often cf. 49 percent of the males);
- go to art/music/dance classes (38 percent of females did so often, or 1 or 2 days a week cf. 16 percent of males);
- practise singing/music/dance (41 percent of females did so often, or 1 or 2 days a week cf. 26 percent of males);
- take part in cultural activities (32 percent of females did so at least occasionally cf. 15 percent of males); or
- make things (89 percent of females did so at least occasionally cf. 81 percent of males).

Males were more likely than females to:

- play electronic/video/computer/Playstation games (36 percent of males cf. 8 percent of females);
- play sport for fun (58 percent of males did so often cf. 41 percent of females);
- play competitive sport (38 percent of males did so often cf. 26 percent of females); or
- watch television (77 percent of males often did cf. 66 percent of females).

Patterns of frequency of leisure activities were similar for both males and females for:

- computer use (but as we shall see, some differences in what computers were used for);
- homework (at age 12, females were slightly more likely than males to do so); and
- exercise or physical training.

Ethnic differences were few. Māori and Pacific students were less likely to read often (30 percent cf. 44 percent of Pākehā/European and Asian students); and 59 percent read only occasionally or never cf. 37 percent of Pākehā/European and Asian students. This difference was evident at age 12 also.

A new difference was that Māori and Pacific students were less likely to do homework often (53 percent cf. 66 percent of Pākehā/European and Asian students).

However, Māori and Pacific students were more likely to undertake cultural activities (41 percent, with 26 percent doing so at least once or twice a week), cf. 20 percent of Pākehā/European and Asian students.

Family income and *maternal qualification* levels seemed to play some part in patterns of leisure use at age 14, family income more so than 2 years earlier. The patterns evident were:

Increased leisure activity with increased family income

- Reading (29 percent of those with low or medium family income read often, increasing to 55 percent of those with very high family income).
- Computer use (41 percent of those with low family income used a computer often, increasing to 62 percent of those with very high family income).
- Homework (43 percent of those with low family income did homework often, increasing to 74 percent of those with very high family income).
- Art/music/dance classes (19 percent of those with low family income took part in these classes at least once a week, increasing to 34 percent of those with very high family income).

Different leisure patterns for students from very high-income families

- Watching TV: students from very high-income families were less likely to watch TV often (62 percent cf. 76 percent of others).
- Playing sport for fun: students from very high-income families were more likely to play sport for fun often (63 percent cf. 45 percent of others).
- Exercise/physical training: students from very high-income families were more likely to do this often (50 percent cf. 32 percent of others).

Increased leisure activity with decreased family income

- Making things: 21 percent of students from low-income families made things often, decreasing to 5 percent of students from very high-income families.

Increased leisure activity with increased maternal qualification

- Reading: 25 percent of those with non-qualified mothers read often, increasing to 66 percent of those with university-qualified mothers.
- Homework: 58 percent of those with trade-qualified mothers did homework often, increasing to 78 percent of those with university-qualified mothers.
- Art/music/dance classes: 18 percent of those with non-qualified mothers took part in these classes at least once a week, increasing to 34 percent of those with university-qualified mothers.
- Practise singing/music: 12 percent of those with non-qualified mothers did so often, increasing to 28 percent of those with university-qualified mothers.

Less leisure activity for students whose mothers had no qualification

- Computer use: 31 percent used a computer only occasionally or never cf. 19 percent of others.

More leisure activity for students whose mothers had no qualification

- Electronic games: 35 percent played these often cf. 20 percent of others.
- Competitive sport: 43 percent took part often, decreasing to 26 percent of those whose mothers had a university qualification.

Clusters of leisure time-use

We looked at whether there were patterns for individuals of how they spent their time, and found four clusters:

Sports players – more likely to regularly play sports, exercise, and less likely to take part in performing arts. Thirty-four percent of the sample were in this cluster. Males were almost twice as likely as females to be in this cluster (43 percent cf. 23 percent). Pacific young people were less likely to be in this cluster (13 percent). This cluster had the second lowest proportion of young people who enjoyed reading (52 percent).

Electronic games~no strong interests – similar level of electronic game playing as the *sports players*, but no other interests undertaken regularly. Twenty-four percent of the sample were in this cluster. There was some relationship with family income: 33 percent of the low-income group were in this cluster, decreasing to 15 percent of the high- and very high-income groups. Māori and Pacific young people were more likely to be in this cluster (36 percent cf. 22 percent of Pākehā/European and Asian). This cluster had the lowest proportion who enjoyed reading (34 percent).

All-rounders – regular sport and exercise, but also regular reading and participation in the performing arts. Twenty-eight percent of the sample were in this cluster. Females were almost twice as likely as males to be in this group (36 percent cf. 21 percent). The very high-income group was also more likely to be in this cluster (41 percent). Pākehā/European and Asian young people were also more likely to be in this cluster (15 percent cf. 5 percent of Māori and Pacific). Sixty-seven percent of this cluster enjoyed reading.

Creative interests – also regular participation in the performing arts, as well as regular involvement in making things; irregular sport and exercise. Thirteen percent of the sample were in this cluster. Seventy percent of this cluster enjoyed reading.

These differences in leisure activities on their own do not account for much of the variation in age-14 competency scores, but those in the *all-rounders* and *creative interests* groups had higher scores for mathematics, reading, logical problem solving, and the attitudinal composite.[1]

When we looked at the previous average competency scores for these groups, we found some consistencies with the current patterns. The *all-rounders* group (with regular sport, exercise, and performing arts involvement) was more likely to have higher average attitudinal scores at each of the earlier ages. This group and the *creative interests* group were more likely to have higher average logical problem-solving scores at earlier ages. The trends were not so clear in relation to mathematics and reading; there were associations with scores at particular ages, but not consistently across time. Where there were associations, they showed higher average scores for the *creative interests* group for reading, and for the *all-rounders* and for the *creative interests* groups in mathematics.

THEIR OWN EQUIPMENT

We asked parents what their children had available to them in their bedrooms. Most had some form of electronic media available to them. At age 14, they were much more likely to have their own phone than at age 12, and more had a computer in their room.

Table 3 **Equipment in students' bedrooms**

Equipment↓	At age 12 (*n* = 496) %	At age 14 (*n* = 475) %
Radio	84	84
CD/tape player	70	80
Desk	66	72
Phone	9	42
Television	24	32
Computer	9	16
Internet access	3	9
Video	6	8

There were some differences related to social characteristics that are consistent with the patterns of preferred leisure activities. Gender was the most marked.

Males were more likely to have a computer in their bedroom (20 percent cf. 11 percent of females, but personal Internet access was similar), or television or video (46 percent of males cf. 35 percent of females). Females were somewhat more likely to have a phone (47 percent cf. 37 percent of males), and sources of music: radio (89 cf. 80 percent of males), or CD/tape player (86 percent cf. 73 percent of males).

Computers were least likely to be in the bedrooms of young people in low-income families (9 percent). Televisions and videos were more likely to be in their bedrooms, and also more likely for those in medium-income families.

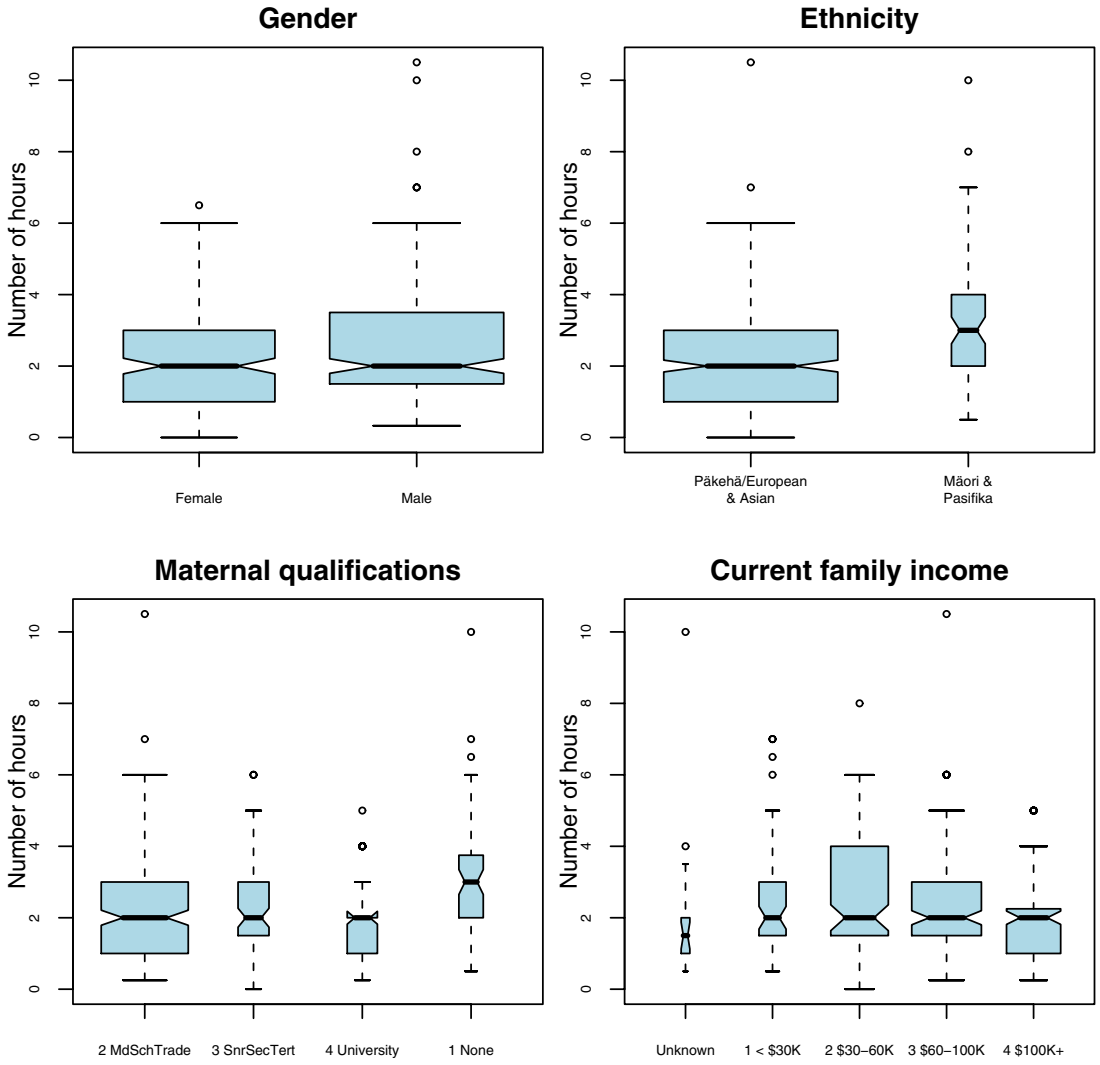
Desks were least likely to be in the bedrooms of students whose mothers had no qualification (55 percent); and TV sets (51 percent) or videos (19 percent), most likely to be there. Desks were also lesss likely to be in the bedrooms of Māori and Pacific students (58 percent cf. 73 percent of Pākehā and Asian students).

[1] Full details of the analysis reported here are in the *Technical Report* (Hodgen, Ferral, & Dingle, 2006).

TELEVISION USE

Watching television was almost a universal experience, with only 5 percent saying they did not usually watch television. A third watched for less than 2 hours a day, and a fifth watched for more than 3 hours a day. The average was 2.38 hours (s.d. 1.5)[2], much the same as the 2.45 hours at age 12, and up somewhat on the 2.20 hours at age 10. Students from some social groups tended to watch more than others: males, Māori or Pacific, and those whose mothers had no qualification.

Figure 1 **Television use and social characteristics**



We also asked whether the young people watched TV before school, as an indication of the role that TV might play in their lives. Watching TV before school was more likely if young people:

- were male (30 percent cf. 12 percent of females watched then at least sometimes);
- had non-qualified mothers (15 percent did so often cf. 6 percent of others);
- came from low-income families (15 percent did so often cf. 3 percent of others); or they
- were Māori or Pacific (15 percent cf. 6 percent of Pākehā/European or Asian students).

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[2] s.d. = standard deviation. This is used to indicate the spread of a measure around the mean. Two-thirds of the observed values of the measure can be found within the mean +/- a standard deviation. In this case, two-thirds of the young people watched television for between 0.88 hours a day, and 3.88 hours a day, on average.

These patterns are consistent with patterns of heavier TV use.

Cartoons continued to be high up the list of the sample's three favourite TV programmes, but there was a marked rise in adult adventure/mystery programmes. Most of the programmes that were popular were serials, or ones that followed some narrative line (including sport). Sport, reality TV, and music programmes were more popular than at age 12. Children's programmes barely feature. The proportion of those who watch documentaries remains relatively steady over time.

Table 4 **Favourite TV programmes at ages 8, 10, 12, and 14**

Programme↓	Age 8 (*n* = 523) %	Age 10 (*n* = 507) %	Age 12 (*n* = 496) %	Age 14 (*n* = 475) %
Cartoons–unspecified/adult	52	60	50	43
Adult adventure/sci-fi/crime/mystery/horror	7	8	14	36
Sitcoms/family viewing	22	33	34	34
Adult soap operas	14	23	33	29
Real life (reality TV)	–	–	7	16
Sports and sports-related	4	6	8	15
Adult drama	–	2	4	12
News/documentaries/dramas/wildlife	7	8	8	10
Adult/family entertainment	8	9	9	7
Adult movies	6	1	4	6
Music/young adult entertainment	-	-	-	5
None	2	1	3	4
Movies/videos children's family viewing	8	4	4	3
Children's programmes (made for TV)	9	11	5	1
Cartoons–children's adventure/sci-fi	31	41	30	0
Cartoons–children's/family viewing	57	36	10	0
Children's adventure sci-fi/horror unspecified	9	4	3	0
Movies/videos unspecified	2	2	3	0

Gender continues to be the main factor associated with different viewing preferences. When asked to name their three favourite television programmes, male preferences continued to be clearly for cartoons (63 percent mentioned cartoons or adult cartoons, such as *The Simpsons*, compared with 21 percent of females (and this was much lower than the 39 percent of females at age 12). Twenty-eight percent of the males now mentioned sports programmes, up from 15 percent at age 12, cf. 2 percent of the females. Female preferences continued for adult soap operas (53 percent cf. 8 percent of the males), and sitcoms (43 percent cf. 26 percent of the males). Where females were more likely at age 12 to prefer reality TV, now there was no difference between females and males.

Ethnicity was not related to TV programme preferences. There were only a few differences related to family resources. Interest in adult soap operas decreased from 45 percent of students from low-income homes, to 19 percent of those in very high-income homes. There was a similar trend in relation to maternal qualification. Interest in sitcoms/family viewing increased with maternal qualification levels, from 23 percent of those whose mothers had no qualification, to 48 percent of those whose mothers had a university qualification. Interest in reality TV decreased as maternal qualification levels rose, from 25 percent of those whose mothers had no qualification, to 12 percent of those whose mothers had a university qualification.

Earlier reports in the Competent Children, Competent Learners study noted that those who watched a lot of television had lower scores on average than others. We found the same pattern at age 14, for both the cognitive and attitudinal competencies. Young people who watched a lot of TV (2 hours or more a day on

average) between the ages of 8 to 14 tended to have lower scores than others. These past (or cumulative) patterns of TV watching played more of a part than current patterns.

Young people who watch a lot of TV are more likely to be male, from low-income families or whose mothers have low education levels. These factors have more of a bearing on competency performance than TV watching. Those who watch a lot of TV are more likely to be disengaged in learning, have fewer solid friendships, have friends who take risks, and be from less supportive or communicative families. This suggests that TV watching may be part of a set of experiences that, taken together, can have negative effects for young people.

The analysis we did at age 14 showed that "heavy" watchers of TV at age 14 had consistently lower average scores for reading from age near-5, and lower average scores for mathematics from age 8. They also had lower average scores for the attitudinal composite from age near-5; but their logical problem-solving scores were similar to the other groups who were watching less TV.

Earlier analysis from the study suggested that watching a lot of TV may affect the development of reading skills in childhood (Wylie, 2001). It takes time that could be spent on more challenging activities, and because of its largely visual nature and the way language is used on it, does not stretch children as much as reading or activities that involve two-way communication and the use of symbols or patterns.

COMPUTER USE

Computer use was more frequent out of school (95 percent) than at school, where just over half the students were regularly using a computer. Twenty-three percent of the students said they almost always/always used a computer at school, and 31 percent usually did. Forty percent rated their use as occasional, and 7 percent said they used a computer rarely or never. Computer use at school was most frequent among students whose mothers had no qualification (62 percent, decreasing to 44 percent of those whose mothers had a university qualification). It was also more frequent for Māori and Pacific students (69 percent cf. 52 percent of Pākehā/European and Asian students). It was higher in girls' schools (68 percent cf. 48 percent in boys' schools, and 50 percent in coeducational schools).

Ninety-five percent of the 14-year-olds used a computer out of school. Use was associated with family resources, increasing from 86 percent of those from low-income families to 99 percent of those in very high-income families, and from 88 percent of those whose mothers had no qualification to 99 percent of those whose mothers had a university qualification.

Computer use was now common, with marked increases in Internet use, wordprocessing, graphics use, and the use of CD ROMs. Partly reflecting the lower price of some uses, and their increased ease of use, there was also a marked increase in the use of digital cameras/scanners, and desktop publishing. Games were slightly less in use at age 14.

Table 5 **Computer activities at ages 10, 12, and 14**

Use↓	Age 10 (*n* = 402) %	Age 12 (*n* = 444) %	Age 14 (*n* = 375) %
Internet	21	68	92
Homework/project	31	64	84
Games	87	85	76
Wordprocessing	45	38	65
CD ROMs for information/project	23	14	52
Install software	-	-	41
Digital camera/scanner	–	3	39
Graphics	25	13	33
Desktop publishing	9	4	25
Maintain own/family computer	-	-	20
Write programs	-	2	9

Internet use had also increased markedly over the previous 2 years. These young adults were using it mainly for a range of communication purposes, to download material, and to play games.

Table 6 **Internet activities at ages 12 and 14**

Activity↓	Age 12 with home access to Internet (*n* = 374) %	Age 14 – home Internet users (*n* = 435) %
Seeking information for homework/projects	59	85
Email	52	84
Chat online	29	70
Surfing	41	63
Games	34	62
Download music/movies/TV	29	61
Download pictures & video clips	3	51
Download software	n/a	32
Design/make web pages	4	13
News group	4	7
Buy things	n/a	6
Banking	n/a	6
Trade	n/a	3

The increase in the uses made of computers and the Internet meant almost twice as much time spent on the computer at age 14: an average of 6.5 hours a week (s.d. 7.1), cf. 3.8 hours a week at age 12.

Gender was the social characteristic that was most linked to differences in computer use. There were also more differences showing at age 14 than at age 12 in relation to family resources.

The gender differences in computer and Internet use were consistent with the patterns of overall leisure use, with males showing more interest in games, and females using words more. Males spent more time on the computer each week: an average of 7.5 hours (s.d. 7.9), cf. 5.4 hours (s.d. 5.8) for females.

Males were more likely than females to:

- Play games (86 percent cf. 66 percent)
- Play games on the Internet (65 percent cf. 47 percent)
- Install software (51 percent cf. 29 percent)
- Download software from the Internet (45 percent cf. 18 percent)
- Write programmes (12 percent cf. 6 percent)
- Buy things on the Internet (9 percent cf. 3 percent).

Females were more likely than males to:

- Email (84 percent cf. 70 percent)
- Seek information for homework/projects (82 percent cf. 73 percent)
- Wordprocess (75 percent cf. 56 percent)
- Chat online (72 percent cf. 58 percent)

Māori and Pacific young people were more likely to download music/movies/TV (71 percent cf. 54 percent of Pākehā/European and Asian young people). They also tended to spend more time on average, though with a wider range (7.7 hours, s.d. 9.5, cf. 6.3 hours, s.d. 6.6).

As family income increased, so did use of CD ROMs for information or projects (from 36 percent of students from low-income families to 59 percent of those from very high-income families); and use of the computer for homework or projects (from 72 percent to 96 percent). Downloading pictures or video clips decreased with family income levels (from 59 percent to 41 percent). Time spent using a computer showed some links with family income, but not in a linear fashion.

Table 7 **Average weekly time using a computer**

Family income levels	Average time
Low (below $30,000)	5.01 (s.d. 6.2)
Medium ($30–60,000)	7.98 (s.d. 9.3)
High ($60–100,000)	5.94 (s.d. 5.9)
Very high (> $100,000)	6.57 (s.d. 6.08)

Maternal qualification levels were not related to the time spent on the computer. There were differences in how the time was spent, with an increase in word-use or school-related uses in line with increases in maternal qualification levels:

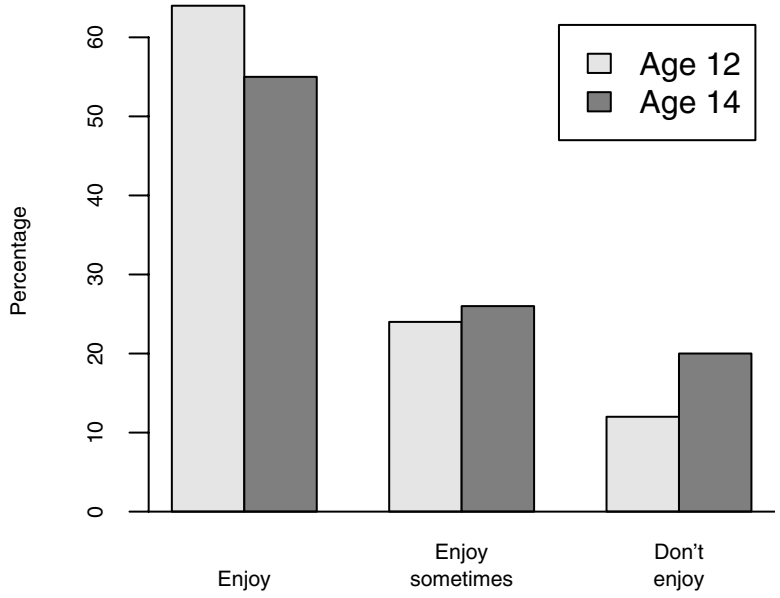
- Wordprocessing (from 51 percent of those whose mothers had no qualification to 75 percent of those whose mothers had a tertiary or university qualification).
- CD ROMs for information/projects (from 39 percent to 60 percent).
- For homework/projects (from 75 percent to 98 percent).
- Use of a digital camera or scanner also showed the same trend (from 26 percent to 52 percent).
- Those whose mothers had no qualification were least likely to use graphics (19 percent cf. 35 percent of others). They were also less likely to design or make Web pages (6 percent cf. 13 percent of others), buy things (3 percent, increasing to 11 percent), or bank (2 percent cf. 6 percent of others). They were most likely to download music/movies/TV (63 percent, decreasing to 48 percent of those whose mothers had a university qualification). The patterns here suggest more use for consumption, and less to extend knowledge or skills.

Because ICT use is near universal, and most of the sample had similar uses of it, we could not find any distinct clusters of ICT usage that we could use for further analysis in relation to school engagement and competency levels. We did look at whether current time spent with computers was related to competency levels, but found no relationship. Time spent with computers at age 12 showed reasonably consistent patterns, with lower average scores at age 14 for those who did not use a computer out of school, after taking into account family income and maternal qualification. Those who used a computer for around 3.5 to 5 hours a week tended to have higher scores than those who used it for less, but the differences were only statistically significant for mathematics. When we grouped the students in terms of the time they spent on the computer at both ages together, those who had not spent time at either age, or no time at one age, tended to have lower scores. It is not clear from this whether ICT use is less attractive to those who had lower performance levels, or whether ICT use maintained or improved performance levels.

READING

Reading was still enjoyed by over half the sample, but there was also a decline in reading enjoyment since age 12.

Figure 2 **Enjoyment of reading at ages 12 and 14**



Those who enjoyed reading had higher scores on the competencies (cognitive and attitudinal) than both those who enjoyed it sometimes, and those who did not enjoy it. In turn, those who enjoyed reading sometimes had higher scores than those who did not enjoy reading.

Enjoyment of reading is associated with most of the factors and clusters used in the analysis. Those who enjoyed reading had higher average scores for their engagement in school, positive communication and relations with family, positive friendships, and less risky behaviour. They had higher levels of motivation towards school.

On average, those who enjoyed reading at age 14 had had consistently higher scores than those who did not enjoy reading from age near-5 for mathematics, reading, and the attitudinal composite, and from age 8 for logical problem solving. Those who now sometimes enjoyed reading also had higher scores than the group who did not enjoy reading from age 8 for reading, for logical problem solving from age 10; for mathematics at ages 8 and 10 (but not age 12), and for the attitudinal composite, at ages 8 and 10. Thus the lack of interest in reading at 14 appears to have early precursors—before the sample had started to read in fact—with lower levels of mastery of skill and knowledge using language, symbols, and the attitudes that make it easier to make the most of the classroom environment. It is noteworthy that the pattern with logical problem solving—which does not involve language—does not parallel these until age 8, after the first 3 years of school, which has concentrated on language.

Kinds of reading

We asked what kinds of things they read out of school for their own enjoyment. Two percent did not read anything in the categories we read out. Fiction continued to head the list, but magazines were also becoming popular, and newspaper reading had increased from age 12.[3] Non-fiction and reference material showed some decline.

Table 8 **Young people's reading for enjoyment**

Reading material↓	Age 12 (*n* = 496) %	Age 14 (*n* = 475) %
Fiction	85	77
Magazines	52	76
Emails/Internet material/CD ROMs	-	65
Daily newspaper	42	53
Instruction books/manuals/recipes/puzzle books	61	44
Junk mail	45	41
Non-fiction	49	39
Word puzzles/crosswords	-	31
Comics	27	27
Reference material, e.g. encyclopaedias/dictionaries	35	22
Religious/spiritual	13	10

We endeavoured to see if the 14-year-olds could be sorted into distinct groups by the kind of material they read, but though there were indications of some being more circumscribed in their reading than others, there were no distinct groups.

Half the young people had a reasonable number of books in their homes (50 percent estimated there were more than 200). Twenty-six percent had between 100–200. Seventeen percent had between 26 to 100, and 6 percent, less than this.

Two-thirds used a public library, down from the three-quarters who did so at age 12. But not everyone used a library to widen their range of reading resources.

Table 9 **Young people's public library uses at age 14**

Use	(*n* = 475) %
Get books for own interest	54
Get books for school work	51
Study	31
Get magazines for own interest	23
Get videos/CDs/games/DVDs	14
Meet friends	8
Internet	7
Computer (other than Internet & library searches)	6
Pass time/sleep	2

[3] At age 12, we asked the sample to say what kinds of material of the list we read out they read at home, without specifying enjoyment. This may account for some differences between age-12 and age-14 answers.

Reading and social characteristics

Two years earlier, girls enjoyed reading more than boys, and reading enjoyment increased as maternal qualification levels increased. At age 14, we also see differences related to family income levels and ethnicity. In the table below, the number of books in the young people's home is included as an indicator of the range of reading material available to them, and as a suggestion of the value placed on reading in the home. This has no bearing on the gender differences, but the differences we see for the other social characteristics show some consistent trends. Use of the public library to get books related to their own interests also shows some consistent trends.

Table 10 **Reading enjoyment and social characteristics**

Social characteristics	Enjoy reading	Sometimes enjoy reading	Don't enjoy reading	More than 200 books in home	Get books for own interest from public library
Gender %					
Male	47	29	24	47	42
Female	63	22	15	54	67
Ethnicity %					
Māori and Pacific	38	29	33	30	44
Pākehā/European and Asian	57	25	18	58	56
Maternal qualification %					
None	35	31	34	22	31
Trade	51	30	19	46	58
Tertiary	58	27	15	56	59
University	75	11	14	79	57
Current family income[4]%					
Low	45	28	28	34	50
Medium	46	33	21	41	52
High	59	25	15	51	59
Very high	64	17	19	64	51

At age 14, we also found more differences in reading patterns for different social groups than we had at earlier ages.

Gender

Females were more likely than males to read most of the categories we asked about, other than the newspaper, and comics. Thirty-five percent of the males read comics cf. 18 percent of the females.

Ethnicity

Pākehā/European and Asian young people were more likely to read books: fiction and nonfiction. Māori and Pacific young people were more likely to read religious and spiritual material.

Maternal qualification

Young people whose mothers had high-level qualifications were more likely to enjoy fiction and nonfiction, and mention email, Internet material, or CD ROMs, and less likely to mention junk mail.

Family income

Fiction and daily newspaper reading were more likely with higher family income levels.

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[4] Family income levels at age near-5 showed similar patterns in relation to enjoyment of reading as current family income levels.

WRITING

In contrast to reading, social characteristics other than gender were not linked to enjoyment of writing. But writing was also enjoyed less at age 14: 37 percent enjoyed writing, down from 50 percent at age 12. Thirty-five percent enjoyed it sometimes, and 28 percent did not enjoy it. Forty-five percent of females enjoyed writing cf. 30 percent of males. Females were more likely to write letters, keep a journal or diary, write poems or plays, or emails. Only email writing showed an increase with maternal qualification or family income levels; young people with non-qualified or trade-qualified mothers were more likely to keep a journal or diary, and those from low-income families, most likely to write lyrics.

Most of the writing done by the 14-year-olds was short; there was more writing used to maintain relationships than for creative purposes. There was a marked drop-off in the latter between the ages of 12 and 14.

Table 11 **Out-of-school writing activities at ages 12 and 14**

Writing activity↓	**Age 12 (*n* = 496) %**	**Age 14 (*n* = 375) %**
Emails	49	76
Letters	51	52
Copying	49	34
Journal/diary	31	28
Stories under 2 pages	42	15
Poems/plays	24	15
Songs (lyrics)	-	15
Stories over 2 pages	19	9
Reports (factual writing)	29	7

PAID WORK

Thirty-four percent of the young people earned money (other than pocket money), up from 24 percent at age 12. Social characteristics were unrelated to whether they did so, but were related to how long they spent. Earning money took on average 4.36 hours a week (s.d. 3.8) for those who did so. Young people with university-qualified mothers had lower average hours (2.47, s.d. 2), as did those from very high-income homes (2.93, s.d. 1.2). The female average was 4 hours (s.d. 3.9) cf. 4.7 (s.d. 3.7) for males. Māori and Pacific young people had higher average hours, but also a wider range (5.35, s.d. 5.6).

Most of the work was informal. Ten percent delivered papers or advertising material, 9 percent babysat, 8 percent did manual work, such as mowing lawns, and 6 percent cleaned. Three percent worked in shops. Other work included feeding or walking pets, office work, sports-related, trading, modelling, and in a service station.

There was a trend for students working more than 5 hours a week to have lower average scores than others, but the differences were not statistically significant (possibly because there was only 35 in this group).

CLUBS, LESSONS, AND MUSIC

Access to non-school opportunities to follow interests, in the company of like-minded others, and with the support of adults is important: it allows young people to develop forms of capital that are important (human, cultural, and social). We asked parents about this, so we could compare with parents' answers at previous ages.

Clubs

Three-quarters of the young people belonged to a club or group, much the same as at age 12, and slightly less than the 85 percent at age 10. Sports clubs continued to be the most popular. Fewer belonged to service clubs (e.g. Guides).

Table 12 **Club membership at ages 12 and 14**

Club type ↓	Age 12 (*n* = 496) %	Age 14 (*n* = 476) %
Sports	67	-[5]
Sports team	-	53
Sports – individual	-	30
Performing arts	18	18
Church	15	15
Service	13	7
Ethnic/cultural	3	4
Collectors/hobby	3	2

In earlier years, males had been more likely to be club members. At age 14, this was no longer the case. However, they were still more likely to be members of sports teams (but not individual sports); while females continued to be more likely to belong to performing arts clubs. They were also more likely to belong to a church, or an ethnic/cultural group. Pākehā/European and Asian young people were more likely to belong to clubs for sports undertaken individually.

Club membership reflected family income: it rose from 57 percent of young people from low-income families, to 82 percent of those with high or very high family income. This overall pattern was reflected in sports team membership, individual sports, and performing arts. Young people from very high-income families were less likely to be involved in churches.

Membership of a club was also less likely for young people with non-qualified mothers (63 percent). They were also least likely to be taking part in individual sports (15 percent). Membership of performing arts clubs was more likely for those whose mothers were tertiary- or university-qualified.

[5] We separated this out at age 14 into two categories, team and individual.

Lessons

Forty-seven percent of the sample had lessons outside school, the same proportion as at age 12. Most of the lessons were unrelated to school subjects. There was some decline in the proportion that had performing arts lessons, and some increase in those who had sports lessons.

Table 13 **Lessons outside school at ages 12 and 14**

Club type ↓	Age 12 (*n* = 496) %	Age 14 (*n* = 476) %
Sports	18	24
Performing arts	30	24
School-related – remedial	5	4
School-related – advanced	2	2
Ethnic/cultural	2	2
Fine arts	3	1
Language	-	1
Hobby/interest	-	0.4

Males were now just as likely as females to have lessons outside school. They were almost twice as likely to have sports lessons (29 percent cf. 17 percent), a change from age 12 where there was no difference between male and female. The reverse imbalance in the performing arts lessons continued (35 percent of females, and 15 percent of males). Males were more likely to be taking school-related subjects, both remedial (6 percent cf. 3 percent of females), and advanced (3 percent cf. 1 percent of females).

Pākehā/European and Asian young people were more likely to have lessons outside school (49 percent cf. 30 percent of Māori and Pacific young people), and more likely to have performing arts lessons (26 percent cf. 14 percent).

Family income was clearly linked to participation in lessons outside school, increasing from 19 percent of young people in low-income families, to 60 percent of those in very high-income families. This income-linked pattern was evident in relation to sports and performing arts lessons, and to remedial lessons in school subjects—but not for cultural lessons or advanced lessons in school subjects.

There was a similar link between participation in lessons outside school, and maternal qualification levels. Fourteen-year-olds with non-qualified mothers were less likely to take part in sports and performing arts lessons; and as maternal qualification levels rose, so did participation in advanced school subject lessons. Participation in remedial lessons was much the same across the board.

Music

Forty percent of the sample actively participated in music making. This is somewhat less than the 49 percent at age 12. Thirty-five percent played an instrument, and 6 percent sang in a choir (down from 11 percent at age 12). Six percent played in an orchestra or band, and 2 percent in a cultural group.

Females were more likely to sing in choirs (9 percent cf. 3 percent of males), and males to play in an orchestra or band (7 percent cf. 4 percent of females). Most of those who performed in a cultural group were Māori and Pacific.

Family resources continued to play a part in music involvement. Twenty-nine percent of those with non-qualified mothers played an instrument or sang, increasing to 51 percent of those with university-qualified mothers. There was a similar trend in relation to family income levels.

PARENTAL VIEWS OF THEIR CHILD'S MAIN INTERESTS

We asked parents what their child's main interests were, the things that they most enjoyed or got absorbed in. Around half nominated two or three, and a quarter could think of four or five activities that were important for their child.

Table 14 **Parental views of their children's main interests**

Activity	(*n* = 476) %
Friends	37
Organised sports	35
Reading	30
Computer/Playstation games	28
Informal physical activity	21
Listening to music	18
Performing arts	17
Watching TV/movies	17
Graphic arts	8
Family activities	7
Domestic skills, e.g. baking	6
Cars/machinery	6
Animals	4
Shopping	4
Personal appearance	2

Gender differences were evident for most of the activities. Parents of males were more likely to identify their main interests as (in descending order): computer games, organised sport, informal physical activity, watching TV or movies, and cars or machinery. Parents of females were more likely to identify their main interests as: reading, listening to music, performing arts, graphic arts, domestic skills, shopping, animals, and personal appearance.

Reading or informal physical activity were more likely to be identified as main interests by parents of Pākehā/European and Asian young people, than by parents of Māori and Pacific young people.

What individuals were thought to enjoy most was not strongly tied to *family income* for inexpensive activities—though, somewhat surprisingly given the young people's answers about how they spent their time, watching TV or movies was mentioned more by parents in high- or very high-income families. Reflecting their lower involvement in sports clubs and lessons, organised sports was less mentioned for 14-year-olds from low-income families.

The higher the *maternal qualification* level, the more likely it was that reading was mentioned as a young person's main interest (from 15 percent of those with non-qualified mothers, to 39 percent of those with university-qualified mothers). A similar pattern was evident for the performing arts.

PARENTS' OWN USE OF LEISURE TIME

As a group, parents watched less television than the 14-year-olds, an average of 1.9 hours (s.d. 1.1). But like their children, watching television was often part of their everyday life. Unlike their children, there was little change in their leisure patterns over the previous 2 years. The exceptions were more use of computers at home (but not to a daily level), and some slippage in attendance at formal meetings.

Table 15 **Parental leisure activities**

Frequency→	Often/ most days	Once or twice a week	Less than once a week	Never
Activity↓	%	%	%	%
Watch television	74	16	9	1
Read a newspaper	63	27	8	2
Talk with friends	57	34	9	0
Read a book	54	16	25	6
Play sport/take exercise	40	33	18	10
Write a letter/email	35	26	30	-10
Use Internet	30	28	26	-16
Shopping	21	69+	-9	1
Read a magazine	15	32	46	7
Home decorating/maintenance	14	17	52	17
Study	12	11	18	58
Make things – a hobby/craft	10	14	41	36
Voluntary work	8	20	38	34
Garden	7	25	53	15
Play computer/video games	4	8	17	70
Go to art/music/dance activities	3	10	49	38
Go to a meeting for school/church/voluntary organisation	3	-16	68	13

We looked at whether patterns were different in relation to family resources of income and qualification. Reading books often was less likely for parents in families with a non-qualified mother (38 percent), as was reading a newspaper (46 percent). Internet use on most days increased with the maternal qualification level, from 9 percent where the mother had no qualification, to 48 percent of university-qualified mothers. There was a similar trend in relation to writing letters/emails. Going to art/music/dance activities was most common for the latter (80 percent), as was involvement in voluntary work (75 percent cf. 51 percent of parents where the mother was non-qualified). Studying was less likely for parents where the mother was non-qualified (25 percent).

The higher the family income, the more likely it was that parents often read books and newspapers, accessed the Internet, and wrote letters or email, or went to art/music/dance activities.

The amount of television watched by parents was related to social characteristics. Forty percent of the parents interviewed in families where the mother was non-qualified watched 3 or more hours a day, dropping to 4 percent of parents interviewed where the mother was university-qualified. Only 7 percent of parents in very high-income families watched 3 hours or more a day cf. 22 percent of others.

Four clusters were suggested by analysis.

Literate and involved
Forty-four percent of the parents interviewed were in this cluster. They were most likely to read often, including newspapers, use the Internet, keep in regular contact with friends, play sport or exercise, attend performances, and most likely to do voluntary work. They tended to be from high and very high family income homes, and to include more university-qualified mothers. There were more parents studying most days in this cluster.

TV and little involvement
Twenty-seven percent of the parents interviewed were in this cluster. As the title indicates, they were one of the two clusters more likely to watch TV regularly; they were least likely to read often. They were least likely to be involved in voluntary work, hobbies, or study, but also less likely to play computer games or use the Internet. This group had had relatively low family income at age 5, but relatively high at age 14; and a spread of maternal qualification levels.

Mixed interests
Ten percent were in this cluster, which was more varied than the others, e.g. including both those who used the Internet often, and those who never did, and those who played sport often, and those who never did. They were less likely to study, do voluntary work, attend meetings, or read newspapers. They kept in regular contact with their friends, and were least likely to regularly watch TV. There was a relatively high proportion of low-income families in this cluster, and the highest proportion of non-qualified mothers.

TV and some involvement
Nineteen percent of the parents were in this cluster. Along with often watching TV, they were less likely to read or keep up with newspapers and magazines. They took part less in sport, performance, or making things, but they were relatively likely to do voluntary work or attend meetings. It had a high proportion of parents who were not studying. This cluster had a higher proportion of low family incomes at both age near-5 and age 14, and a relatively large proportion of non-qualified mothers.

Study

Forty-two percent of the parents indicated that they spent some time studying. Thirty percent mentioned career or work-related study. Five percent were studying a topic related to their personal development, 4 percent one related to their interests, and 3 percent, computer use. Twenty-one percent said their study would lead to a qualification: an NZQA certificate or trade certificate for 7 percent, a diploma for 5 percent, an undergraduate university degree for 4 percent, and a postgraduate university degree for 3 percent.

Personal development and computer study attracted parents across the board. Work-related study was more likely for parents where mothers were tertiary- or university-qualified (37 percent cf. 22 percent of parents in families where mothers were non-qualified), and for parents in high- and very high-income families. Study leading to a qualification was most likely for parents where the mother had a trades qualification (25 percent cf. 17 percent of others). None of the parents where the mother was non-qualified was studying for a university degree.

SUMMARY

Television remained a prime leisure activity for these young adults, as was being in the company of others—hanging out, or in a more organised way. Sport, reading, and computer use were also activities that happened often for many in the sample. There were marked gender differences: females more exercised by reading and the arts, and social communication; males by computer games, sport, and television. Family resources were also reflected: lower-income or maternal- qualification levels went along with less engagement not just with what one might expect: reading, computer use, homework, and arts classes, but also with less engagement in competitive sport.

Four clusters of young people were found:

- Sports players (34 percent)
- Electronic games~no strong interests (24 percent)
- All-rounders (reading/arts/sports) (28 percent)
- Creative interests (13 percent).

Some signs of growing independence among the sample were the marked increases since age 12 in those who have a phone in their bedroom (probably mobile), those with computers, and Internet access. A third now had a TV set in their room.

Television use remained at much the same level as at age 12. Cartoons and sitcoms remained popular, but they were joined by increased interest in adult programmes, and to a lesser extent, reality TV and sport: all programmes with some narrative line. There were some gender differences in programme preferences.

Computer use was now almost universal, particularly the Internet. Main uses were for information for school, email, online chatting, surfing, games, and downloading material. At this stage, few were using it to bank or buy things. There were some gender differences here, with males more interested in games, installing software, or writing programs, and girls, emailing, seeking information, wordprocessing, or chatting online. ICT can be used to extend knowledge, extend the use of skills, or to support consumption. There was less use of ICT to extend individuals by those with non-qualified mothers.

Enjoyment of reading—which turns out to be a key indicator for learning engagement as well as competency levels—had declined since age 12; there was less use of public libraries, though only half the sample had a reasonable number of books in their home. Social characteristics are reflected now in more differences in reading enjoyment and access to reading material than we saw at earlier ages. However, newspaper readers increased (to just over half).

Writing was also enjoyed less at age 14. Email writing had increased markedly since age 12, but there was a decline in reports and creative writing.

Just over a third of the sample now had paid work, mostly informal. Club membership was slightly down from age 12, with a drop in those belonging to service groups. Participation in music had also dropped. Just under half had lessons outside school, mostly sports or performing arts. These opportunities continued to reflect family resource levels.

The clusters we found for parent interests or use of leisure were somewhat different—they include a dimension of involvement or extension. They were:

- Literate and involved (44 percent)
- TV and little involvement (27 percent)
- Mixed interests (10 percent)
- TV and few interests (19 percent).

Parents were also using ICT more. Otherwise, their use of leisure time remained much the same as 2 years earlier—contrasting with the changes in their children's use of leisure time, which signals how much the young people were growing in their adolescence, trying out new things, and spending more time communicating with each other.

3. Family interactions and resources

In this chapter, we start with a picture of the families the sample were living in, and draw on parent reports of shared activities before comparing parent and child views of rules or expectations around the 14-year-olds' activities, and how disagreements are handled. We then move on to describe young people's and parents' views of their relations and interactions, and how these views relate to school engagement, relations with friends, and risky behaviour. Finally, we look at the key resource of family income, and its sources, particularly parental employment; and at changes over time for the sample and what these changes mean for competency levels at age 14.

FAMILY STRUCTURES

At age 14, 69 percent of the sample were living in two-parent families with both birth parents; and 11 percent in two-parent families with one step-parent. Nineteen percent were one-parent families, up slightly from 17 percent at age 12. One-parent families (with only one adult to earn) were most likely to be low-income: 51 percent, with 36 percent in the medium-income bracket. There is some overlap with maternal qualification and ethnicity. Just over half the young people with non-qualified mothers lived in one-parent families, as did a third of Māori and Pacific young people in the sample.

Most of the sample also lived with siblings, and a few lived with other relatives, or non-relatives. Extended families were rare in this sample.

Table 16 **Household members[6] for the study sample at age 14**

Relationship to young person	(*n* = 476) %
Birth mother	93
Birth father	75
1 biological sibling	43
2 biological siblings	32
3 or more biological siblings	12
Male step-parent	9
Non-relatives	4
Female step-parent	3
Grandfather	3
Grandmother	2
1 blended sibling	2
2–3 blended siblings	2
Other relatives	2
Average number in household	4.4 (s.d. 1.1)

Where a young person was not living with both of their birth parents, we asked the parent about that relationship, and we asked the young person whether they spent time in another household with their other parent, or relatives responsible for them. Around two-thirds of those not living with both parents spent some time in another household. Less than half of these saw their other parent every week on a regular basis. Six percent of the sample's parents shared their care, and 2 percent spent most weekends with their other parent.

6 Parent report.

Weekends were often times for visiting (7 percent), as were school holidays (6 percent). Fathers were most likely to be the parent living in another household: 10 percent spent time with their father and partner, and 7 percent with their father alone. Three percent spent time with their mother and partner, and 2 percent with their mother alone. Three percent spent time with other relatives, and 1 percent, with non-relatives.

SHARED ACTIVITIES

We asked parents what were the main things they did with their child. Most of those who spoke with us were mothers, which may have some bearing on what was shared. The question was open-ended, so it is likely that parents did not mention everything they did (e.g. holidays occurred to some, but others may have been thinking of everyday activities). Everyday activities, such as eating, talking, shopping, and watching TV together were reported in much the same proportions as they were when the young people were aged 12. But signs of increased independence are there, such as less time spent transporting them to activities, less time on shared interests or hobbies, less time on shared physical activity, and less time working on homework together.

Table 17 **Main activities parents do with their children at ages 12 and 14**

Parental involvement↓	**At age 12 (*n* = 496) %**	**At age 14 (*n* = 476) %**
Spend time with family/friends	63	46
Transport student to activities	58	42
Shop	41	40
Physical activities	47	36
Talk	36	36
Eat together	36	34
Watch student in sport	-	32
TV/video watching	28	28
Holidays	-	28
Go to movies	15	21
Interest/hobby	31	18
Housework	19	18
Homework	27	14
Church/spiritual	11	13
Watch sport[7]	43	11
Play sport	17	11
Art/cultural/music/theatre	13	11
Watch student perform – dance/drama/music	-	8
Work together	-	7
Computers	8	5
Nothing (young person's preference)	-	4
Other	5	3
Organisation	3	1
Reading	7	0

[7] The apparent large reduction here is probably because we had a finer coding at age 14, separating out watching any sport, and watching the child play sport. Taken together, these two categories add to 43 percent, the same as the broad category used at age 12.

Gender differences were evident in relation to activities related to interests—but not in all cases. While males watched more television, parents of females were more likely to say they watched television with their child, probably reflecting shared programme preferences. They were also more likely to shop together and do housework; and watch their child in performances or go to performances together. Watching sons play sport was more common than watching daughters. Working together was also more common. All the young people whose parents said they did not want to do things with their parents were male.

Pākehā/European and Asian young people were more likely to do physical activities with their parents (40 percent cf. 21 percent of Māori and Pacific young people), or activities with their parents that involved interests or hobbies (20 percent cf. 8 percent); and Māori and Pacific young people more likely to go to church with their parents (26 percent cf. 10 percent). Parents of Pākehā/European and Asian young people were more likely to mention joint holidays (31 percent cf. 14 percent). Eight percent of the Māori and Pacific young people were said not to want to do things with their parents cf. 3 percent of the Pākehā/European and Asian young people.

Parent-child time spent together en route to the young person's activities or in physical activity was less mentioned by those with low family incomes, and watching them play sport, less mentioned by those with low or medium family incomes. Holidays were mentioned most by those with very high family income.

As at age 12, young people of non-qualified mothers were less likely to spend time with their parents as they were taken to activities, which is consistent with their being less involved in sports, clubs, or lessons. They were less likely to be going to the movies together also, and eating together was also mentioned less. But otherwise, the patterns for parent-child activities at this age did not seem to reflect differences in maternal qualification levels.

We also asked parents whether their child talked to them about what they were reading: 40 percent said they did, and 22 percent, that they did so sometimes. Social characteristics were reflected in whether this occurred: it was more likely to happen in very high-income families, with daughters, and in Pākehā/European and Asian homes, and less likely to happen where mothers were non-qualified.

WHO'S THERE WHEN 14-YEAR-OLDS COME HOME FROM SCHOOL?

Sixty-seven percent of the 14-year-olds came home to a parent, somewhat fewer than the 73 percent when they were 12 years old. Twenty-nine percent came home to an older sibling, and 24 percent, to a younger sibling. Five percent came home to a relative, and 5 percent to another adult. Twenty-five percent now came home to an empty house, up from 15 percent at age 12. This was more likely in high- and very high-income families (rising from 14 percent of those in low-income families to 30 percent of those in very high-income families). It was also more likely for Māori and Pacific students (36 percent).

Parents were the main caregivers for their age-14 children during school holidays, and before and after school (84 percent) and when they were sick (95 percent). Grandparents or other relatives also took these responsibilities (15 percent around school times, and 11 percent when the child was sick). A sibling looked out for 11 percent of the students around school times, but siblings were much less likely to look after them if they were sick (1 percent). Parents said that 22 percent of the students looked after themselves around school times and holidays, and 8 percent, when they were sick.

Parental reports of their own health showed a very slight decline from 2 years earlier: 20 percent now said they had some health concerns (up from 18 percent), and 2 percent had poor health (up from 1 percent).

PARENTAL EXPECTATIONS

To find out more about the structure of young people's home experiences, and indirectly, something about underlying parental approaches to parenting, we asked some questions about the kinds of rules or expectations parents had for their children. Most of the parents in the study had expectations or rules related to schoolwork, housework, and language. They also had rules related to the use of media. Dress and use of the telephone were the two aspects of children's lives which were least likely to attract parental authority.

The study sample tended to be less aware of parental rules or expectations. This may be because parents may be setting conditions or guiding behaviour in non-overt ways, or that parents do not always enforce these rules and expectations. Differences in parental and young people's answers here may also reflect differences in perceptions of the role of parental rules. Parents may see having rules as indicative of "good parenting", and provide an optimistic view, whereas young people see not having parental rules as indicative of their own independence, and thus understate their situation.

The greater mobility and desire for independence of 14-year-olds can be seen, ironically, in the increase in the areas about which parents said they had rules or expectations compared with when the young people were aged 12. (These are asterisked in the table below.) Interestingly, the young people's views had not changed correspondingly over this time—only with Internet use was there an increase in those who thought their parents had rules or expectations.

Table 18 **Parental expectations or rules—parents' and young people's views**

Frequency→ **Parental expectations↓**	**Parent view that rule exists (*n* = 476) %**	**Young people's view that rule exists (*n* = 475) %**
Bedtime on school days	87-	67
Homework	95	84
Language	95*	85
Doing housework	87	79
Time to be home by	91*	80
TV watching	82	57
Where young person can meet his/her friends	86*	52
Spending time with friends	78*	47
Using computer for games	69*	42
Using the Internet	78*	61*
Playing video games/Playstation	56*	41
Dress	53	19
Using the telephone	66*	40
Movies or videos young person can watch	85	-
Use of alcohol[8]	92	89

- = not asked; * = increase since age 12

Parents also indicated that some activities did not apply in their household—one percent did not have television, 7 percent did not have computers, 11 percent did not have Internet access, 23 percent did not have video games or Playstation, and one household did not have a telephone.

What expectations or rules actually consist of seem to differ for quite a few families in the sample. The average proportion of agreement was 65 percent. Young people and parents were most likely to give the same answer in relation to rules or expectations about homework, language use, alcohol use, the time the

[8] First asked at age 14.

young people should be home by, and housework (85–76 percent agreement), and least likely to give the same answer about playing video games (43 percent).

Around half those who spent time in another household said the rules were different in that household—equally divided between stricter rules, and less strict rules.

Females were more likely to mention rules about where they could meet friends, but less likely to mention rules about playing computer and video games (probably because they played them less), and about bedtime on school days. Pākehā/European and Asian young people were more likely to mention rules about bedtime on school days (69 percent cf. 52 percent). Rules about watching television were less likely to be mentioned by young people from low-income families (43 percent, rising to 61 percent of those from high- or very high-income families), with a similar trend in relation to maternal qualification levels. Dress rules were less likely to be mentioned by young people with university-qualified mothers (12 percent).

Looking at the parents' responses, we find similar patterns in relation to computer and video games, with more parents of males mentioning rules. But parents of females were more likely to mention rules about telephone use and dress. There were no ethnic differences.

What do families do when rules are broken?

We also asked the sample and their parents what happened if the young person broke parents' rules. It may be a relief to some parents to know that only 3 percent of the young people said they had never broken or ignored a parental rule, and only 7 percent of the parents said this (the difference may suggest that parents do not know everything about their child's activities).

Around half gave just one answer, which may suggest that there was no distinction made about the area in which the rule was broken. Parents were much more likely than the young people to think that negotiation or discussion took place—but what felt like discussion to parents may have felt like being told off to young people. Young people were more likely to think they had been yelled at—but less likely to mention physical punishment. Both young people and parents made little mention of physical punishment.

Table 19 **What happens when parental expectations or rules are broken**

Frequency→	**Parent view**	**Young people's view**
	(*n* = 476)	**(*n* = 475)**
Response ↓	**%**	**%**
Withdrawal of privileges/something desirable	52	39
Grounded	26	29
Told off	-	23
Negotiate/discuss	44	20
Parent yells at young person	4	9
Depends	12	7
Additional chores	5	4
Sent to room/time out	2	4
Physical punishment	3	1

Twice as many females as males said they negotiated or discussed things with their parents if they broke rules (26 percent cf. 14 percent). Young people with non-qualified mothers were most likely to be grounded (42 percent) or yelled at (19 percent). Negotiation was mentioned more by young people with tertiary- or university-qualified mothers (25 percent cf. 17 percent of trade- or non-qualified mothers). Time out was most likely to be mentioned by young people with university-qualified mothers (8 percent).

Parents' perspectives did not indicate any difference in how males and females were responded to. Parents of Māori and Pacific young people were more likely to mention that they would ground them (43 percent cf. 23

percent of parents of Pākehā/European and Asian young people), or give physical punishment (10 percent cf. 1 percent). Grounding was also linked to levels of maternal qualification (42 percent for those whose mothers were non-qualified, decreasing to 13 percent for those whose mothers were university-qualified). There was a similar pattern in relation to family income levels. The higher the family income, the more likely it was that negotiation or discussion would take place (rising from 31 percent of parents saying this in low-income families, to 55 percent of those in very high-income families).

How disagreements in families are handled for 14-year-olds

As at age 12, we also asked parents what they did if they disagreed about something with their child. Disagreements between parents and their 14-year-olds are common. Only 3 percent in this study said they and their children never disagreed. Parents' reports of what they would do when there was a disagreement are given in the next table. Negotiation continues to be the main response. It has increased as the young people grow older—but so has the parent getting cross.

Table 20 **Parental responses to disagreements with their child**

Response ↓	At age 12 (*n* = 496) %	At age 14 (*n* = 476) %
Parent and child negotiate	64	77
Parent gets cross and gets her/his way	38	49
Parent stays calm and gets her/his way	22	27
Child usually gets his/her way	9	7
Parent ignores the disagreement & waits for it to go away	8	10

Fifty-two percent of the parents reported more than one response in this situation, indicating that, for example, those who negotiated could also get cross.

Parents of males were more likely to say they stayed calm and got their way (35 percent cf. 18 percent of females). But this was the only link with social characteristics.

RELATIONS AT HOME

Young people's views

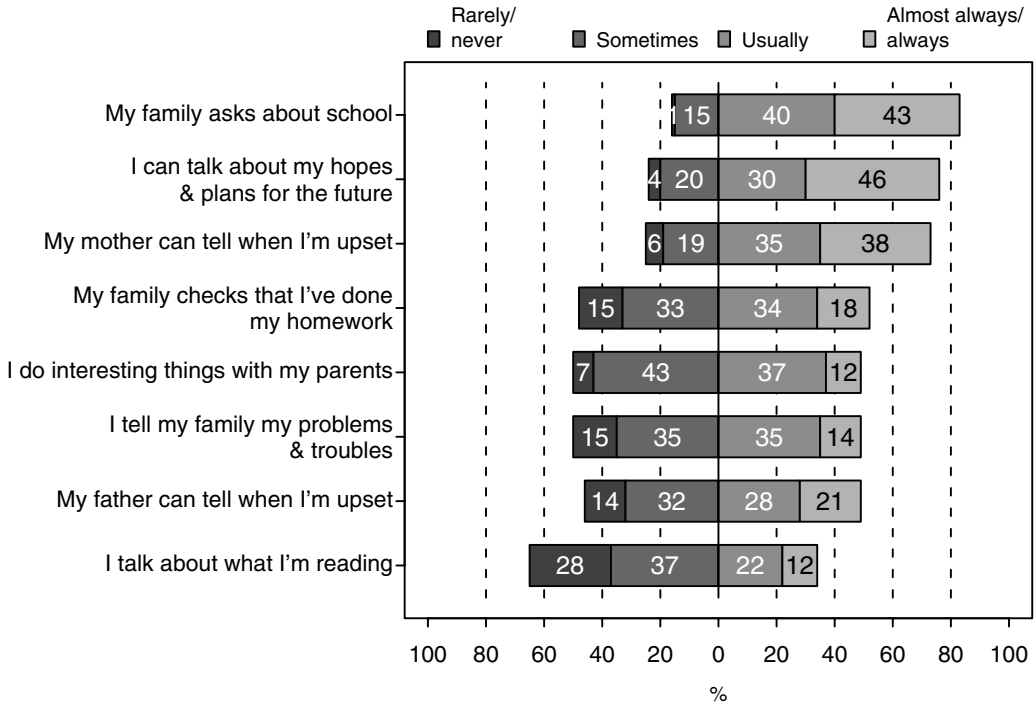
We asked the 14-year-olds to tell us how well 40 statements about their family and home life corresponded with their own experience. Some of these statements had been included in previous phases of the study (at ages 10 and 12); others came from other New Zealand surveys of teenagers. We aimed to gather insight into these dimensions of home life: closeness and warmth; communication; parental expectations; trust; and tension.

When we undertook a factor analysis, we found four factors, covering 28 items. These are described below, and then we look at the items that did not group with other items. Compared with age 12, the 14-year-olds were both treated as being more independent, and appeared to be seeking further autonomy—though still needing and valuing trust, closeness, and support.

Family communicates well factor

Family communication was positive in a general sense. The 14-year-olds were more independent than at age 12 (57 percent said then that their family knew that they had done their homework cf. 18 percent saying now that their family checked they had done their homework).

Figure 3 ***Family communicates well* factor items**[9]



The average score for the *family communicates well* factor was 6.2 on a scale of 10. Highest average scores for this factor were from young people in the high family income group (6.5) and those whose motivation was high (6.7); lower average scores were for those in the *standing out* values group (5.9), those whose family financial situation was difficult (5.6), those whose interests lay in the *electronic games~no strong interests* cluster (5.4), whose parents were in the *mixed interests* cluster (5.5), and for Pacific young people (5.3). It was also lower for those who tended not to complete their homework (5.5). It was higher for those who were "low" TV watchers over time (6.4).

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[9] In this graph and similar graphs that follow, the percentages for any one item do not always add up to 100 percent because not every participant provided an answer for every question. Questions about fathers had a lower response rate than others, reflecting the proportion living in one-parent families (usually, but not always, the mother).

There were strong correlations for this factor with the other positive factors based on student perceptions of their family relations, though the correlation with parent views of communication with their child was not strong. Young people who scored highly on this factor also tended to score highly in terms of their engagement in learning (including using internal markers of their progress) and, conversely, tended not to have high scores in relation to showing risky behaviour, or having friends with risky behaviour. However, there was little correlation with scores for the negative factors (whether child or parent views)—indicating that a young person could feel family pressure, or their parent describe friction with their child, yet the young person could also feel that there was good communication within the family.

Table 21 ***Family communicates well* factor correlations with other study factors**

Factor	Correlation level
Supportive family	0.65
Inclusive family	0.59
Absorbed in learning	0.45
Confident at school	0.37
Positive learning environment in English	0.35
Internal markers of achievement	0.34
Solid friendships	0.34
Engaged at school	0.33
Close parent-child communication	0.33
Positive attitude to English teacher	0.31
Challenging schoolwork	0.31
Positive learning environment in mathematics	0.28
Positive learning environment in science	0.27
Negative view of science	0.26
Positive attitude to science teacher	0.26
Positive attitude to mathematics teacher	0.24
Praise & achievement	0.23
Self-confident (parent view)	0.21
Dissatisfaction	-0.23
Risky behaviour	-0.24
Friends with risky behaviour	-0.27
Disengaged in learning	-0.33
Negative view of English	-0.35

Inclusive family factor

Most of the sample felt included in their family. Four of the six items in this factor were used at age 12, and fewer gave the highest score on these now that the sample was age 14.

Table 22 **14-year-old views of *inclusive family* factor items**

View→ Aspect↓	Almost always/ always %	Usually %	Sometimes %	Rarely/ never %
I am comfortable	57-	37	5	0.4
I get help if I need help	52-	39	7	1
My family respects my feelings	44	42	12	1
I get treated fairly	37-	48	13	2
The expectations are fair	35-	50	15	1
Everyone is too busy to bother about me (R)	1	3	28	68

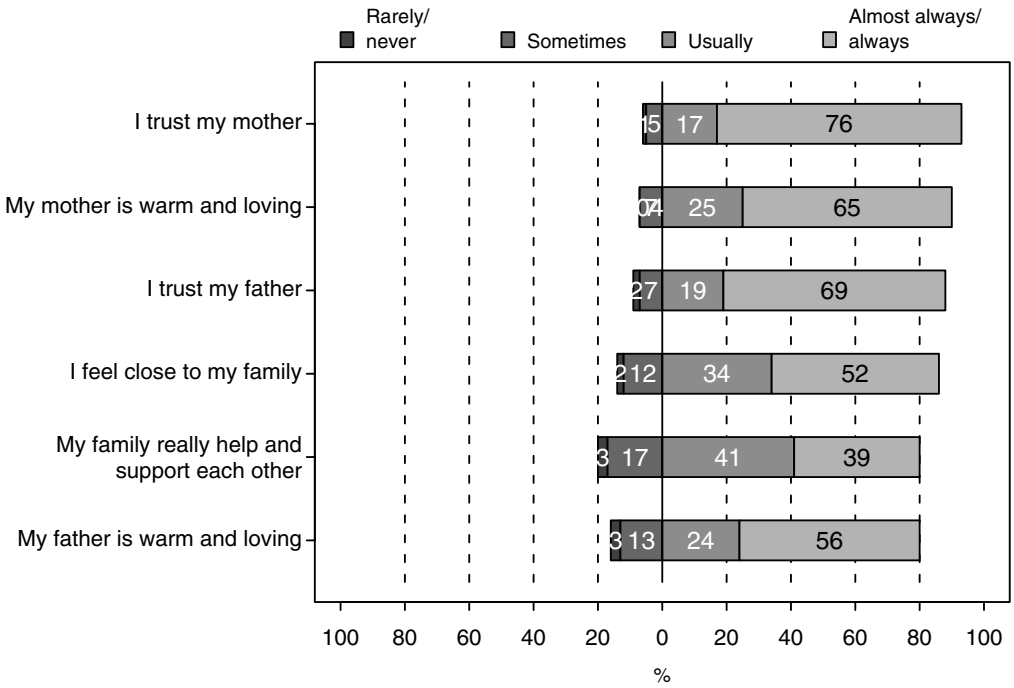
- = lower than at age; (R) = reverse-scored

The average score on this factor was 8.12. Social characteristics were unrelated to scores for the *inclusive family* factor. The associations with other factors and with clusters were much the same as those found for the *family communicates well* factor.

Supportive family factor

Six items comprise this factor, which focuses on trust, closeness, and support. Four-fifths of the 14-year-olds usually or always trusted their parents, found them warm and loving, and felt supported by them. Trust was deeper than closeness and support. The adolescent stress on forming their own identity shows here in the much lower proportion of those who said they almost/always felt close to their family: 52 percent cf. 82 percent at age 12.

Figure 4 ***Supportive family* factor items**



Scores on the *supportive family* factor were unrelated to social characteristics other than family income: young people in high- and very high-income families had somewhat higher average scores than others.

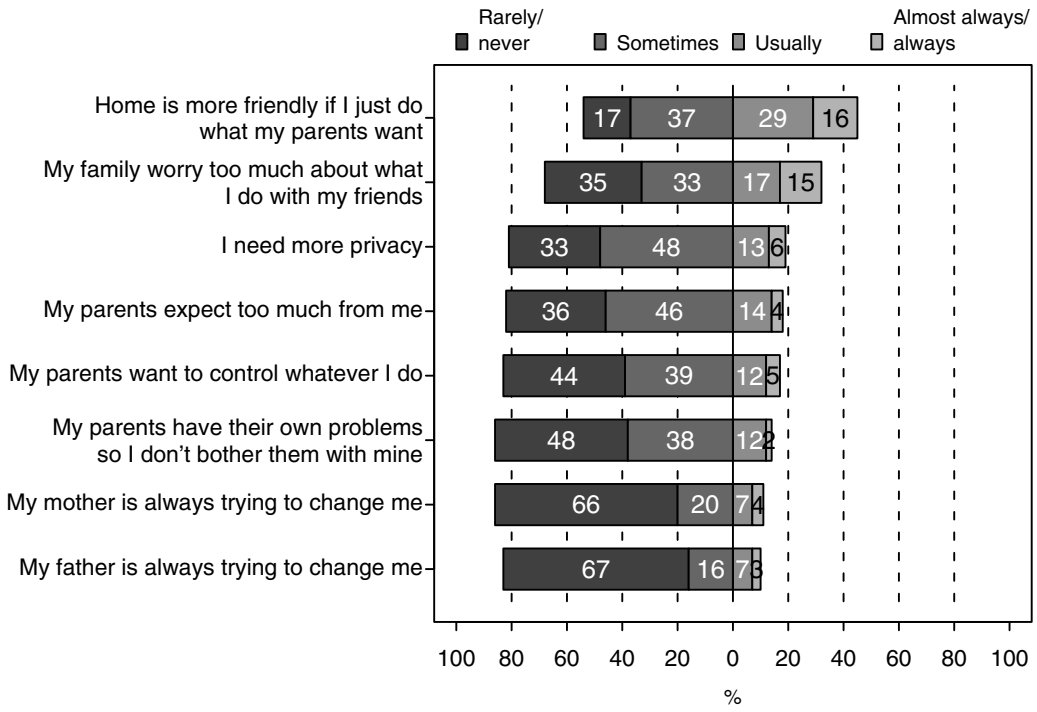
Patterns of correlations for this factor were much the same as for the other two positive family factors. However, the *supportive family* and *inclusive family* factors had stronger negative correlations than did the *family communicates well* factor with the *family pressure* factor (-0.32 and -0.38 respectively cf. –0.15), and with the parent view of *parent-child friction* (-0.28 and -0.26 respectively cf. –0.17), and with *dissatisfaction* (-0.34 and –0.39 cf. –0.23). This could indicate that openness and sharing between child and parent does not necessarily amount to having the same perceptions of independence, responsibility, or trust.

The average score for this factor was the highest for all the factors, 8.4 on a scale of 10. We see similar patterns with social characteristics and individual experiences as we saw with the *inclusive family* factor. Young people whose family incomes were low had lower average scores (7.8). Young people who had had two or more adverse experiences had lower averages (7.7), as did those whose age-12 teacher had seen difficult behaviour (8), and those whose school motivation was low (7.9).

Family pressure

There were eight items in this factor, all new items to the study. Family pressure did not seem marked for most of the sample. Parents were more concerned about behaviour with friends than behaviour overall (perhaps because they know less about this, as much of it happens out of their presence). For just under half the sample, there were signs of differences between parents and their children in what the children would like to do.

Figure 5 ***Family pressure* factor items**



Feelings of family pressure were higher for young people who had non-qualified mothers, for Pacific young people, and for males. The average score was 3.5 on a scale of 10. Higher average scores were found among those in the *standing out* cluster (described on p. 83) (3.7); those who were seen by their age-12 teachers to either be difficult (3.9), or introverted (3.8); those whose family financial situation was difficult (4.0); those

whose parent had mixed interests (4.4), though young people's own leisure interest sets (described on p. 16) did not show any relations; and those who had had two or more adverse experiences (4.9).

This last negative factor has fewer correlations than the two positive family factors with classroom learning and approaches to learning, though it does show less engagement in school. Young people who had higher average scores for experiencing family pressure were also more likely to have lower average scores for their overall achievement at school. However, none of these three family-related factors show associations with school attendance.

Table 23 ***Family pressure* factor correlations with other study factors**

Factor	Correlation level
Dissatisfaction	0.39
Parent-child friction	0.36
Disengaged in learning	0.30
Disrupted learning environment	0.25
Friends with risky behaviour	0.25
Praise & achievement	0.23
Self-confident (parent view)	0.21
Responsible (parent view)	-0.22
Risky behaviour	-0.24
Confident at school	-0.25
Engaged at school	-0.29
Effective (parent view)	-0.30
Overall achievement	-0.31
Supportive family	-0.34
Inclusive family	-0.38

Other aspects of family and home life

Most of the sample thought they were usually or always listened to, and their parents trusted their judgement. Sibling quarrels were much more common than fighting with parents; and open conflict appeared to be avoided in many families.

While the sample was less likely now to think they were almost/always listened to and had things explained to them when they asked, they were no more likely to be told off—or to feel they could do what they liked, than at age 12. And their answers about how often they helped out were much the same as at ages 12 and 10.

Table 24 **Young people's views of other aspects of life at home**

View→ Aspect↓	Almost always/ always %	Usually %	Sometimes %	Rarely/ never %
I get listened to	36-	46	16	1
People can explain things when I ask them	32-	52	15	1
My parents trust my judgement	29	50	19	2
I help out	25	55	18	2
We eat our meals in front of the TV	18	17	36	28
My family checks that I've done my homework	18	34	33	15
Disagreements just get smoothed over	17	39	35	9
I quarrel with my siblings[10]	13	29	44	9
I get told off	6-	17	63	13
I can do what I like	5*	39	46	10
I fight with my parents	4	9	47	40
My parents tell me I don't care about them if I do something that makes them worry	3	8	20	68
I feel lonely	1	3	26	69

- = sizeable decrease from age 12; * = some decrease from age 12

Females were more likely to at least sometimes feel lonely (36 percent cf. 26 percent of males), or to fight with their parents (69 percent cf. 52 percent of males)—though they were just as likely to feel listened to, or able to do what they liked.

Māori and Pacific young people were more likely to always help out (33 percent cf. 24 percent); they were also more likely to usually or always get told off (34 percent cf. 21 percent), quarrel with their siblings (23 percent cf. 11 percent), fight with their parents (23 percent cf. 11 percent), or say their parents told them they didn't care about them if they did something that made their parents worry (44 percent cf. 30 percent)—though they were just as likely to feel they could do what they liked, and to feel listened to.

Young people with university-qualified mothers were somewhat more likely to think people at home could usually or always explain things when they asked them (94 percent, decreasing to 78 percent of those with non-qualified mothers). Getting told off was less likely to happen usually or always for the former (12 percent, increasing to 40 percent of those with non-qualified mothers). They were also more likely to say that their parents rarely or never told them they didn't care about them if they did something that made their parents worry (82 percent, decreasing to 55 percent of those with non-qualified mothers). This picture is consistent with parent reports about whether they negotiate with their child in times of difficulty.

Getting told off usually or always was most likely for young people in low-income families (36 percent cf. 17 percent of those in very high-income families), but they were less likely to say that disagreements were always or often smoothed over (37 percent cf. 57 percent of others). This group was also more likely to say they at least sometimes fought with their parents (76 percent cf. 60 percent overall). Young people in very high-income families were less likely to almost/always eat their meals in front of television (10 percent cf. 20 percent of others).

[10] Five percent did not answer this question, as they had no siblings.

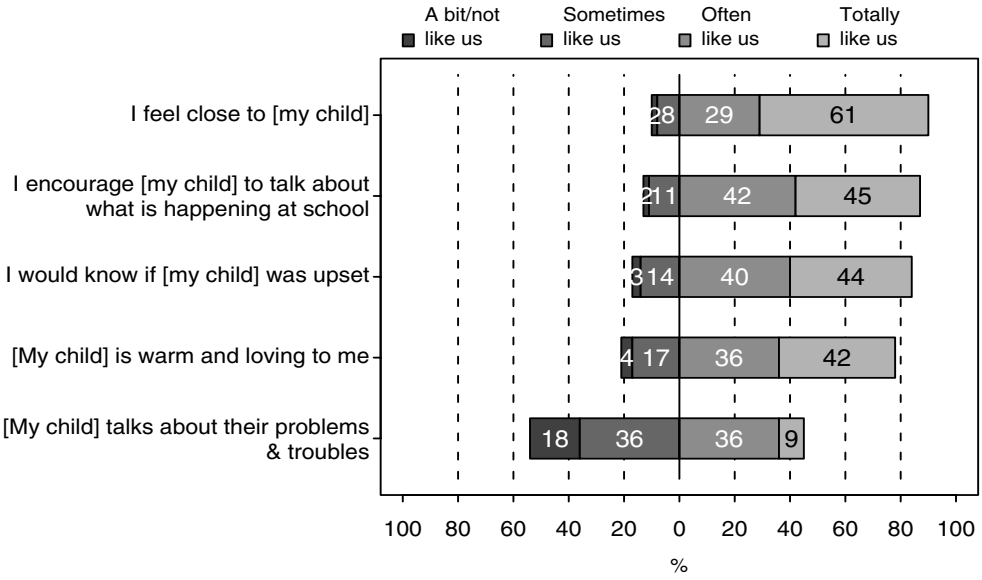
Parent views

Trust was evident in many parents' views of their relations with their 14-year-old, based on good knowledge of the child's activities and how they reacted to things, and parent belief that the child understood the family's ground rules. Most seemed to accept their child as they were, and to see them as having some independence. There seemed to be some distance or friction between parent and child for around a fifth of the sample. We found two factors among the 22 items we asked parents about their relations with their child.

Close parent-child communication factor

This factor had five items, and an average score of 8 on a scale of 10. Closeness was rated more highly than the young people volunteering information about problems or troubles (which may mean either that there were few, or that parents did find out about these through their own initiation).

Figure 6 ***Close parent-child communication* factor items**



There were no associations with the four social characteristics. Lower average scores were found among the clusters with low motivation (7.8), whose leisure activities were in the *electronic games~no strong interests* group (7.7), and whose parent had mixed interests (7.6).

Corrrelations with other factors of 0.2 and above were limited to parents' other views of the relationship, and of their child's attitudes and ways of acting, and to their child's view of family communication, support, and inclusion. The correlation levels are low to moderate, indicating that while there is a fair degree of agreement between parents and their children about the relationship, there are also differences in perspective. To some extent, this is likely to reflect differences in the items for parents and children.

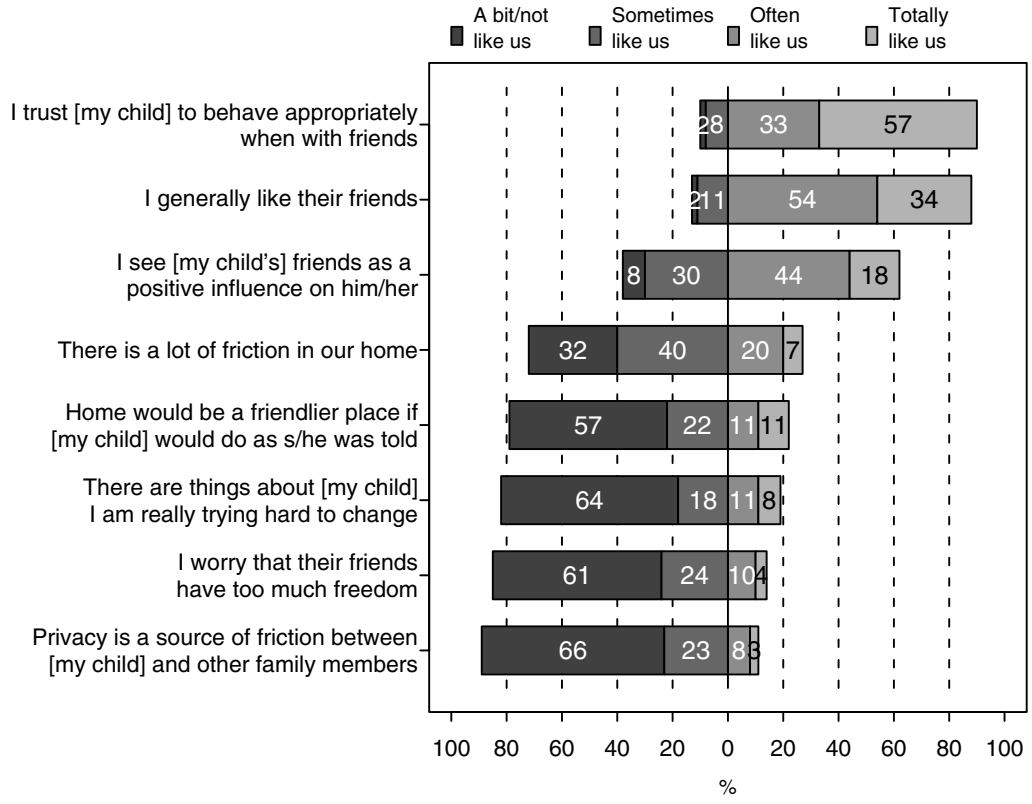
Table 25 ***Close parent-child communication*** **factor correlations with other study factors**

Factor	Correlation level
Self-confident (parent view)	0.47
Effective (parent view)	0.44
Responsible (parent view)	0.34
Family communicates well	0.33
Supportive family	0.31
Inclusive family	0.25
Parent-child friction	-0.31

Parent-child friction factor

Around two-thirds of the parents did not report sources of friction related to their child's growing independence—either their own desire for privacy, or their friends' greater freedom. They could like their child's friends, and trust their child to behave appropriately when with them—but still think that friends were not always a positive influence. Twenty-seven percent reported that there was often or always a lot of friction in the home, and 19 percent would really like to change something about their child.

Figure 7 ***Parent-child friction*** **factor items**



The average score for this factor was 2.6, the lowest of the average scores for the factors. Higher average scores were found for families with a non-qualified mother (3.1), and for Pacific young people (3.8), for low-income families (3.1), and for those whose children were attending decile 1–2 schools (3.2). Higher average scores for young people whose teachers thought their family support for their schoolwork was low (3.2), whose age-12 teacher had seen difficult behaviour (3.0), where the child had had two or more adverse experiences (3.0), where the child's leisure interests were in the *electronic games~no strong interests* cluster (3.0), the child was in the low motivation cluster (2.9), and their values in the *standing out cluster* (2.8). Lower average scores occurred where the family financial situation was comfortable (2.4). This was the only

family-related factor to show associations with school attendance: those with high absenteeism had an average of 3.1 on this factor.

There were more correlations with the *parent-child friction* factor. These correlations are with other parent views, and their child's views of the family relations, but they are also with their child's risk behaviour, and disengagement in learning. The correlations are at the weak to moderate level.

Table 26 ***Parent-child friction* factor correlations with other study factors**

Factor	Correlation level
Family pressure	0.36
Risky behaviour	0.28
Friends with risky behaviour	0.27
Self-confident (parent view)	0.25
Disengaged in learning	0.25
Dissatisfaction	0.22
Internal markers of achievement	-0.20
Confident at school	-0.23
Family communicates well	-0.24
Inclusive family	-0.26
Supportive family	-0.28
Engaged at school	-0.29
Overall achievement	-0.30
Internal markers of achievement	-0.32
Responsible (parent view)	-0.39
Effective behaviour (parent view)	-0.52

Correlations between young people and parents' views

How well do these views of family life fit together—or, put another way, can young people and parents have different understandings (and approaches) of what happens at home? Where a young person sees family pressure, they are reasonably unlikely to sense that communication is good, or that they are included, and to a lesser extent, that they are supported. Parents' views are also reasonably consistent with their children's—but they are not always matched.

Table 27 **Correlations between views of family relationships**

View↓	Young person Inclusive family	Young person Supportive family	Young person Family Pressure	Parent Close parent-child commun-ication	Parent Parent-child friction
Family communicates well	0.59	0.65	-0.15	0.33	-0.17
Inclusive family		0.69	-0.38	0.25	-0.26
Supportive family			-0.34		-0.28
Close parent-child communication		0.31	-0.13		-0.31
Family pressure					0.36

Other parent views of their relations with their age-14 child

Most parents expected their child to do well at school. Less than a third thought their ground rules were always clear and adhered to. They were more likely to discuss the amount of freedom their child could have with them, than think they had the right to control how their child spent their free time.

Table 28 **Parent views of their relations with their 14-year-old child**

View→	Totally like us	Often like us	Sometimes like us	A bit like us/ not like us
Aspect↓	%	%	%	%
I expect child to do well at school	41	43	10	4
We mostly eat together as a family	40	36	12	11
Ground rules are clear & we stick to them	28	48	20	4
I discuss amount of freedom with child	25	36	21	17
I can usually explain things that child asks about	20	58	20	2
I have right to control how child spends free time	15	24	38	24
I expect child to do well at sport	14	30	25	30
As a family, we do interesting things together	8	27	54	12
Everyone is too busy to bother about each other's problems	0	3	16	82

Parents of Māori and Pacific young people were more likely than parents of Pākehā or Asian young people to agree with the statement that *Home would be a friendlier place if my child would do as told* (36 percent cf. 18 percent), and to agree that the statement *We're all too busy to bother about the problems of others* was sometimes or often true of them (30 percent cf. 17 percent). They were less likely to think that the ground rules were clear and the family stuck with them (66 percent cf. 76 percent).

The very high-income families were most likely to do interesting things together (46 percent, decreasing to 24 percent of low-income families). Parents in low-income families were less likely to think that the ground rules were clear and adhered to (66 percent cf. 77 percent of those with higher incomes).

There was less confidence that parents could usually explain things their child asked about where mothers were non-qualified (58 percent, increasing to 89 percent of families where the mother was university-qualified). Fifty-one percent thought that they had a right to control their child's spare time (cf. 32 percent of those in families where the mother was university-qualified), and 62 percent that the ground rules were clear and adhered to (cf. 77 percent in families where the mother had a qualification).

FAMILY INCOME

Family income levels matter for the development of competency. Young adults' competency levels at age 14 reflect both their family income level when they were near age-5, and just about to start school, and their current family income levels.

Our sample comes from the Wellington region, which has a higher average family income than New Zealand as a whole. The next table shows both the current and earlier family incomes for the study children. These are in the dollar amounts for each period, rather than translated into current dollar values.

Of particular note is the gradual decline in the proportion of families whose incomes are less than $30,000, and at the other end of the income spectrum, an increase in those whose incomes are over $80,000. Twenty-six percent of the families now had incomes of over $100,000 a year. The shift upwards in family income for most—but not all—of the study sample families reflects the increase in the proportion of mothers taking up full-time employment over the life of the study, and salary increases, whether as a result of inflation, promotion, or increments related to satisfactory service.

Table 29 **Family incomes in the study ages 5 to 14**

	up to $30,000	$30–60,000	$60–80,000	$80,000	*n*
Age 5	148	232	75	76	531
('93–'94)	28%	44%	14%	14%	
Age 6	72	119	48	48	287
('94–'95)	25%	41%	17%	17%	
Age 8	115	204	74	116	509
('96–'97)	23%	40%	15%	23%	
Age 10	94	186	86	116	482
('98–'99)	20%	39%	18%	24%	
Age 12	70	152	96	162	480
('00–'01)	15%	32%	20%	34%	
Age 14	58	123	92	181	454
('02–'03)	13%	27%	20%	40%	

Improvements in family income over the 9 years seem to make little difference to competency levels for mathematics and reading comprehension (though those whose family income was initially low and then became very high had a somewhat higher proportion of students scoring at the median or above for mathematics at age 14 than their peers whose family income stayed low, or did not increase so much).

After taking maternal qualification into account, the scores of those whose family income was low as they started school (reflecting the resources available during their preschool years) but then improved were much the same as the scores of those whose family income remained low over the 9 years. These scores were around 25 percentage points lower than those whose family income had been high throughout.

Financial wellbeing

Just under half the parents said they had no difficulty paying all the family bills each month, and 74 percent had money left at the end of the month after paying their bills. Other families had difficulty.

Table 30 **Family ability to pay all bills each month**

Difficulty	Age 14 (*n* = 476) %
No difficulty	49
A little difficulty	33
Difficulty	11
Great deal of difficulty	6

Table 31 **Family money left over after paying bills each month**

Amount left over	Age 14 (*n* = 476) %
Plenty	13
Some	62
None	13
Not enough to make ends meet	7
In debt	4
Don't know	1

Fifty-six percent spent a quarter or less of their after-tax income on housing, much the same as the 59 percent 2 years previously. This compares with 40 percent when the children were aged 10, and 37 percent when they were aged 6. Twenty percent were paying around a third of their income, 10 percent around a half, and 5 percent (somewhat up from 3 percent at age 12) more than half. Eight percent did not know.

The higher the income, the lower the proportion spent on housing. Sixty-nine percent of the very high-income families were paying a quarter or less of their income on housing, declining to 40 percent of low-income families. Twenty-nine percent of the low-income families were spending half or more of their income on housing, declining to 7 percent of the very high-income families.

Income sources

Just under half the families gained income from at least two sources. Wages or salary continued to be the prime source of family income (85 percent). Thirty-one percent of families gained income through self-employment (up slightly from 25 percent at age 12). Twenty-two percent gained income from rentals, interest, or a family trust—twice the 9 percent at age 12. This may reflect the increased investment in housing that occurred in this period in New Zealand. Twelve percent received some form of welfare benefit, much the same as at age 12 (which was lower than the 17 percent at age 10). Seven percent received the Domestic Purposes Benefit (DPB). Four percent were reliant on an invalid/disability benefit, and 1 percent on an unemployment benefit. One percent received ACC compensation.

INFORMAL SUPPORT FOR PARENTS

Most parents continued to be able to easily call on help if they needed it. Friends are the main source of this help—but also the group from whom parents cannot get this help (perhaps because they do not live locally). There was a slight decrease in the proportion who felt they could easily call on friends or neighbours from age 12.

Table 32 **Informal support for parents**

Frequency→ Source of support↓	Have support %	Support varies %	No support %
Friends	73	7	20
Family	60	36	4
Neighbours	48	44	7

Parents of Māori and Pacific young people were more likely to be able to call on family (73 percent cf. 57 percent of parents of Pākehā/European and Asian young people). Families with a university-qualified mother were less likely to be able to call on family (43 percent, increasing to 71 percent of those with non-qualified mothers).

PARENTAL EMPLOYMENT

Eighty-five percent of the parents we interviewed were in regular employment: 48 percent full-time, and 28 percent part-time. Eight percent had casual or short-term work. One percent was on parental leave.

The next table shows parental employment patterns in relation to gender.[11] The majority of men are in full-time employment; women have more variable patterns of employment. There has been a gradual rise in the proportion of female parents in full-time employment, from 19 percent when the sample had yet to start school, to 32 percent when they were age 10, 41 percent at age 12, and now 46 percent when the sample was aged 14.

Table 33 **Adult employment by gender**

Employment↓	Women (*n* = 456) %	Men (*n* = 425) %
Full-time	46	89
Regular part-time	30	3
Casual/short-term	8	3
No employment	16	5
On leave from employment	1	

Sixty-eight percent of the men and 38 percent of the women who were employed had work that involved shift work, irregular or long hours, weekend work, or travel. Eight percent of the women and 3 percent of the men held more than one job (usually combining two part-time jobs).

Men employed full-time had longer hours than women: 92 percent worked more than 40 hours a week cf. 67 percent of the women. In both cases, the 40-hour week appears to exist more on paper than in reality.

[11] The parents interviewed were asked to provide employment-related information for their partners as well as themselves.

Table 34 **Average adult work hours by employment status**

Work hours↓	Women (*n* = 386) %	Men (*n* = 380) %
Full-time employment	41.7	47
Part-time	22.1	22.2*
Casual/short-term work	34	21.3^

* 11 males; ^ 11 males

Fifty-six percent of the employed parents we interviewed would like to change something about their job. Reducing hours and increasing pay were their main desires, followed by having more flexible time, changing the kind of work they did, or increasing their hours. A few would like to stop working.

Seventy percent of the parents interviewed who were not in paid employment would like to be doing paid work. Retraining needs or the lack of available work were the main barriers to being in paid work, followed by the age of their child or other children, their own poor health, and the need for childcare or afterschool care. Poor salary levels and the need for domestic help were also mentioned.

At age 12, those whose mothers were in full-time employment scored on average 6 percentage points lower than those whose mothers worked part-time on the PAT Reading Comprehension test, and this difference remained after taking family income and maternal qualification into account. But at age 14, maternal employment was unrelated to any of the competencies. We also found no significant associations between patterns of maternal employment over the 6 years between age 8 and age 14.

PARENTAL OCCUPATIONS

The next table shows the range of occupations undertaken by the adults in the sample families. Proportions given are for those in employment. Males were much more likely than females to be in administrative or managerial or trade work; females to be working as professionals (including teachers and nurses), technicians and associated professionals, clerks, and in sales and service occupations.

Table 35 **Adult occupations when study sample aged 14**

Occupational category ↓	Female (*n* = 373) %	Male (*n* = 380) %
Legislators, administrators, & managers	9	24
Professionals	33	26
Technicians & associate professionals	19	12
Clerks	21	2
Service & sales	15	4
Agriculture & fishery	2	3
Trades	<1	18
Plant & machine operators & assemblers	<1	7
Elementary occupations	5	3

Women in professional or management occupations were most likely to be working full-time (70 percent); those working in agriculture, trades, elementary occupations, and with machines, most likely to be working casually (32 percent).

FAMILY CHANGES AND MOBILITY

As we have seen, family income levels improved for many of the sample over the past 7 years. Nonetheless, the families of around a quarter of the sample had been reliant on welfare receipt at some stage. Most of the sample experienced stability in their family structures. Maternal employment patterns were more varied, but most of the sample's mothers were employed at least part-time.

Table 36 **Patterns of family change and stability over ages 8–14 by family characteristics**

	(*n* = 474)
Family income	
Mostly low (< $30,000)	10
Mostly between $30–100,000	50
Increased over $100,000	25
Mixed	5
Missing data	10
Welfare receipt	
None	76
At 1–2 phases of study	16
At 3 phases of study	4
At 4 phases of study	3
Family stability	
2-parent (birth)	69
Sole-parent (birth)	8
Mostly 2-parent (one birth)	4
Mostly 2-parent (mixed)	3
Mixed types over study phases	6
Missing data	8
Maternal employment	
Mostly full-time	29
Mostly part-time	26
Mixed full & part-time	26
Mostly not employed	10
Missing data	10

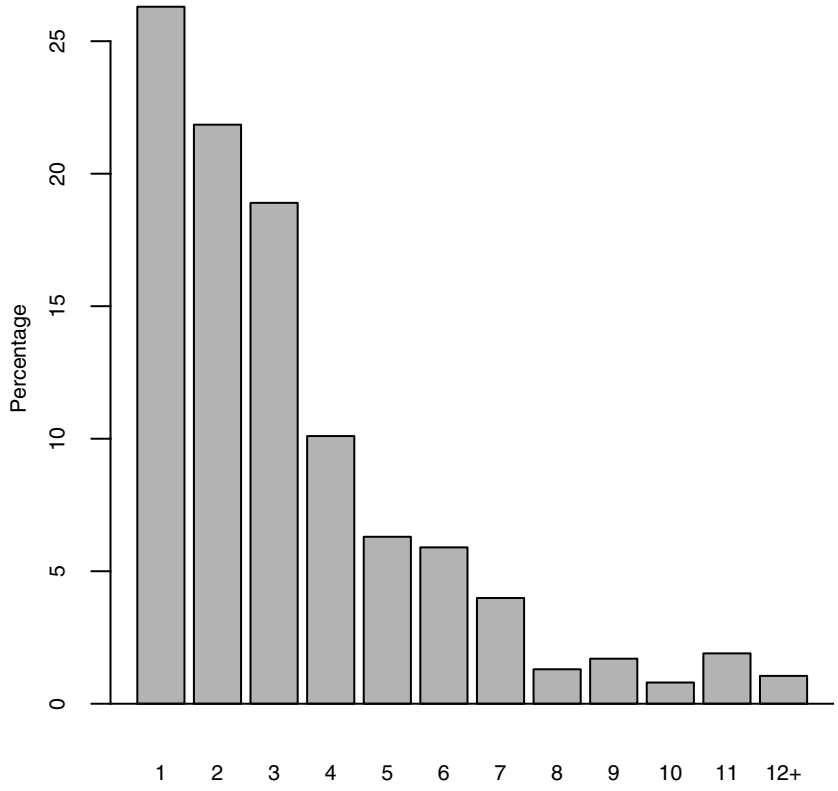
Young people who had always lived with both biological parents had, after taking into account family resources, higher average scores on the attitudinal composite than those in blended families or families that included other adults—but not higher than those in stable one-parent families. There were no associations with the cognitive competencies.

Welfare receipt *per se* has not shown associations in this sample with competency levels, once family income or maternal qualification are taken into account. This pattern continued at age 14. An analysis of welfare receipt since age 8 also showed a similar pattern. Welfare receipt does overlap markedly with low income; and also with low levels of maternal education: 41 percent of families where the mother was non-qualified had received a welfare benefit at some stage over the past 6 years cf. 22 percent of those where the mother was trades- or tertiary-qualified, and 11 percent of those where the mother was university-qualified.

The average number of house shifts experienced by the sample by the time they were 14 was three (s.d. 2.5).

Families do move homes more often than children change school (and perhaps are careful to preserve school continuity when they can). Seventy-four percent of the sample had moved house more than once over their 14 years. One young person had moved 15 times: but this was an exception.

Figure 8 **Number of houses lived in by the study students since birth**



The lower the income, the more likely it was that families had shifted. Low-income families averaged 3.3 shifts (s.d. 3.4) cf. an average of 2.1 shifts (s.d. 2.1) for very high-income families. This pattern was also evident in relation to maternal qualification. Families with non-qualified mothers had the highest average number of shifts (3, s.d. 2.6), and those with university-qualified mothers, the lowest (1.8, s.d. 2.2). These differences may have a bearing on the ability of young people to put down roots and feel confident. Ethnicity was unrelated to the number of house shifts experienced by this sample.

At age 12, we found differences in average competency scores that largely became diluted or non-significant once we took family resources into account, indicating that they could have a protective role for those who moved often. Some differences did remain, however. Those whose family had moved house five or more times had lower average scores for mathematics, and compared with those who had stayed put or moved once only, lower average scores for perseverance and social skills with peers. At age 14, we found no associations between the number of house moves, and competency scores, even before taking family resources into account. This might suggest that stability of residence matters more at younger ages. At age 14, when young adults are becoming more independent, and their world enlarging, other things are also changing.

SUMMARY

Parents were sharing fewer activities with their 14-year-olds, and the proportions of mothers in employment continued to show an increase. But around two-thirds of the sample came home from school to a parent.

Most parental expectations at this age were around schoolwork, housework, and language, and young people were largely aware of these. They were less aware that their parents might have expectations or rules around media use, particularly video games. Reflecting the young people's growing independence (but probably also causing some tension at times), there were more parental expectations than there had been when the sample was 12. Only 3 percent of the sample had never broken or ignored a parental rule. What parents see as discussion when this happens sounds to some young people like being told off.

Disagreements between parents and their 14-year-olds occurred almost universally. Growing independence saw more use of negotiation when this happened—but also more parents getting cross in order to get their way.

While their independence mattered more to the young people than it had 2 years earlier, they still largely saw their families as supportive and inclusive, though not as much as previously, and, to a lesser extent, communicating well. Family pressure was not a common experience. This is consistent with the general picture from parents: that they largely trusted their children as they started to engage in fewer shared activities. Parents were a little more positive about the quality of parent-child communication at this age, though some distance or friction was evident for around a fifth of the sample. Their child's friends were sometimes a source of unease for parents, though most liked their child's friends. The unease appears to be related to differences in boundaries or approaches that parents like to feel they have established for their own child.

While there were some differences between parental concerns for sons and daughters, and some ethnic differences in how parental authority was exercised where young people crossed boundaries, the social characteristics most associated with differences in the kinds of boundaries parents had (or had in mind) and their exercise of their responsibility for their mid-adolescents were family income and maternal qualification. But young people's views of positive relations with their family (their sense of being supported and included, and good communication), and parent views of good communication were largely not reflective of social characteristics. Feelings of family pressure were stronger among those who had non-qualified mothers, or young people who were Pacific, or male. Parent reports of friction in the home were also stronger among those who had non-qualified mothers, were in low-income homes, or who were Pacific.

These feelings about family interactions and relations are linked to ways that young people spend their time, and the two other major dimensions of their lives, friends and school. Consistently, we found more friction and pressure for those who were in the *electronic games~no strong interests* leisure group, and those in the *standing out* values group. Those who felt positive about their family also tended not to have friends who had risky behaviour, or to show risky behaviour themselves. They were more engaged in learning. While teachers' scores for young people's overall achievement were not related to the positive aspects of family interactions, those who experienced family pressure did have lower overall achievement scores.

4. Relations with peers

In this chapter, we look at patterns and experiences of friendship, before looking at how the sample would now respond to being given a hard time in the school grounds, and experiences of bullying.

FRIENDSHIPS

A description of changes to friendships over the course of the transition to secondary school is given in Chapter 6 of the separate report *Completely Different or a Bigger Version?* (Wylie, Hodgen, & Ferral, 2006). Here we summarise some of the main trends.

- Most of the sample experienced changes in their friends over the transition to secondary school—friends were lost, but new friends were gained. Loss of friends was more likely for those who went to single-sex schools, or moved from full primary schools.
- Friendships and independence from parents were becoming more important, particularly for students from low-income homes. Close friends were more likely to include both males and females, particularly for students at coeducational schools. All but a few students had some close friends.
- Almost all the students said their school friends were good friends, and only a few wished they had different friends at their school. However, most students also have friends who do not go to their school, more so for students at single-sex schools.
- Going out with friends to entertainment, or going out with them with no fixed agenda had increased. Entertainment carries costs; so it was not surprising that this was less likely to occur for students from low-income homes. Support or trust was a more important aspect of friendships. There was an increase in gossip or cattiness, particularly for girls. There were signs that students from advantaged homes may expect more of their friendships—valuing someone they could talk to, sharing interests, and making more mention of difficulties with friends being selfish or uncaring. Girls' friendships had changed more than boys', particularly in making new friends.

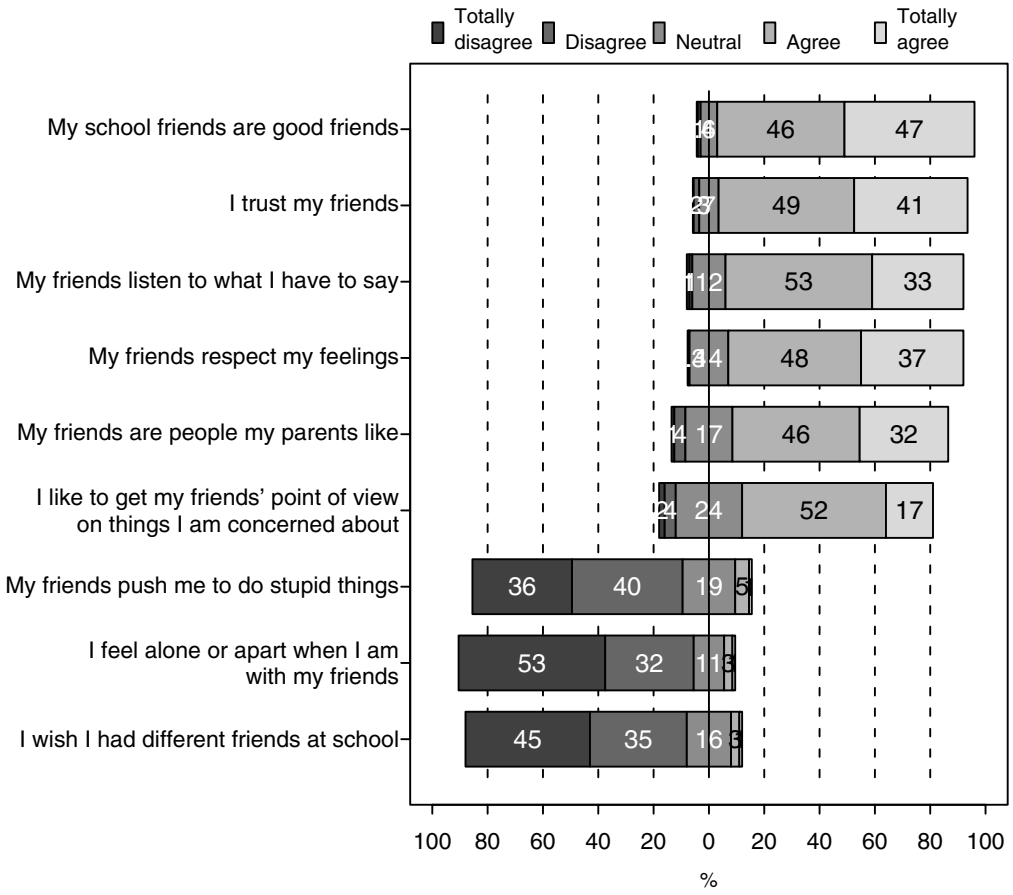
PATTERNS OF FRIENDSHIPS

We also asked the sample to state their agreement with a set of 22 statements about friendships, and included some questions about friendships in the set of statements we gave them about their experiences over the past year. Two factors (groups of items where similar responses were likely from the one individual) were found in the statements about friendship: one positive, and one negative.

Solid friendships factor

Agreement with the five positive items in this factor was high: over 90 percent thought their friends respected their feelings, and trusted their friends, and 70 percent or more agreed with the three other positive items. Around 5 percent or fewer appeared to have negative friendships.

Figure 9 ***Solid friendships* factor items**



Average scores were high for this factor: 8.13. Gender was the only social characteristic that showed differences here. Females had a higher average on the factor than males (8.4 cf. 7.9). Average scores were higher for those with high levels of motivation toward school (8.4), who had not been involved in bullying ages 10–14, and lower for those in the *electronic games~no strong interests* group, those in the *standing out* values group, those who mostly did not complete their homework ages 10–14, and did not enjoy reading ages 8–14. There was no association with current involvement in bullying.

There are weak to moderate positive associations between scores on the *solid friendships* factor, and family strength. Higher scores on this factor were associated with lower scores for negative aspects of both friendships, and learning.

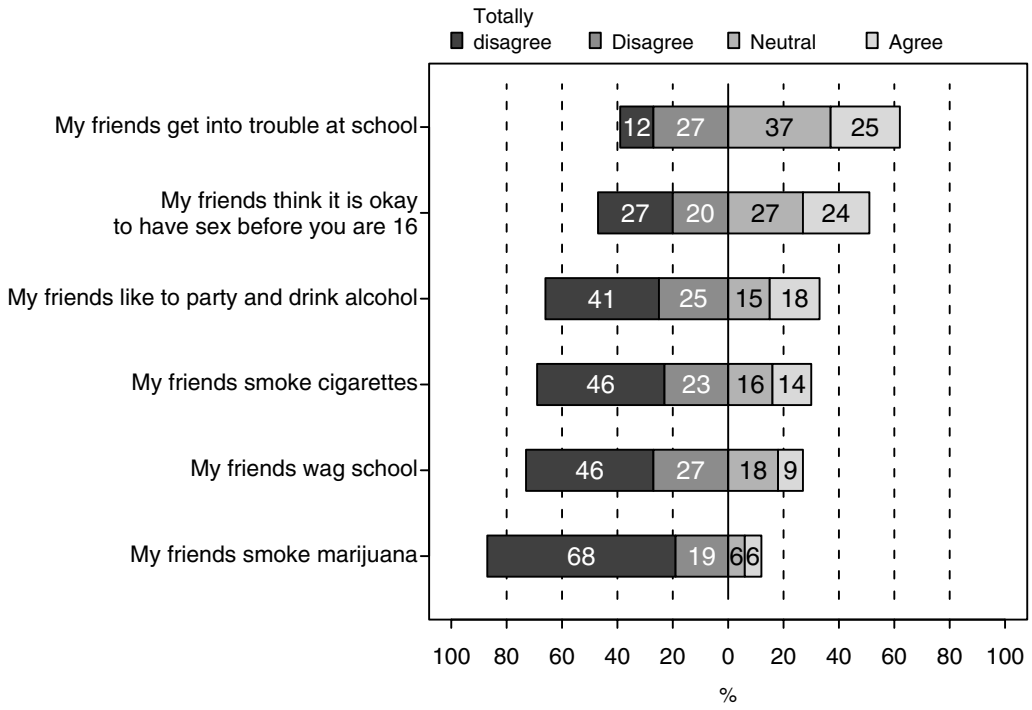
Table 37 **Correlations for *solid friendships* factor and other study factors**

Other factors↓	Correlations of 0.3 or more
Confident at school	0.43
Inclusive family	0.41
Family communicates well	0.34
Supportive family	0.34
Friends with risky behaviour	-0.33
Disengaged in learning	-0.34

Friends with risky behaviour factor

The proportion who agreed or totally agreed with the items that made up the *friends with risky behaviour* factor varied from 6 percent ('my friends smoke marijuana') to 25 percent ('my friends get into trouble at school').

Figure 10 ***Friends with risky behaviour* factor items**



The average score for this factor was 3.6. Family income was the only social characteristic associated with this factor. The highest average score was for those from low-income families (4.3). The average for those from medium-income families was 3.7; for those from high-income families 3.3, and for those from very high-income families, 3.4.

Higher average scores were evident among those who were had experienced two adverse events in the past year (4.6), had high absenteeism rates (4.5), were in the *electronic games~no strong interests* cluster (4.0), in the *standing out* values cluster (4.0), showed difficult classroom behaviour at age 10 (4.2), and had been heavy watchers of TV (4.1). Lower average scores were evident among those who had high school motivation levels (3.1), mostly completed their homework (3.4), had families in a comfortable financial position (3.4), had no involvement in bullying (3.1), were currently not involved in bullying (3.4), or who were victims of bullying (3.6), and who had always enjoyed reading (3.1).

Not surprisingly, there was a moderately strong correlation with the factor *risky behaviour*: those with high scores for having friends with risky behaviour were also more likely (but not always) to show risky behaviour themselves. They were also more likely—but not to the same extent—to be disengaged in school and learning. Their friendships were less likely to be supportive, as was their family support. They were more likely to have had unsatisfactory experiences over the past year. The correlations with factors that were 0.3 or above are given in Table 38.

Table 38 **Correlations between *friends with risky behaviour* and other study factors**

Other factors↓	Correlations of 0.3 or more
Risky behaviour	0.62
Disengaged in learning	0.45
Negative about science	0.31
Dissatisfaction	0.30
Inclusive family	-0.30
Confident at school	-0.32
Absorbed in learning	-0.33
Solid friendships	-0.33
Supportive family	-0.34
Engaged at school	-0.45

Other aspects of friendship

There were seven items that did not fall into either of the two factors found, or form another one: an individual response to one of these did not show marked similarities with that individual's response to another of these items. Friendship went beyond sharing the present for around half: friends pushed them to succeed and do interesting things they would not do by themselves, or talked about hopes and plans for the future. Around half also seemed to be able to share their own problems with their friends. Friends seemed to have similar levels of freedom (a view that may not be shared by parents).

Table 39 **Other friendship items**

View→ Nature of friendship↓	Totally agree	Agree	Neutral	Disagree	Totally disagree
My friends push me to succeed & do interesting things I would not do by myself	13	41	28	13	5
My friends all go to this school	12	19	19	35	15
My friends talk about hopes & plans for the future	12	37	33	14	3
My friends enjoy learning new things at school	9	33	42	13	4
My friends have more freedom than me	5	13	49	25	7
My friends & I do our homework together	3	15	25	35	23
My friends have their own problems, so I do not bother them with mine	3	12	33	35	16

Males were more likely to disagree that their friends talked about hopes and plans for the future (22 percent cf. 13 percent of females). Females were more likely to do their homework together (24 percent cf. 12 percent of males), and less likely to feel that they could not share problems with friends because the friends had their own problems (10 percent cf. 20 percent of males).

Young people with non-qualified mothers were most likely to think their friends had their own problems, so they would not bother them with theirs (26 percent, decreasing to 8 percent of those with university-qualified mothers). They and those with trades-qualified mothers were most likely to think that their friends had more freedom than they did (26 percent and 22 percent cf. 11 and 13 percent respectively of those with tertiary- or university-qualified mothers).

There were no associations between these aspects of friendship and family income or ethnicity.

What do you do if you're given a hard time by another student?

As in earlier years, we asked the sample what they would say or do if someone gave them a hard time in the school grounds. This shows some marked hardening in student responses, with much more aggression than previously, less assertion, more passivity, and more seeking help from friends as a group, or a gang.

Table 40 **First strategy when encountering difficulties in the school grounds ages 10, 12, and 14**

Strategy↓	**Initial response age 10 (*n* = 507) %**	**Initial response age 12 (*n* = 496) %**	**Initial response age 14 (*n* = 475) %**
Go somewhere else/do something else	21	26	25
Ask teacher for help	21	29	22
Assertive response	46	29	20
Aggressive response (verbal or physical)	5	10	20
Passive response/do not know	3	7	17
Tell parents	0	5	12
Seek help from group of friends/gang	1	3	12
Seek help from another student	2	3	5
Depends	-	-	5
Seek help from guidance counsellor/social worker	-	-	4
Seek help from peer mediator	0	1	0.4

* Some students gave two responses, so the percentages add to more than 100.

The pattern of responses that would be tried if someone continued to give the student a hard time in the school grounds showed the trend from earlier years of going to the teacher or turning away to do or go somewhere else. But the use of aggression or groups of friends was still higher at age 14 in the second response.

Table 41 **Second strategy when encountering difficulties in the school grounds ages 10, 12, and 14**

Strategy↓	Second response age 10 (*n* = 507) %	Second response age 12 (*n* = 496) %	Second response Age 14 (*n* = 475) %
Ask teacher to help	55	48	37
Go somewhere else/do something else	18	16	16
Assertive response	14	12	16
Aggressive response (verbal or physical)	4	9	18
Passive/do not know	3	5	8
Tell parents	2	17	14
Seek help from group of friends/gang	2	4	16
Seek help from another student	1	3	5
Seek help from peer mediator	1	1	1
Depends	-	-	3
Seek help from guidance counsellor/social worker	-	-	5

* Some students gave two responses, so the percentages add to more than 100.

Females were more likely to say they would respond assertively (24 percent cf. 16 percent of males), or seek help from friends or a gang (17 percent cf. 7 percent of males). They were also somewhat more likely to tell their parents, or go to a guidance counsellor or social worker. Males were more likely to be aggressive (24 percent cf. 16 percent of females). These gender differences were also evident in what students would do if someone continued to give them a hard time.

Māori and Pacific students were more likely to say they would respond aggressively (32 percent cf. 19 percent of Pākehā/European or Asian students for the first time, and much the same pattern the second time).

Seeking help from a group of friends or gang was less likely among those from low- or medium-income families than among those from high- or very high-income families (4 percent cf. 16 percent). Telling parents was least likely among those from low-income families (4 percent, increasing to 15 percent of those from very high-income families). If they were still given a hard time, the low-income group was also less likely to go to a teacher and with the medium-income group, more likely to give an aggressive response (24 percent cf. 12 percent of those from high and very high-income families). Seeking help from friends was now just as likely for all income groups. The low-income group remained less likely to mention their parents. Those with university-qualified mothers were least likely to mention a passive response (9 percent), and most likely to seek help from friends or a gang (20 percent) the first time, but their second responses were much the same as others. Those with non-qualified mothers were least likely to go somewhere else or do something else (17 percent) on both occasions.

BULLYING

Despite the rise in aggressive responses to our hypothetical difficulty in the school grounds, aggressive behaviour did not seem to have become greater, if we take bullying over the last couple of months as an indicator.

- Experience of being a victim of bullying had declined: from 24 percent at ages 12 and 10, to 18 percent at age 14. Almost all of this happened at school, with 2 percent mentioning in a public place, and 1 percent at home.
- Most bullying continued to be verbal (including teasing): 15 percent. Physical bullying had been experienced by 6 percent, and 1 percent also mentioned the use of weapons. Three percent mentioned being left out or rejected, 2 percent each that they had been ganged up on or had their possessions taken. This pattern is similar to that at age 12.
- As in previous years, the main response to bullying was to ignore it (9 percent). Fighting back was mentioned by 4 percent. An assertive response was given by 4 percent. Eight percent told either a teacher or parent. One percent ran away or hid, and two students made a deal with other students.
- Fourteen percent of the sample had themselves bullied someone over the last couple of months—much the same proportion as at age 12. Again, most of this was verbal (12 percent). Two percent had physically bullied another person (down from 4 percent at age 12). One used weapons. Two percent said they had left someone out of something, or ganged up on them.
- At age 14, 13 percent of the sample had experienced some recent bullying—without bullying themselves. Five percent had been bullied, and bullied themselves. Nine percent mentioned bullying others, without being bullied themselves. Compared to age 12, there were fewer who had only been bullied.
- The parents of just under half those who said they had been bullied were unaware of it. (When we asked them the same question, they said their child had not been bullied.) Two-thirds of those whose children said they had bullied someone else were unaware of that.

While females were just as likely as males to be bullied, females were more likely to report verbal bullying, and being ganged up on or left out; and males, physical bullying. Females were more likely to ignore the bullying, or tell their parents. Males were more likely to report that they had physically bullied someone else; they were just as likely as females to report that they had verbally bullied someone. There were no ethnic differences. Family income was unrelated to whether or not a young person experienced bullying, but those from very high-income homes were less likely to mention physical bullying (1 percent). Physical bullying was least likely to be experienced by those with university-qualified mothers (1 percent).

On the whole, those who were currently bullying, or were both victims and bullies, had lower average scores on the factors relating to positive engagement in school and learning, and those who were not experiencing any bullying had the highest average scores. The same patterns were evident in looking at some factors relating to family interactions and friendships, risky behaviour, and dissatisfaction with life, although there were no differences when it came to experiences of family inclusion and support, or solid friendships.

Bullies were most likely to be in the *electronic games~no strong interests* leisure group, and least likely to be in the *all-rounders* group. They were less likely to have enjoyed reading. They did not differ from others in their values. They were more likely to have been seen as showing difficult classroom behaviour at age 12. As with those who were bully victims, homework completion was more likely to be variable.

Bullying over time

When we looked at experience of bullying over time, we could categorise the young people into three groups. Less than a third had had absolutely no experience of bullying at the three points where we talked with them over the past 5 years (at ages 10, 12, and 14). This does not mean they have no experience of bullying at all over this time, since our data are limited to the past few months before each occasion when they were interviewed. Using this data is likely to give us a conservative take on the incidence of bullying:

- 28 percent had had no involvement in bullying;
- 36 percent had been involved in bullying in only one of the three phases; and
- 36 percent had been involved in bullying in at least two of the three times.

Those from very high-income families were less likely to have been involved in bullying on at least two occasions (28 percent). This was the only association with social characteristics. Not surprisingly, there was also an association with a school characteristic: decile. Half of those in decile 1–2 schools had experience of bullying on at least two of the research occasions.

We divided the sample into those who had had some experience of bullying (whether victim or bully or both) around the times we talked to them over the previous 4 years, and those who had had none at these times. We found that those who did not report any bullying had higher competency scores for both the cognitive and attitudinal competencies. They were more likely to have solid friendships, and less likely to have friends with risky behaviour. They engaged in less risky behaviour themselves. Their parents were more likely to see them as being more effective and responsible. They had better relations with their family: they were more likely to feel included, and to have a supportive family, with less parent-child friction, or family pressure. They were more engaged and confident at school.

They were more likely to say they would be aggressive if given a hard time in the school grounds (26 percent cf. 12 percent of those with no bullying experience). If their first response did not resolve the situation, they were more likely to continue aggression; in their second response they were less likely to seek a teacher's help (12 percent cf. 19 percent of those with no bullying experience), to seek help from friends or a gang (12 percent cf. 19 percent also), or to tell their parents (8 percent cf. 18 percent). We found a similar pattern of first response among those who reported recent bullying at age 14: a much higher aggressive response (35 percent cf. 18 percent of those not reporting recent bullying), as well as a lower tendency to ask a teacher for help (9 percent cf. 24 percent of those not reporting recent bullying).

HOW DO EARLIER COMPETENCY LEVELS AND EXPERIENCES RELATE TO CURRENT RELATIONS WITH PEERS?

Here we report our findings in relation to research question 6: *How are earlier competency levels in social skills, parental and teacher reports of attitude to school and relevant school behaviour, from age 6 on, related to relations with peers at age 14 both in and out of school, experience of bullying, and risk behaviours?* We undertook regression models for two of the factors focused on relations with peers, and discriminant analysis with current experiences of bullying. These models included previous attitudinal competency scores (from age 8), age-12 teacher views of classroom behaviour, and aspects of the children's past (including the number of schools attended and house shifts).

These aspects of the past did not account for much of the variability in the sample's present experience of *solid friendships* (6 percent). The dominant variables were (non) enjoyment of reading, and involvement in bullying. Social skills with teachers at age 12 was also associated.

Ten percent of the variability in scores for *friends with risky behaviour* was accounted for. Non-enjoyment of reading, and history of bullying appeared here also. Two other dominant aspects appeared, with higher scores for those whose parents had three or more concerns about them at age 14 and those who were in the *standing out* values cluster.

Models using classification trees or linear discriminant analysis were unable to predict current involvement in bullying.

SUMMARY

Friendships have grown between the ages of 12 and 14: they occupy more time, and carry more weight in the sample's lives. Most of the sample had solid friendships. Solid friendships were more likely where young people also had supportive and inclusive families, and were less likely where they had friends with risky behaviour. But they did not necessarily mean that young people were less engaged in risky behaviour themselves.

Risky behaviour among friends was not common. This kind of behaviour was most likely to be getting into trouble at school, though, at this age, not necessarily evading school, or thinking positively about having sex before the legal age of 16. Having friends who show risky behaviour is also associated with risky behaviour for a young adult. The patterns here point to crystallisation of habits and behaviours that are not school-focused or learning-supportive: but nor do they point to positive family experiences, positive peer relations, or satisfaction with life. The interests are largely passive or consumer, not extending. Young people from low-income families were most vulnerable to what seems to be a negative spiral that probably began some time back, but which can crystallise as young people exercise independence.

Friendship went beyond sharing the present for around half the sample: friends pushed them to succeed and do interesting things they would not do by themselves, or talked about hopes and plans for the future. Around half also seemed to be able to share their own problems with their friends.

Perhaps the sharpening of independence and a sense of individual identity lies behind the jump in young people thinking of aggressive responses to our hypothetical situation of being given a hard time in school grounds. The drop in assertive responses, however, does not fit this interpretation so easily. The rise in those who would turn to their friends or a gang is consistent with the growing weight of friendship in their lives.

Yet bullying seemed to be happening less at age 14, and was now reported by 18 percent. Almost all of this bullying was at school. Two-thirds of it was verbal, and a third, physical. Half of those who were bullied ignored it. Fourteen percent said they had bullied someone else. Parents of bullies are less aware of that than are the parents of those who are bullied: but in both cases, parents often do not know of this activity.

Young people who bully (some of whom are also victims of bullying) are less engaged in school and learning, and are more likely to express dissatisfaction with life, and show risky behaviour. They share some of the patterns related to earlier habits that we see with those who have friends with risky behaviour. Involvement in bullying over time seems to have negative effects not just for habits, but also in relation to finding positive value and enjoyment from learning, family, and friends, suggesting some "vicious" cycles (or crystallisations, since it is likely that these patterns start from connected threads, rather than a single event). Nonetheless, the patterns that we see here are not set in stone: the die is not cast at an earlier age. Experiences and relations with others remain important avenues for providing alternatives.

5. Values and experiences

VALUES

To get some idea of the animating values held by the study sample, we asked them to choose the three things that were of most importance to them from a list of 13. Somewhat surprisingly, there was very little change between age 12 and age 14. Doing well at school had become somewhat more important. Doing well at sport was somewhat less important, as was being helpful or kind.

Table 42 **Values**

Most important things↓	Age 12 (*n* = 496) %	Age 14 (*n* = 475) %
Doing well at school	42	51
Enjoying the things I do	42	47
Having lots of friends	32	35
Being with family/whānau/fono	33	31
Doing well at sport	37	29
Being helpful or kind	28	23
Money to spend	23	23
Good sense of humour	20	22
Wearing the right clothes/looking cool	16	14
Doing well at an interest outside school	8	8
Going to church	8	7
Good looking	5	5
Having the latest things	5	4

Future values

We also asked the sample to tell us which three things from a list of 12 would be most important to them as an adult. These tell us something about what adulthood looks like to young people, as well as their underlying values. Adulthood to these 14-year-olds does not look very different from how it seemed when they were 2 years younger. But there is more awareness of the value of an interesting job, and a little more interest in having lots of money. Doing well at sports seems less important; and although doing well at school has become more important in their current life, having a good education was slightly less important when they looked ahead—perhaps seeing it as something they would *do* as adults, rather than something that would allow them to make the most of adulthood.

Table 43 **Values of most importance in adulthood**

Value↓	Age 12 (*n* = 496) %	Age 14 (*n* = 475) %
Happy family life	66	71
Good health	49	48
Interesting job	38	48
Good education	41	36
Lots of friends	30	26
Lots of money	19	24
Important job	13	16
Doing well at sports	16	10
Influencing other people	4	7
Taking part in church/spiritual activities	6	6
Being creative/making something new	8	5
Good looks	5	4

We found three clusters among the young people in terms of their current and adult values.

Anchored and achieving: This cluster put most emphasis on having an interesting job, a good education, influencing others, being creative, or taking part in church/spiritual activities. They also put emphasis on doing well at school, being with their family/whānau/fono, being helpful or kind, and enjoying the things they did, and wanted a happy family life in the future. Thirty-seven percent of the sample were in this cluster.

Anchored: This cluster was like the *anchored and achieving* cluster in its emphasis on doing well at school, being helpful or kind, and and enjoying the things they did. It was somewhat more important to them to do well at school, be with their family/whānau/fono now, and as adults, to have a happy family life; and they put less emphasis on having an interesting job or good education. Twenty-two percent of the sample were in this cluster.

Standing out: This cluster put more emphasis on having money to spend now, and lots of money in the future, having lots of friends (now and in the future), wearing the right clothes or looking cool, and an important job. Having an interesting job, and doing well at school were less important. Forty-one percent of the sample were in this cluster. This cluster was least likely to enjoy reading (41 percent).

There were some links between these value sets, and social characteristics. Young people with tertiary- or university-qualified mothers were more likely to be in the *anchored and achieving* cluster (44 percent, decreasing to 26 percent of those with non-qualified mothers), with the reverse trend for those in the *standing out* cluster. There was no similar trend in relation to family income levels. Females were more likely to be in the *anchored* cluster (27 percent cf. 17 percent of males), but males were more likely to be in the *standing out* cluster (48 percent cf. 33 percent of females). Pacific young people were more likely to be in the *anchored and achieving* cluster (61 percent).

Average scores for mathematics, reading, attitudinal composite, and logical problem solving were lower for the *standing out* cluster. This cluster also tended to have lower school engagement, and to be more likely to think they could not do the three core subjects. Families were less supportive, with more friction in parent-child relations. This cluster was more likely to be involved in risky behaviour, or have friends who were engaged in that behaviour.

OPEN TO CHANGE

Sixty percent would like to change something in their lives right now, much more than the 40 percent at age 12. At this age, there was at least three times as much interest in having more money and improving a skill, and twice as much interest in changing appearance, becoming more confident, improving health, improving friendships, or changing a teacher.

Table 44 **Things 14-year-olds would like to change in their lives**

Aspect would like to change↓	Age 14 (*n* = 475) %
Have more money	22
Improve a skill	21
Change appearance/body	11
More confident	10
Improve friendships	9
Improve health	8
Change a teacher	6
Get a new possession	5
Change where I live	5
Parents back together	3
More accepted by family	3
Change school	3
Be happier	1

* Some students gave two responses, so the percentages add to more than 100.

Females would like more changes in their lives than males, particularly in relation to friendships, confidence, appearance, and a change of teacher, school, and the location where they lived. Males were more interested in getting a new possession, e.g. a car. Improving a skill was identified by more Pākehā/European and Asian young people than Māori and Pacific, and was of least interest to those with non-qualified mothers. Changing where they lived was of most interest to young people in low-income families. Having better friendships was of most interest to young people with university-qualified mothers. Reuniting parents was of most interest to young people with non-qualified mothers, or in low-income families.

We asked what job the young people would like to do as an adult, and coded the answers into broad occupational groups using the standard classification of occupations, used by Statistics New Zealand. Most were interested in either professional work, or work involving technical skills and working with people. Parents' and young people's views corresponded about half the time; the correspondence was strongest for students thinking of professional occupations, and weakest for those thinking of trades or manual occupations. Around a fifth of the parents did not know what future work their child might currently be thinking of.

Table 45 **Future careers**

Career↓	Young people (*n* = 475) %	Parents (*n* = 476) %
Professional/manager	43	44
Technicians, associated professionals, clerks	42	31
Service & sales	12	12
Trades	7	6
Manual	4	5
Don't know	10	22

* Twenty-one percent of the young people gave two possibilities, as did 17 percent of the parents; and 3 percent gave three possibilities, as did 1 percent of the parents.

The next table shows how social characteristics relate to thoughts of future occupations. Social characteristics are least reflected in interest in technical and associated professional work. Males continue to be more likely to be interested in very high positions and trades work. Ethnicity shows some differences for most of the occupational areas. Advantages of family income and education are most noticeable in relation to interest in professional work, and service and sales. But those who had not thought about what they would do, or had no particular attraction or thought of a likely area (and these may change over time) are just as likely to be found in families with high income and knowledge resources as those with less. The contrasts between social groups that are of most note are shaded in the table.

Table 46 **Thoughts of future occupations and social characteristics**

Future occupation → Social char. ↓	Legis-lator/ manager	Profess-ional	Technical & assoc prof, clerks	Service & sales	Trade	Agriculture/ fish	Elementary/ plant & machine	Don't know
Gender								
Male	6	41	44	13	12	2	1	9
Female	2	47	48	14	1	4	0.4	11
Ethnicity								
Māori and Pacific	1	33	59	18	4	0	3	15
Pākehā/European and Asian	4	45	44	13	7	3	0.3	9
Family income								
Low	0	38	40	24	9	3	0	12
Medium	2	31	43	16	11	5	1	12
High	5	47	50	12	5	2	1	7
Very high	6	55	48	6	3	2	0	11
Maternal qualification								
None	2	31	49	25	8	2	0	8
Trades	3	40	45	13	9	3	1	12
Tertiary	7	51	42	11	4	6	1	5
University	5	54	52	8	4	1	0	10

Parents' views of their child's future occupation show slightly less trace of social characteristics, particularly in relation to ethnicity; but some differences in patterns related to gender. This may simply reflect some parents being less aware of their child's current thoughts about occupations.

Table 47 **Parent thoughts of their age-14 child's future occupation and social characteristics**

Future occupation → / Social char. ↓	Legis-lator/ manager	Profess-ional	Technical & assoc prof, clerks	Service & sales	Trade	Agriculture/ fish	Elementary/ plant & machine	Don't know
Child's gender								
Male	2	37	26	11	11	3	2	27
Female	1	47	36	14	0.4	3	1	17
Child's ethnicity								
Māori and Pacific	1	32	34	14	7	1	3	23
Pākehā/European and Asian	2	44	30	12	6	3	2	22
Family income								
Low	2	35	29	16	3	0	2	31
Medium	1	33	30	18	11	6	2	16
High	0	48	30	13	5	3	1	21
Very high	5	47	36	7	4	2	1	24
Maternal qualification								
None	2	28	20	19	9	3	2	37
Trades	2	42	30	13	7	3	3	20
Tertiary	1	50	36	6	6	5	0	17
University	2	46	35	11	0	1	1	24

PARENTAL VIEWS OF THEIR CHILD'S HAPPINESS, HEALTH, AND COPING

The level of general happiness was 84 percent, much the same as at age 12. Thirteen percent fluctuated in their level of happiness, and 2 percent were generally unhappy.

We also asked parents about their child's general health. Seventy-five percent were reported to be in very good or excellent health overall, up slightly from 69 percent at age 12. Twenty percent had good health. Two percent were said to have poor health.

Parental views of their child's health were unrelated to social characteristics. Happiness was lower for young people in low-income homes (69 percent cf. 92 percent of those in very high-income homes).

Coping with things that are upsetting

Forty-three percent of the young people were said by their parents to have something in their life that was unsettling for them; this was much the same proportion as at age 12, and at age 5 (when they started primary school), and slightly higher than the 32–36 percent reported from ages 6 to 10. As in earlier years, a wide variety of things could unsettle the young people. Friction or stress at home was reported more at younger ages; this may reflect relationships between parents as much as parent-child relations, but it is worth noting for those who see adolescence as a uniquely stressful time.

As before, most of those who were seen by their parents to be upset by something were coping with it. It was causing no problem for 42 percent of those who were upset. Forty-one percent varied in their response to being upset. Fifteen percent were coping poorly, somewhat increased from 11 percent at age 12.

Females were more likely to be seen as unsettled by something (49 percent cf. 39 percent)—which may reflect their talking more with their parents. However, they were just as likely to be coping with it. There were no associations with ethnicity or maternal qualification levels. While family income levels were unrelated to experiences of being unsettled, coping well with it was: rising from 12 percent of those in low-income families experiencing something upsetting, to 23 percent of those in medium-income families, to 51 percent of those in very high-income families experiencing something upsetting.

We found higher average attitudinal composite scores for young people who were said to be coping well with what upset them, compared both with those who were thought not to be unsettled by anything at the time of our interview with parents, and those who were not coping, or whose coping varied. Those who were coping poorly had the lowest average scores. These differences remained when family income was taken into account; when maternal qualification was taken into account, there was no difference between the scores of those who were coping well, and those who were not unsettled.

Consistent with the study themes of change as something usual (though rarely in the main aspects of young people's lives, and rarely with many marked changes happening all together, or suddenly), and of young people's resilience, or general sturdiness (it takes major change or a critical mass of negative experiences and relationships to disturb them), only a quarter of the students had not been unsettled at any of the four times when we spoke with their parents over the ages 8 to 14. A further 50 percent had been unsettled for one or more of these times, but coped with it. These two groups had the highest average competency scores. Eleven percent had coped poorly at one time (ages 10–14), and 4 percent had either coped poorly at two times, or had coped poorly at age 8. The latter had the lowest average scores on the competencies. These differences remained statistically significant for mathematics when family income was taken into account, but were reduced when maternal qualification was taken into account. They were also statistically significant for the attitudinal composite, and were diluted when family resources were taken into account.

PARENTAL CONCERNS

Concern about school and their child had doubled since age 12 (34 percent cf. 17 percent at age 12). Otherwise, the pattern of concerns was much the same. Almost half the parents expressed some concern (albeit qualified) about their child's self-confidence; and the proportion who were concerned about school was much the same as those who were concerned about getting their children to help around the house.

Table 48 **Parental concerns about their child's life at age 14**

Parental concern↓	Concern %	Qualified concern %	No concern %
Self-confidence	18	27	55
Help around the house	17	19	63
School	15	18	66
Behaviour at home	11	25	62
Friendships	11	18	70
Interests	11	12	77
Romantic relationships	5	9	86

Parental concerns were unrelated to gender or ethnicity. As at age 12, there was more unqualified parental concern expressed about home behaviour for children of non-qualified mothers (23 percent cf. 11 percent of others). School was now also more of a concern for this group (22 percent, decreasing to 11 percent for those with tertiary- or university-qualified mothers); as were romantic relationships (11 percent, decreasing to 2 percent for those with tertiary- or university-qualified mothers. However, helping round the house was no longer a greater concern for this group than for others.

Concern about their child and school was highest for parents in low-income families (26 percent), and lowest for those in very high-income families (9 percent). A similar trend was evident in relation to self-confidence and romantic relationships. However, family income levels were no longer associated with concerns about help around the house or home behaviour, as they had been at age 12.

Nineteen percent of the sample had parents who had no concerns at all about any of these areas, a little down from the 24 percent at age 12. Thirty-seven percent had parents who expressed some qualified concern about one or more area. But only 12 percent had concerns in three or more of the seven areas asked about, only slightly up from the 10 percent at age 12.

Are continuing concerns related to competency levels?

At age 12, we found that those whose parents expressed no concerns about any of the six areas of their life that we asked about tended to have higher average scores, and those whose parents expressed concern about three or more of the areas, lowest average scores. This pattern remained the same at age 14.

It may comfort some parents—and young people—that only 9 percent of the sample had parents who had no concerns about them in these areas at either age. The parents of a further 56 percent expressed qualified concern at one age only. Some concerns existed for 11 percent at age 12, but these had faded or become qualified at age 14. Twelve percent of the sample's parents had concerns at both ages, but only two concerns at age 14. Eleven percent had concerns at both ages, and three or more concerns at age 14.

After taking into account family resources, those whose parents had no concerns at either age had higher average scores than either those whose parents had concerns at both ages, or those whose parents had concerns in three or more areas at age 14. The size of the differences was around 10 percentage points for mathematics, and around 15 percentage points for reading comprehension. Those whose parents expressed

qualified concern at one age only also had higher reading comprehension scores than this group (around 10 percentage points more).

When we look at the attitudinal composite, we see more differences, distinguishing each of the groups. Thus, those whose parents had no concern at either age had higher average scores on the attitudinal composite than those who expressed some qualification at one of the two ages; the latter had higher scores than those who had concerns at both ages. These remained after taking into account family resources.

In effect, this is indicating that parents are often aware of issues in their lives, and that there is some consistency between classroom behaviour, which is what the attitudinal composite is based on, and what parents see in non-school settings, as well as indicating that earlier behaviour can continue, or feed into, current. This is not a deterministic picture: parents' views of concerns have changed over the 2 years, and within each of the categories we looked at, there were young people with both high and low attitudinal composite scores.

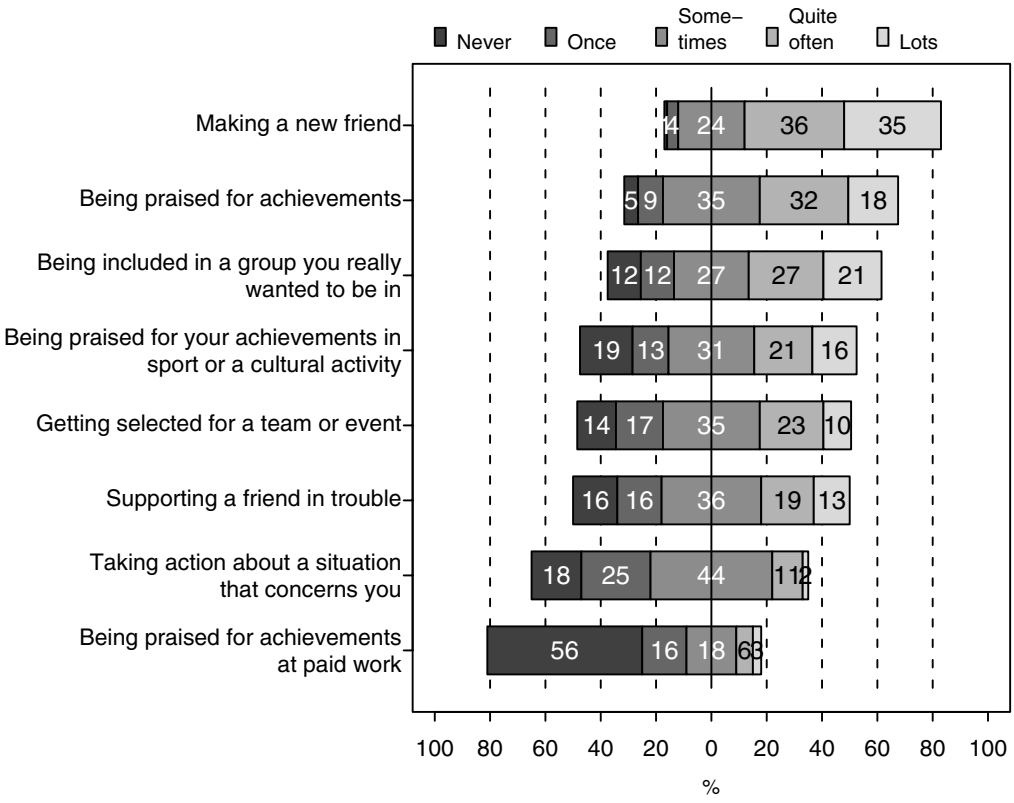
EXPERIENCES OVER THE PAST YEAR

We asked the sample to tell us how often they had had a range of experiences that could affect their wellbeing. These 38 items included both positive events (such as being praised for achievements in sport or culture), and negative (such as being pressured to do something you didn't want to do). We found three factors among this set: one positive, one negative, and one that drew together items relating to behaviour that indicated risk taking and getting into trouble. We also created a variable from the information about adverse events that had happened to young people out of school, and information from their views about school (whether they felt lonely, sad, or had a hard time from someone).

Praise and achievement factor

Praise did not seem to be an everyday experience for the sample. This may mean that most of them saw praise as something more than a quick comment by parents or friends. Around half had been praised for achievement or included in a valued group often or more. The level of praise for achievements in particular aspects—sport, culture—and paid work, were lower, reflecting the fact that not everyone took part in these. Just under half were included often or more in a group that they valued. Taking the initiative to support friends or about something that concerned them was less frequent; this may mean that they did not see the need to do so, that they did not experience such situations. Less than a fifth had never taken action over the past year about something that concerned them, or supported a friend in trouble.

Figure 11 ***Praise and achievement* factor items**



The average score was 5.6 (s.d. 1.5). Family income was the only social characteristic associated with differences here, with average scores rising from 5.2 for those in low-income families, to 5.8 for those in very high-income families. Those whose families were in financial hardship had lower average scores (5.1 cf. 5.6 for those whose family financial situation was comfortable or moderate). Other clusters to show associations were young people's out-of-school activities (the *electronic games~no strong interests* group had lower average scores, 4.8), and the motivation cluster (those whose motivation was low had an average of 5.3 cf. 5.6 for those who were unsure, and 5.7 for those whose motivation was high). However, those who had had two or more adverse experiences had higher average scores (6.1) than those who had experienced none, or

only one, 5.5. This is consistent with the positive correlation with the factors of *dissatisfaction* and *risky behaviour*. These associations are somewhat different, and indicate that there may be different patterns depending on the source of praise or achievement (adults cf. peers).

This factor was not strongly correlated with the other factors used in our analysis. The highest correlations were at the low end. Those of .18 or above are given in the table below. These suggest that praise and achievement was more likely to occur in positive family environments, and for young people who were engaged in learning—and who used internal markers of achievement. English seems to be the subject that supports good experiences and the ability to support others—or in which those who have these experiences are likely to enjoy learning. Solid friendships are also associated. But those who experience praise and achievement may also be more likely to engage in risky behaviour than those who do not.

Table 49 ***Praise and achievement*** **factor correlations with other study factors**

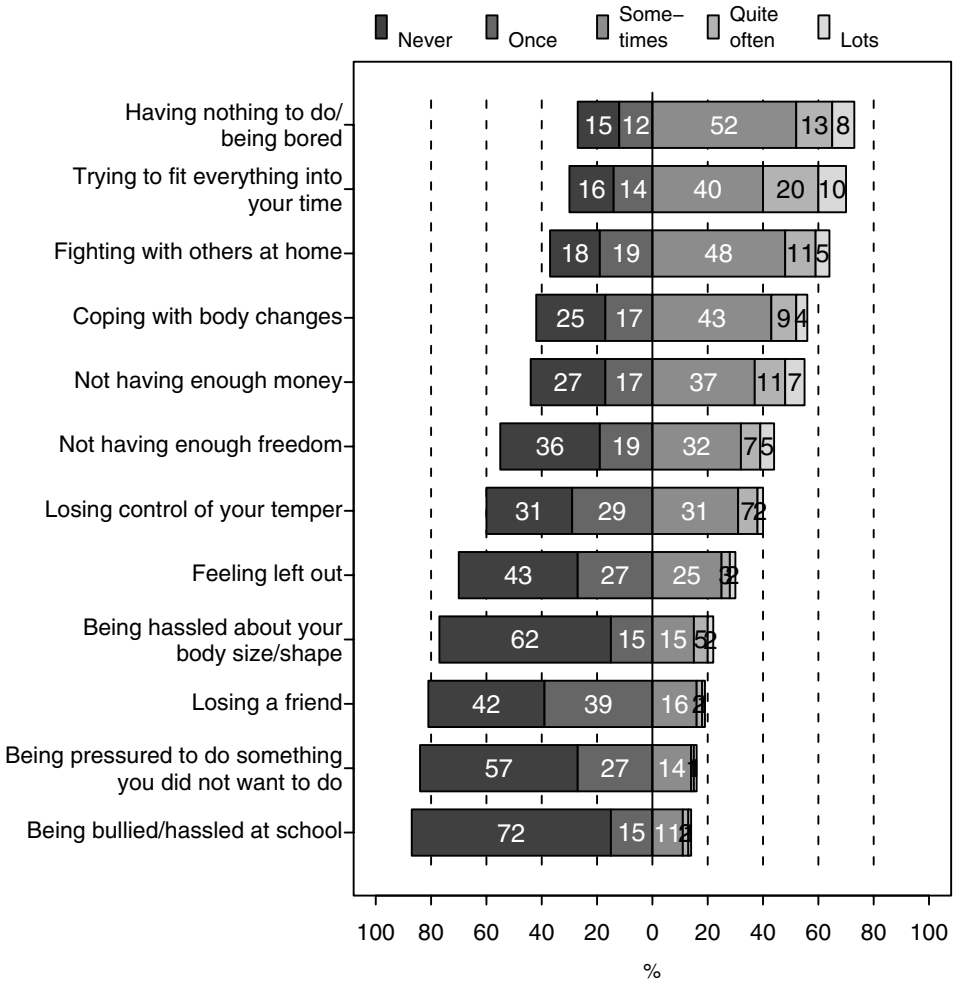
Factor	Correlation level
Supportive family	0.27
Risky behaviour	0.26
Solid friendships	0.23
Family communicates well	0.23
Inclusive family	0.22
Confident at school	0.19
Positive learning environment – English	0.19
Absorbed in learning	0.19
Internal markers of achievement	0.19
Dissatisfaction	0.18
Disengaged in learning	-0.18
Negative about English	-0.22

Dissatisfaction factor

This factor brings together a range of sources of dissatisfaction with events, others, or (lack of) opportunities.

The most common experiences are getting bored, trying to fit everything into the time, or fighting with others at home: experienced by two-thirds or more. Being bullied, or pressured by others, or losing a friend were least common, though they affected around a fifth of the young people. Around half the young people felt a lack of freedom or money at least sometimes, indicating their growing independence.

Figure 12 ***Dissatisfaction* factor items**



The average score on this factor was 3.7 (s.d. 1.5). Females had a higher average score on this factor, 3.9 on the 10-point scale, cf. 3.6 for males. This factor was not associated with students' interests, but it was with their parents' interests. Young people with more than two or more adverse experiences had higher average scores (4.6 cf. 3.9 for those with one adverse experience, and 3.5 for those with none).

This factor had somewhat stronger correlations with the other factors in our analysis. The table below gives all those over 0.20. Young people with high scores on this factor were also likely to have high scores for the factors of *risky behaviour* (outlined next), *family pressure*, and *disengagement with school*—and conversely, low scores for the aspects of family support which were positively associated with high scores on the *praise and achievement* factor. It is hard with most of these correlations to be clear which might contribute to the feelings expressed by the items in this factor, and which might reflect others' experiences of those feelings as they are enacted out. Opportunities at school or understandings of progress were largely unrelated to this factor—with the exception of high scores on the *disrupted learning environment* factor.

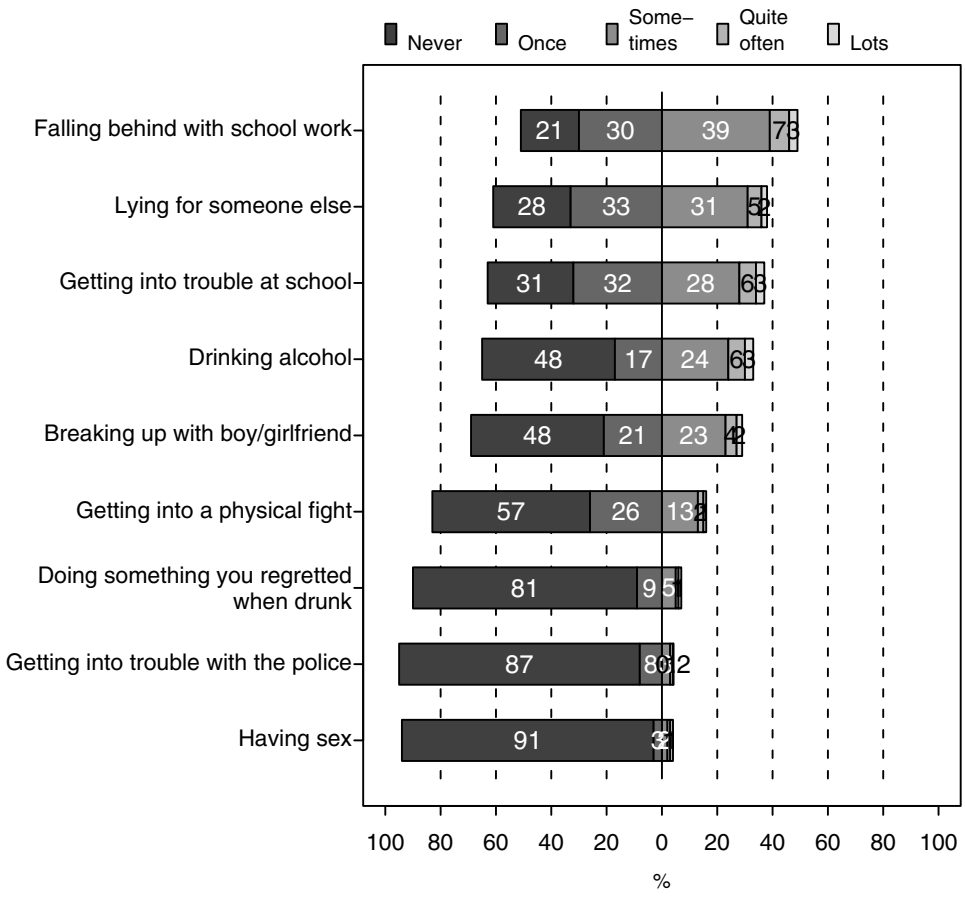
Table 50 ***Dissatisfaction*** **factor correlations with other study factors**

Factor	Correlation level
Risky behaviour	0.44
Family pressure	0.39
Friends with risky behaviour	0.30
Disengaged in learning	0.25
Disrupted learning environment	0.23
Parent-child friction	0.22
Family communicates well	-0.23
Engaged at school	-0.24
Solid friendships	-0.26
Confident at school	-0.32
Supportive family	-0.34
Inclusive family	-0.39

Risky behaviour factor

At age 14, having sex was still rare in this sample—at the same level as getting into trouble with the police, or being sufficiently drunk to do something that they regretted afterwards. Just under half the sample had fallen behind with their schoolwork at least sometimes. Getting into trouble at school at least sometimes was also relatively high. Around a third drank at least sometimes, lied for others, or had broken up with romantic partners (suggesting that these may be short-lived at this age for many).

Figure 13 ***Risky behaviour*** **factor items**



The average score on this factor was 2.7 (s.d. 1.2): risky behaviour was not common. Higher average scores on the *risky behaviour* factor were evident for young people in low-income families (3.3), for those with low motivation (3.1), and those with high absenteeism (3.1), those whose family faced financial difficulty (3.0), those with *standing out* values (3.0), those whose teachers described their behaviour at age 12 as difficult (3.2), and those who had had two or more adverse experiences (3.1).

This factor had quite a few correlations above 0.2, including that with the *dissatisfaction* factor described above. Like that factor, these correlations on their own don't allow us to distinguish between the things that may contribute to risky behaviour from those that reflect it (and some encounters and experiences are likely to do both). Risky behaviour does seem to be more of an isolating experience than dissatisfaction: there are consistent signs of a "turn-off" from school, down to the class level, as well as difficulties within the home. This turn-off comes at the price not just of current achievement levels at school, but not having the attitude to learning that would support any future desire to re-engage with it.

Table 51 ***Risky behaviour* factor correlations with other study factors**

Factor	Correlation level
Friends with risky behaviour	0.62
Dissatisfaction	0.44
Disengaged in learning	0.43
Family pressure	0.36
Parent-child friction	0.28
Negative view of mathematics	0.28
Negative view of science	0.27
Praise & achievement	0.26
Negative view of English	0.23
Disrupted learning environment	0.21
Responsible (parent view)	-0.20
Positive learning environment in English	-0.21
Effective behaviour (parent view)	-0.22
Positive attitude to English teacher	-0.23
Family communicates well	-0.24
Positive attitude to mathematics teacher	-0.25
Positive learning environment in mathematics	-0.26
Supportive family	-0.29
Inclusive family	-0.31
Internal markers of achievement	-0.32
Overall achievement	-0.32
Confident at school	-0.33
Absorbed in learning	-0.37
Engaged at school	-0.54

The correlation between having risky behaviour yourself at age 14, and having friends with risky behaviour is high: 0.62. We cannot distentangle which of these might have come "first"—whether having friends with risky behaviour contributes to your own risky behaviour, or vice versa.

We found that risky behaviour was more likely for those who had not enjoyed reading, and had mixed or heavy patterns of TV watching over the years; it was also more likely if there had been previous involvement in bullying, and the number of parental concerns about their child.

A regression model that included previous attitudinal competency scores (from age 8), age-12 teacher views of classroom behaviour, and aspects of the children's past (including the number of schools attended and house shifts) accounted for 15 percent of the variability in scores for risky behaviour. The dominant variables were (non) enjoyment of reading, and involvement in bullying.

Neither of the *risky behaviour* factors is associated with differences in earlier competency levels until age 10, when those who scored higher on the factor having *friends with risky behaviour* had slightly lower mathematics and reading scores. This difference was not apparent for those who scored high for risky behaviour themselves. At age 12, this group had somewhat lower scores for reading and the attitudinal composite. Those who had higher scores for their friends having risky behaviour had somewhat lower scores for reading, the attitudinal composite, and mathematics.

It appears that there are associations between lower scores on both cognitive and attitudinal competencies at ages 10 and 12, and current levels of indulging in "risky" behaviours. We can speculate that if previous lower competency levels lead to lower confidence and engagement in learning, then this in turn may lead to students being disillusioned and consequently experimenting with risky behaviours with or without their friends.

Adverse events variable

Most of the sample had not experienced the eight adverse events we asked about, either in school or out of school. Eighteen percent had experienced one of them at least usually over the past year, and 10 percent, two or more.

Health and accidents were the most frequent adverse events that the young people had to deal with. However, family break-ups were experienced by just under a fifth, and 13 percent had experienced the death of at least one friend. Being hassled about their culture had occurred to 16 percent of the sample: to three times as many of the Māori and Pacific young people (38 percent) as to Pākehā/European and Asian young people (13 percent). Being hassled about one's sexuality is probably most likely to occur with those who appear different, particularly those who do not fit norms of heterosexual appearance. Though the proportion of those who reported being hassled about their sexuality is low overall, it is high in relation to the population estimates of homosexuality, supporting recent concerns about the experiences of young homosexuals.

Table 52 **Items in the *adverse events* variable**

	More than once	Once
Health problem	19	20
Accident	16	20
Hassled about culture	7	9
Family break-up	4	14
Moved to live with other family members	4	5
Friend's death	2	11
Hassled about sexuality	2	3
Had sex when did not want to	1	3

Pervasive loneliness was rare, but around a quarter sometimes felt sad or lonely, at home or at school.

Table 53 **Sadness and loneliness—items in the *adverse events* variable**

	At least usually	Sometimes
Hard time from someone at school	5	24
Lonely at home	4	26
Sad at school	4	25
Lonely at school	2	23
Parents don't trust judgement	2	19
Not been listened to at home	1	17

Pacific young people were more likely to have experienced one or more adverse event (48 percent). Experiencing two or more of these was more likely for young people with non-qualified or trades-qualified mothers (13 percent cf. 5 percent of those with tertiary- or university-qualified mothers); and for those from low- or medium-income families (15 percent cf. 8 percent of those from high- or very high-income families). A quarter of the young people in decile 1–2 schools had experienced at least two of these events cf. 9 percent of those in decile 3–10 schools. Gender was not related to these adverse experiences.

SUMMARY

While there have been changes in leisure activities and friendships, and signs of increasing independence, the sample's values were similar to what they had been 2 years earlier. At age 14, they did place somewhat more importance on doing well at school, and somewhat less on doing well at sport, both now and looking ahead to adulthood. Having an interesting job had become more important, as had having lots of money.

We found three clusters among the young people in terms of their values:

- Anchored and achieving (37 percent)—valuing relationships, achievement at school and at work, including having an interesting job and influencing others.
- Anchored (22 percent)—valuing relationships, achievement at school, but less emphasis on having an interesting job in future.
- Standing out (41 percent)—the *standing out* cluster put more emphasis on money, friends, clothes and looking cool, and an important job. We found this cluster had lower competency levels, lower school engagement, less supportive families, more friends with risky behaviour, and showed more risky behaviour themselves.

Sixty percent would now like to change something in their lives, much more than the 40 percent at age 12. There was much stronger interest in having more money and improving a skill, and in changing appearance, becoming more confident, improving health, improving friendships, or changing a teacher.

Most of this sample (which includes more young people from very high-income and high maternal qualification levels than the population at large) were thinking of professional work, or work involving technical skills and working with people. However, young people who did not know what they wanted to do were found across the board.

Parental concern about their child and school had doubled since age 12 (34 percent cf. 17 percent at age 12). Otherwise, the pattern of concerns was much the same as 2 years earlier. Most parents had some concern about their child at either age 12 or 14. Parents' concerns were often justified: young people's scores on the attitudinal composite and for mathematics and reading comprehension were lower if their parents had concerns about them at both ages, or three or more areas of concern at age 14.

Praise did not seem to be an everyday experience for the sample. This may mean that most of them saw praise as something more than a quick comment by parents or friends. Around half had been praised for achievement or included in a valued group often or more. Less than a fifth had never taken action over the

past year about something that concerned them, or supported a friend in trouble. Praise and achievement for non-school things was more likely to occur in positive family environments, and for young people who were engaged in learning—and who used internal markers of achievement. But it was not strongly associated with these; nor with an absence of risky behaviour.

Two-thirds of the sample sometimes got bored, had difficulty trying to fit everything into their time, or fought with others at home. Around half the young people felt a lack of freedom or money at least sometimes, indicating their growing independence. Levels of dissatisfaction were relatively low.

Risky behaviour was also low at age 14. It was rare to have sex or be sufficiently drunk to do something that they regretted afterwards. Around a third drank at least sometimes, lied for others, or had broken up with romantic partners (suggesting that these may be short-lived at this age for many). Just under half the sample had fallen behind with their schoolwork at least sometimes. Getting into trouble at school at least sometimes was also relatively high: a sign of young people flexing their growing sense of independence? However, high levels of risky behaviour do seem to be more of an isolating experience than dissatisfaction: there are consistent signs of a "turn-off" from school, down to the class level, as well as difficulties within the home. This turn-off comes at the price not just of current achievement levels at school, but not having the attitude to learning that would support any future desire to re-engage with it.

There are some tracks from current risky behaviour back to lower competency scores at ages 10 and 12, and non-enjoyment of reading and involvement in bullying from age 8.

Twenty-eight percent of the sample had experienced at least one adverse event over the past year: these included family break-ups, and being hassled about culture or sexuality. Māori and Pacific young people were more likely to experience being hassled about their culture; but the incidence of being hassled about sexuality was proportionately high. Adverse events did have associations with risky behaviour.

6. Engagement in school and learning

A description of the transition to secondary school, and student and parent views of the students' early secondary school experiences is given in Chapter 5 of the separate report *Completely Different or a Bigger Version?* (Wylie, Hodgen, & Ferral, 2006). Here we summarise some of the main trends in views of school experiences reported there, before moving on to look at attendance, and perceptions at class level for the core subjects of English, mathematics, and science. We also provide more analysis of the relationships between the factors we formed in relation to school engagement, and other factors and clusters related to how the sample spent their time, relations with family, and relations with friends. The aim of this is to deepen our understanding of what might affect school engagement, both in and outside the school environment.

- Around two-thirds of the students continued to enjoy learning at age 14, and like their teachers (even if there were more of them). Most seemed confident in their new school. They were slightly more likely at age 14 than at age 12 to say they usually got all the help they needed—though the proportion of those who did not usually or always get the help they thought they needed (27 percent) remains of concern.
- There were marked increases in boredom and restlessness, and in those who thought they could do better work if they tried.
- There were some gender differences, though they generally affect small proportions. Males were more likely to be bored, to think they could do better work if they tried, and not to feel they were treated as an individual or as an adult. Females were more likely to feel sad, not safe, and teased about their beliefs; but there were higher proportions among females of both those who felt they belonged in their school, and those who felt they did not belong.
- There were signs that Māori and Pacific students were running up against the school rules more: they were less likely to think discipline rules were fair, and to feel they were treated as individuals. They were more likely to think they could do better work if they tried, but also more likely to think they got too much work to do.
- Ethnic differences tended to overlap with family resources: thus we see the same trends in relation to family income and maternal qualification. However, in addition, there was a much greater likelihood that students from low-income families or with non-qualified mothers would report being bored, skipping classes, getting sick of trying, not liking their teachers, and wanting to leave school as soon as they could.
- A marked change from when the students were aged 12 and in primary school was that students attending low-decile schools were now much less engaged, and less confident in their schools. They were, however, just as likely as others to like their teachers, feel they got all the help they needed, and that it was important to do their best.
- Contrary to some US research, there was no increase in the use of extrinsic comparisons to gauge learning progress in this sample of New Zealand students over the transition to secondary school. However, there was also a slight decline in the mention of intrinsic signs, though these were mentioned by more than two-thirds of the students. Perhaps this indicates less certainty than at age 12 about how to know one was doing well at school, but a continued awareness that to learn, effort was needed. Students from low-income families, or whose mothers lacked a qualification were less likely to say that one of the ways they gauged their achievement at school was that what they learnt made sense (learning as understanding)—this was also evident for students in low-decile schools.
- Homework was taking an hour longer each week, on average at age 14 than it had at age 12; but there was a growing gap in time spent between those who spent most time, and those who spent least time on it. Dislike of homework grew slightly. Parental help was slightly less than at age 12, and parents reported that they mostly gave it "when needed". Forty-three percent of the parents said they had difficulty helping their child with mathematics homework. Parental help with homework was less likely in low-income homes, and for Māori and Pacific students.

- Sixty-five percent of the parents thought their child enjoyed school—less than the 75 percent at age 12, but comparable to age 6, after the transition between early childhood education and primary school. Family income levels remained associated with views of enjoyment of school—but not gender and maternal qualification. Low school decile was also more associated with lack of enjoyment of school.
- Around a quarter of the students were thought by their parents to like only some of their teachers, or none of them. However, only 12 percent thought their child had little or no support for their learning from their teachers, and 19 percent thought their teachers gave their child little support for their emotional wellbeing.
- Satisfaction with their child's school progress was the same for parents with children in Year 9 as it had been at age 12, but there was a slight drop for those with children in Year 10. Although parents of sons expressed slightly less satisfaction with their progress than did parents of daughters, this pattern was also evident at age 12; and parents reported somewhat higher levels of their son liking his teachers than did daughters' parents. Māori and Pacific parents were less satisfied with their child's progress. Parents from low-income homes thought that their children got less support from teachers than did others, and that their children enjoyed school less.
- Parents of students in decile 1–2 schools reported less satisfaction, and were more likely to have co-operated with someone at the school to sort out a problem, with a higher rate of social-emotional issues. Parents of these students also identified teacher-student relations as something they would like to change. Overall, 56 percent of parents would like to change an aspect of their child's school.
- Parents were just as likely to work with their child's teachers to resolve issues at secondary school as they had been 2 years earlier. Most of these issues were resolved, but there was some increase in the (small) proportion of those that had not been.
- The majority of parents felt welcome in their child's secondary school; patterns of involvement were much the same as they had been in their child's last primary school, with the exception of voluntary classroom work, which dropped from its low 8 percent at age 12 to 2 percent at age 14.

UNDERSTANDING ENGAGEMENT IN SCHOOL

In the rest of this chapter, we focus on each of the set of factors, or groups of items where students responded similarly, that we found in relation to student engagement. With each factor, we describe the overall picture first—what this tells us about the sample's perceptions and experiences as a whole. Then we look at the average scores for the factor (each on a 10-point scale), and at whether average scores are different for the four social characteristics (gender, ethnicity, maternal qualification, and family income), and in relation to aspects such as motivation, abstenteeism, leisure pursuits, and values. We identified a set of "risk" activities or dimensions in the course of this analysis. These are:

- Low school motivation (view of the long-term value of school)
- Difficult school behaviour at age 12
- "Standing out" values
- Electronic games~no strong interests leisure use
- Parents' leisure interests—mixed (less likely than others to study, do voluntary work, attend meetings, read newspapers, or regularly watch TV; a relatively high proportion of low-income families in this cluster, and the highest proportion of non-qualified mothers)
- Difficult family financial situation
- Two or more adverse experiences in the past year
- High abstenteeism
- Heavy TV watching history (from age 8)
- No enjoyment of reading over time (from age 8)

We look at the correlations between this factor and the others in our set, to see how engagement in school is related to other school factors, interactions with family, a young person's risk behaviour, and their friendships. Then we report the main findings from regression models undertaken in relation to the research questions for this phase—some focused mainly on current experiences, some focused mainly on trends over time—to see if we can identify the factors that might carry more weight than others in making sense of differences in school engagement and disengagement.

The factors that we start with are aspects of the school environment that might contribute to student engagement:

- Experiences of classes in the three compulsory subjects of English, mathematics, and science:
  - positive learning environments;
  - challenging schoolwork;
  - comparative learning environments; and
  - disrupted learning environments.
- Next, we move to look at student reactions: attitudes to teachers, and whether they had a negative view, in these three subjects.
- We then focus on student disengagement with the three subjects, before shifting to the overall "school" experience: whether students were engaged or confident.
- Finally, we look at attendance, at attitudes to learning (whether students use effort and internal pointers to gauge their learning, or use external pointers, and are absorbed in learning in their three compulsory subjects), and at motivation.

POSITIVE LEARNING ENVIRONMENTS

Overall student views of the learning environments they were given in their English, mathematics, and science classes were very similar. Just over two-thirds were in classes where they felt they had clear, helpful teachers who gave useful feedback on student work, and in mathematics and science, would explain things more than once. Just over half were in classes where teachers managed to pitch the work so it seemed relevant to the students, and showed interest in their students' ideas. However, just over a third seemed to the students to know what interested them, and only a quarter enjoyed the homework they got.

Table 54 **Student agreement with items in the *positive learning environments* factor**

Items↓	English %	Mathematics %	Science %
The teacher gives clear expectations	74	68	73
My teacher gives clear instructions	70	67	70
The teacher gives useful feedback on work	70	59	61
I can count on the teacher for help if needed	67	66	71
The teacher helps me do my best	64	65	63
The teacher uses examples that are relevant to me	59	57	59
My teacher is interested in my ideas	57	50	56
My teacher keeps teaching till we understand	57	65	56
The teacher is happy to explain things again	54	66	64
My teacher knows about what interests us	41	30	44
I enjoy doing the homework I get	23	22	27

Average scores for these factors on a 10-point scale were 6.8 (s.d. 1.5) for English, 6.6 (s.d. 1.8) for mathematics, and 6.8 (s.d. 1.8) for science. However, there was some variance in individual scores, with only weak to moderate correlations between the three. English and science classes seemed to have more in common than with mathematics classes.

Table 55 **Correlations between positive learning environment factors for three core subjects**

	Mathematics	Science
English	0.25	0.43
Mathematics		0.25

Social characteristics were largely unrelated. Students from low-income families gave lower average scores to their English classes (6.3); females for their mathematics classes (6.5). Note that here we do not find any difference for students in decile 1–2 schools. In terms of the clusters, only some of the risk set showed lower average scores: low motivation for all three subjects; *electronic games~no strong interests* and difficult family financial situation for English and mathematics; *standing out* values for mathematics and science; and high absenteeism for science. This suggests that these factors are measuring opportunities for learning, rather than reactions or reflections. It is hard to tell if these opportunities are affecting motivation, or some negative spiral is at work, with low motivation making it hard to connect in the classroom.

The correlations give us some further clues. They tend to be similar, so we report only the correlations with *positive learning environment - English*. Note that all but one of the correlations above 0.2 are related to learning, and positive attitudes to teachers, reflecting trust. No family or friends factors were related, suggesting that these neither support, nor hinder, how positive class (teacher-framed) environments can support useful learning behaviour and skills. However, student risky behaviour can detract from student perception of learning environments. It is also worth noting that these positive features of classroom

environments were unrelated to other features that have been argued as affecting opportunity to learn: having a disrupted classroom, or having a comparative (or competitive) approach.

Table 56 ***Positive learning environment – English*** **factor correlations with other study factors**

Factor	Correlation level
Positive attitude to English teacher	0.84
Absorbed in learning	0.52
Engaged at school[12]	0.45
Internal markers of achievement[13]	0.43
Confident at school[14]	0.43
Challenging schoolwork	0.43
Positive attitude to science teacher	0.42
Positive attitude to mathematics teacher	0.27
Risky behaviour	-0.21
Negative view of science	-0.23
Disengaged in learning	-0.38
Negative view of English	-0.52

Challenging schoolwork factor

There were subject differences in student perceptions of what was expected of them, with less challenge or working "hard" in English.

Table 57 **Student agreement with items in the *challenging schoolwork* factor**

Item↓	English %	Mathematics %	Science %
My teacher wants students to work hard	55	93	93
I learn things that are challenging	71	83	83

Average scores were high for this factor, 8.3 (s.d. 1.0). Social characteristics and school decile were unrelated to average scores. Lower average scores were seen for those in the *electronic games~no strong interests* and difficult family financial situation groups. Higher average scores were seen for those with high motivation and low absenteeism. There was a wide range of correlations. Challenging schoolwork was associated with positive learning environments, positive family relations, and friendships. But those with low scores for this factor did not show the converse of this. Risky behaviour appears with a negative correlation, as it has with other aspects of school and class engagement: otherwise, it seems that challenge in schoolwork is not limited to those with supportive relationships or social advantage. It may be limited for those who have decided that they cannot succeed in a subject (or, on its own, be unable to make a difference to their reactions).

[12] The correlations with mathematics (0.32) and science (0.30) were lower than the correlation with English .

[13] The correlation with *positive learning environment – mathematics* was weaker than for English and science: 0.26, perhaps because mathematics is more likely to be seen in terms of correct/incorrect answers. The correlation with science was 0.36.

[14] The correlation with *positive learning environment – mathematics* was weaker than for English and science: 0.30. The correlation with science was 0.39.

Table 58 ***Challenging schoolwork*** **factor correlations with other study factors**

Factor	Correlation level
Absorbed in learning	0.49
Positive learning environment – science	0.44
Positive learning environment – English	0.43
Positive learning environment – mathematics	0.42
Positive attitude to science teacher	0.40
Confident at school	0.38
Internal markers of achievement	0.37
Positive attitude to mathematics teacher	0.36
Positive attitude to English teacher	0.35
Supportive family	0.32
Family communicates well	0.31
Inclusive family	0.30
Solid friendships	0.28
Engaged at school	0.27
Comparative learning environment	0.27
Self-confident (parent view)	0.20
Negative view of mathematics	-0.20
Negative view of English	-0.25
Negative view of science	-0.28
Disengaged in learning	-0.29
Risky behaviour	-0.18

Comparative learning environment factor

Year 9 and 10 students were most likely to encounter overt comparisons with other students in their mathematics classes, but even here the proportions were low: this is not a strong feature of the sample's classes.

Table 59 **Student agreement with items in the *comparative learning environment* factor**

	English %	Maths %	Science %
The teacher tells us how we compare with other students	20	26	20
Teacher tells class who had highest & lowest marks	11	19	14

The average score for this factor was 4.3 (s.d. 1.8) on a scale of 10. Females had lower average scores (3.5), probably related to the lower average scores for those attending single-sex girls' schools (3.2). Comparative learning environments were not associated with other social and school variables, nor with the risk set of clusters. They also show fewer correlations than the other aspects of learning environments: but these correlations are mainly negative.

Table 60 ***Comparative learning environments*** **factor correlations with other study factors**

Factor	Correlation level
Disengaged in learning	0.35
Disrupted learning environment	0.26
Family pressure	0.23
Confident at school	-0.16
Engaged at school	-0.16
Solid friendships	-0.21

Disrupted learning environments factor

Classes were interrupted, and other students distracting for around two-fifths of the students. Around a quarter thought that students ignored their teacher.[15]

Table 61 **Student agreement with items in the *disrupted learning environments* factor**

	English %	Maths %	Science %
Other students are distracting	44	45	43
The class gets interrupted	43	42	39
Students don't listen to what the teacher says	25	33	26

The average score for the *disrupted learning environments* factor was 5.8 (s.d. 1.6) on a scale of 10. Family income levels were reflected (for students from low-income families, the average was 6.2; for those from very high-income families, 5.4), as was school decile (decile 1–2 students had an average of 6.5). Disrupted learning environments were more likely to be experienced by those with low motivation, *electronic games~no strong interests*, *standing out* values, and those who were seen as difficult or introverted at age 12. They were less likely to be experienced by those who had had no adverse experiences in the last year, and whose family was in comfortable financial circumstances. These associations, and the presence of risk factors and more negative than positive relations with family and friends in the correlations in the table below could indicate that students were more likely to bring a personal situation to their rating of their classrooms in terms of disruption; but it might also suggest that students with higher scores on this rating were more likely to be in classes that were more liable to disruption: something that would not help to reduce risk or alter unproductive patterns.

Table 62 ***Disrupted learning environments* factor correlations with other study factors**

Factor	Correlation level
Disengaged in learning	0.50
Family pressure	0.25
Negative view of science	0.24
Friends with risky behaviour	0.23
Dissatisfaction	0.23
Risky behaviour	0.21
Negative view of English	0.19
Negative view of maths	0.18
Absorbed in learning	-0.18
Overall achievement	-0.19
Responsible (parent view)	-0.19
Supportive family	-0.22
Effective (parent view)	-0.22
Confident at school	-0.24
Inclusive family	-0.25
Solid friendships	-0.27
Engaged at school	-0.28

[15] The stem for these items was "English/maths/science is a class where…."

Attitudes to subject teachers factor

The sample Year 9 and 10 students' attitudes to their teachers showed little difference between subjects. They were more likely to think they were treated fairly than that teachers knew them deeply as individuals. About three-fifths of the students liked their subject teachers.

Table 63 **Student agreement with items in the *attitudes to subject teachers* factors**

	English	Maths	Science
	%	%	%
My teacher treats me fairly	74	69	71
I understand my teacher's attitudes and rules	72	72	73
I like the teacher	64	52	59
My teacher really understands how I feel	32	29	35

The average scores for this factor on a 10-point scale were 7 (s.d. 1.8) for *positive attitude to English teacher*, 6.6 (s.d. 2.0) for *positive attitude to maths teacher*, and 6.8 (s.d. 1.9) for *positive attitude to science teacher*. Students from low-income families had lower average scores for English (6.5; the highest average was for students from high-income families, 7.3)—but income showed no relation to mathematics or science.

There is a mixed picture when we look at the risk set of clusters, with no consistent patterns across all three compulsory subjects. Students with high motivation had higher average scores for English (7.8); students with low motivation had lower average scores in regard to their mathematics (6.1) and science (6.2) teachers. The *electronic games~no strong interests* cluster had lower average scores in regard to their English (6.4) and mathematics (6.2) teachers. The *standing out* values cluster had lower average scores in regard to their English (6.6) and science (6.5) teachers. Those whose family were in a difficult financial situation had lower averages in regard to their mathematics teacher (6.1). High absenteeism was associated with a lower average in regard to science teachers (6.1).

The correlation levels were generally similar between subjects. Positive attitudes to a teacher are related to positive experiences at school, but also to positive interactions and relationships with students' families.

Table 64 ***Positive attitude to subject teachers*** **factor correlations with other study factors**

Factor	English teacher correlation level	Maths teacher correlation level	Science teacher correlation level
Positive attitude to English teacher	1	0.25	0.38
Positive learning environment - English	0.84	0.27	0.42
Absorbed in learning	0.46	0.45	0.50
Engaged at school	0.45	0.34	0.33
Confident at school	0.39	0.30	0.40
Internal markers of achievement	0.39	0.25	0.37
Positive attitude to science teacher	0.38	0.23	1
Positive learning environment - science	0.36	0.23	0.88
Challenging schoolwork	0.35	0.36	0.40
Supportive family	0.32	0.24	0.27
Family communicates well	0.31	0.24	0.26
Inclusive family	0.30	0.26	0.26
Positive attitude to maths teacher	0.25	1	0.23
Overall achievement	0.18	0.11	0.19
Positive learning environment - maths	0.18	0.87	0.18
Solid friendships	0.17	0.15	0.22
Responsible (parent view)	0.14	0.13	0.22
Disrupted learning environment	-0.13	-0.15	-0.19
Negative view of maths	-0.13	-0.43	-0.19
Friends with risky behaviour	-0.18	-0.19	-0.18
Negative view of science	-0.22	-0.19	-0.55
Risky behaviour	-0.23	-0.25	-0.19
Disengaged in learning	-0.38	-0.33	-0.39
Negative view of English	-0.49	-0.16	-0.29

That a student who shows enthusiasm about English does not necessarily show it about mathematics or science indicates different student interests; it may also indicate that less positive experiences in one subject need not colour views or participation in another (or, one poor teacher does not spoil all learning).

Negative views of subjects factors

Around two-thirds of the students showed confidence in the compulsory subjects, but between 14 percent (for English) and 21 percent (for science) would like to drop one of these subjects as soon as they could. The proportion of students who feel they are floundering is low overall, but twice as large in mathematics and science as in English.

Table 65 **Student agreement with items in the *negative views of subjects* factor**

	English	Maths	Science
	%	%	%
I'm confident I can master the skills taught (r)	68	68	66
I do well (r)	66	64	63
I plan to drop (subject) as soon as I can	14	16	21
I don't know how to do the work	8	15	15

r = reverse scored

Average scores on these factors were 3.8 (s.d. 1.6) for English, 3.9 (s.d. 1.9) for mathematics, and 4.1 (s.d. 1.9) for science. Lower average scores were evident for those with university-qualified mothers (3.3 for English, 3.2 for mathematics, and 3.5 for science). They were higher for those from low- and medium-income families for English (4.2 and 4.0), mathematics (4.4 and 4.3) and science (4.0), and for Māori for science (5.0). Females had higher average scores for negative views about mathematics (4.2) and science (4.3).

Motivation levels were inversely reflected in negative views of all three subjects; but high absenteeism was associated with higher average scores only for English (4.3). These clusters from the risk set showed higher average scores: the *electronic games~no strong interests* cluster for English (4.3) and mathematics (4.4). the *standing out* values cluster had higher average scores with regard to English (4.1) and science (4.5). Students whose family was comfortable financially had lower average scores for negative views of English (3.6). The creative interests group had lower average scores for negative views of science (3.6). Those who had experienced no adverse events over the past year also had lower averages for negative views of mathematics (3.7).

The correlations between this *negative view of subjects* factor and other factors are given in the table below. There are moderate levels of negativity across all three subjects. Note that negativity about subjects is not just associated with class and school experiences, including low levels of overall achievement, but also with higher levels of risk behaviour, and, to a lesser degree, lower levels of positive family interaction and relations.

The correlations between the *negative about mathematics* factor with other factors were often lower than the correlations with the *negative about English* and *negative about science* factors, indicating greater commonality between factors relating to those two subjects, though those who were negative about mathematics were more likely to be negative about science than they were about English. On the whole, English and science views seem to have more in common than with mathematics.

Table 66 ***Negative view of core compulsory subjects*** **factor correlations with other study factors**

Factor	Negative view of English correlation level	Negative view of maths correlation level	Negative view of science correlation level
Negative view of English	1	0.32	0.42
Disengaged in learning	0.46	0.35	0.42
Negative view of science	0.42	0.47	1
Negative view of maths	0.32	1	0.47
Friends with risky behaviour	0.23	0.28	0.31
Risky behaviour	0.23	0.28	0.27
Disrupted learning environment	0.19	0.18	0.24
Positive learning environment - maths	-0.14	-0.47	-0.19
Positive attitude to math teacher	-0.16	-0.43	-0.19
Responsible (parent view)	-0.22	-0.24	-0.20
Challenging schoolwork	-0.25	-0.20	-0.28
Positive learning environment - science	-0.27	-0.19	-0.57
Positive attitude to science teacher	-0.29	-0.19	-0.55
Supportive family	-0.31	-0.20	-0.29
Inclusive family	-0.32	-0.20	-0.26
Overall achievement	-0.34	-0.45	-0.38
Family communicates well	-0.35	-0.17	-0.26
Confident at school	-0.40	-0.32	-0.41
Absorbed in learning	-0.46	-0.47	-0.53
Internal markers of achievement	-0.48	-0.41	-0.44
Positive attitude to English teacher	-0.49	-0.13	-0.22
Engaged at school	-0.51	-0.41	-0.39
Positive learning environment - English	-0.52	-0.12	-0.23

Consistencies of dimensions within subjects

How consistent are these three dimensions to student experience of their three Year 9 or 10 compulsory subjects? Do students like teachers who provide positive learning environments? The simple answer is a strong yes—the strongest correlations we found between factors. Students are also inclined not to be negative about a subject and their work in it where there is a positive learning environment. These patterns are similar for all three subjects.

Table 67 **Correlations between subject dimensions**

Factor	Positive attitude to English teacher	Negative about English	Positive attitude to maths teacher	Negative about maths	Positive attitude to science teacher	Negative about science
Positive English learning environment	0.84	-0.46				
Positive maths learning environment			0.87	-0.43		
Positive science learning environment					0.88	-0.55

Disengaged in learning factor

Disengagement was more passive than active. Around a fifth of the sample thought they could do little work in their compulsory subjects, but only a tenth sought to annoy their teachers.

Table 68 **Student agreement with items in the *disengaged in learning* factor**

	English %	Maths %	Science %
I can get away with not doing much work	21	25	20
I muck around	20	18	20
We get too much homework	20	26	21
I don't like asking my teacher questions	19	17	17
I behave in a way that annoys the teacher	9	13	12
We keep doing the same things without learning anything new	9	12	9

The average score for the *disengaged in learning* factor was 4.3 (s.d. 1.2) on a scale of 10. Males had higher average scores (4.5), as did those from low- or medium-income families (4.6), Māori students (4.9), and students in decile 1–2 schools (5.0). In terms of the set of risk clusters, average scores for *disengaged in learning* followed motivation levels (3.7 for those with high motivation, increasing to 4.7 for those with low motivation) and absenteeism (4.9 for those with high levels, decreasing to 4.1 for those with low levels). Other groups with higher average scores were the *electronic games~no strong interests* cluster, the *standing out* values group, who were seen as difficult or introverted by their age-12 teachers, and who had had two or more adverse experiences over the past year.

Correlations with this factor showed the two patterns: those who had higher scores for their *disengagement in learning* were experiencing more disrupted and comparative learning environments. But they were also likely to be engaging in risky behaviour—attention elsewhere. This was accompanied by friction at home, and higher scores for a sense of disappointment (boredom and unsatisfactory interactions with others). Those who had lower scores for *disengagement in learning* were more likely to be experiencing positive learning environments, and positive interactions with family and friends—including praise and achievement in non-school spheres (one of the few occasions when this factor shows correlations with school-related factors).

Table 69 ***Disengaged in learning* factor correlations with other study factors**

	Positive correlations		Negative correlations
Disrupted learning environment*	0.50	Internal markers of achievement	-0.42
Negative about English*	0.46	Inclusive family	-0.41
Friends with risky behaviour*	0.45	Positive attitude to science teacher*	-0.39
Risky behaviour*	0.43	Positive learning environment in English	-0.38
Negative about science	0.42	Positive attitude to English teacher	-0.38
		Supportive family	-0.37
		Positive learning environment in science	-0.35
Comparative learning environment*	0.35	Solid friendships	-0.34
Negative about mathematics	0.35	Family communicates well	-0.33
Family pressure	0.30	Positive attitude to mathematics teacher*	-0.33
		Challenging schoolwork	-0.29
Dissatisfaction	0.25	Positive learning environment in mathematics	-0.28
Parent-child friction	0.25	Praise and achievement*	-0.18
		Close parent-child communication	-0.13

* variables included in regression model

A regression model that included the starred factors from this table (because they added to the model when they were included after others), and clusters that showed statistically significant relationships after maternal qualification and family income (age 14) were added to the model, accounted for 58 percent of the variability in *disengaged in learning* scores. See the separate technical report, Hodgen, Ferral, & Dingle (2006), for details of this model and others summarised in this report.

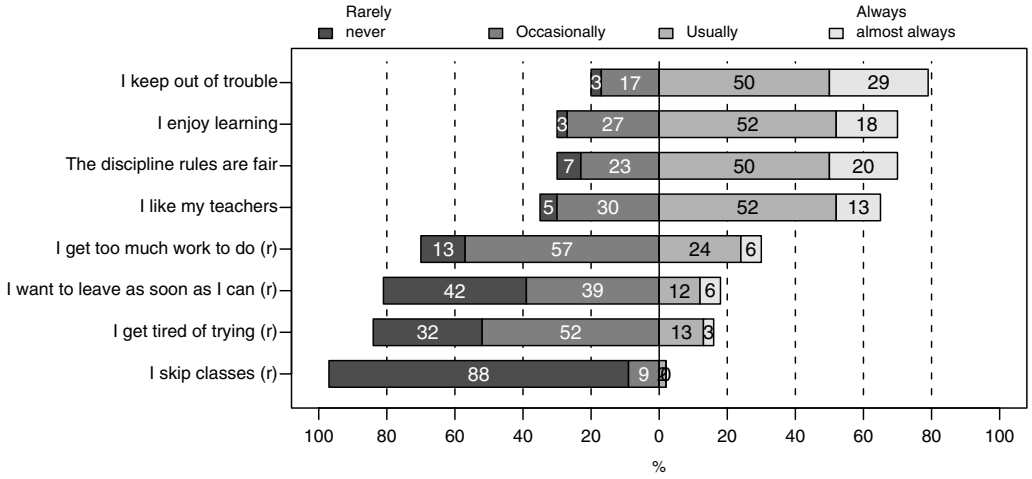
- Disrupted or comparative learning environments, student's risky behaviour, their being negative about English, and to a lesser extent, having friends with risky behaviour, were the main factors associated with being disengaged in learning.
- Being disengaged in learning was less likely for students who had anchored or anchored and achieving values, and to a lesser extent, had a positive attitude to their mathematics and science teachers, and experienced some praise and achievement over the past year (outside school as well as within).

Engaged in school factor

This factor brought together items about learning and schoolwork (a focus on work, and work levels). The stem of the items was "School is a place where.."

Year 9 and 10 students who appear to be wholly engaged in school (its work and its structure of work) are in the minority in this sample. Many have occasions when they are not engaged in school. About a third don't enjoy learning or teachers much; and a fifth were getting into trouble more than occasionally. However, the rate of skipping classes was low, even for those who were showing signs of not being engaged in school.

Figure 14 ***Engaged in school* factor items**



The average score for the *engaged in school* factor was 7.2 (s.d. 1.4) on a scale of 10. Average scores reflected maternal qualification levels (rising from 7.0 for those with non-qualified mothers to 7.6 for those with university-qualified mothers), family income levels (rising from 6.5 for those in low-income families to 7.4 for those in high- or very high-income families), and were lower for Māori students (6.6). School decile levels showed the lowest score at decile 1–2, though the differences with higher decile schools were not statistically significant. Average scores on this factor also followed motivation levels (not surprisingly, from 7.9 for those with high motivation to 6.5 for those with low motivation), absenteeism levels, and family financial situations (7.4 for those in comfortable situations, decreasing to 6.6 for those in difficult situations). Other risk set clusters to show lower average scores for their levels of engagement in school were the *electronic games~no strong interests* cluster, those whose parents had mixed interests, or TV~low involvement leisure interests, *standing out* values, who were seen as difficult by their age-12 teachers, and who had had two or more adverse experiences over the past year.

The positive correlations with positive subject learning environments, and challenge in the table below make sense. Those who score highly for their engagement in school are also likely to score highly in terms of their development of internal markers of achievement, the understandings and attitudes associated with lifelong learning. Engagement in school is also associated with positive family relationships, and friendships. Conversely, low scores for school engagement are more likely to occur where student energy is going instead to risky behaviour (but with higher levels of dissatisfaction as well); where there are negative family interactions; and where learning environments are disrupted, and to a lesser extent, comparative.

Table 70 ***Engaged in school*** **factor correlations with other study factors**

Factor	Positive correlations		Negative correlations
Internal markers of achievement*	0.50	Risky behaviour*	-0.54
Positive learning environment in English*	0.45	Negative about English*	-0.51
Positive attitude to English teacher	0.45	Friends with risky behaviour	-0.45
Inclusive family*	0.41	Negative about mathematics*	-0.41
Supportive family	0.40	Negative about science	-0.39
Positive attitude to mathematics teacher	0.34	Parent-child friction*	-0.29
Positive attitude to science teacher	0.33	Family pressure	-0.29
Family communicates well	0.33	Disrupted learning environment	-0.28
Positive learning environment in mathematics	0.32	Dissatisfaction	-0.24
Positive learning environment in science	0.30	Comparative learning environment*	-0.16
Challenging schoolwork	0.27		
Solid friendships	0.24		
Close parent-child communication	0.18		

* variables included in regression model

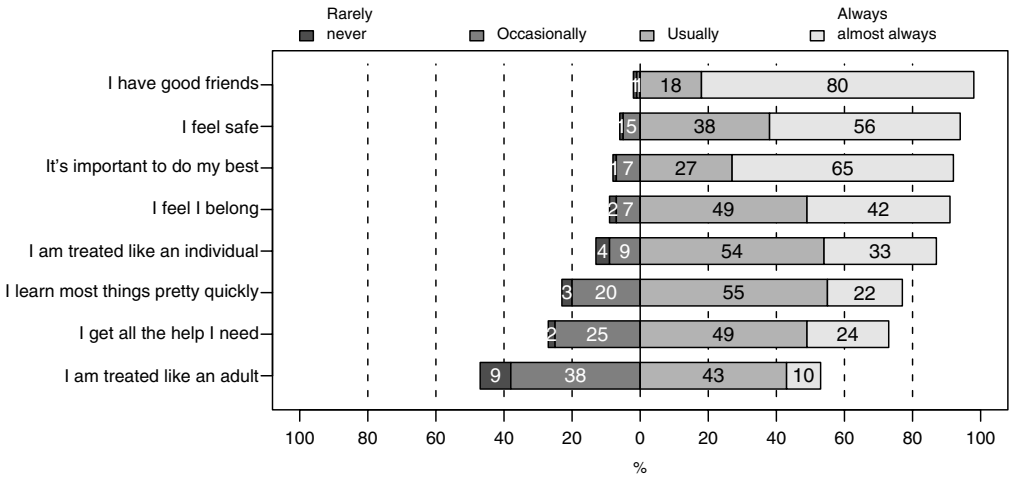
A regression model that included the starred factors from this table (because they added to the model when they were included after others), and clusters that showed statistically significant relationships after maternal qualification and family income (age 14) were added to the model, accounted for 55 percent of the variability in student scores for *engagement in school*.

- A positive learning environment in English, and to a lesser extent, using internal markers of achievement and having an inclusive family were the factors that were most positively related to student engagement at age 14.
- Risky behaviour and experiencing two or more adverse events over the past year were the two aspects that were most negatively related to student engagement in school at age 14.

Confident at school factor

This factor brought together items that expressed feelings of belonging, safety, and being respected in the school environment. It was rare for the sample when they were Year 9 and 10 students to feel they did not belong at school, feel unsafe, not treated as an individual, or to lack friends. Like other worlds, school was not perfect: students were more likely to feel usually confident and supported at school, rather than always.

Figure 15 ***Confident at school* factor items**



The average score for the *confident in school* factor was 7.7 (s.d. 1.2) on a scale of 10. Average scores reflected family income (7.5 and 7.4 for those with low or medium family incomes respectively, and 7.8 for those with high or very high family incomes), and school decile (7.2 for those in decile 1–2 schools). In terms of the risk set of clusters, we found similar (but not identical) patterns as we found for the *engaged in school* factor: a reflection of motivation levels; lower average scores for those in difficult family financial situations, the *electronic games~no strong interests* cluster, those whose parents had mixed interests, or TV~low involvement leisure interests, *standing out* values, who were seen as introverted by their age-12 teachers (it was being seen to have difficult school behaviour at age 12 that was more correlated with the factor of school engagement), and who had had two or more adverse experiences over the past year. Absenteeism rates were not related to levels of confidence in school.

We see similar patterns of correlations as we saw with the *engaged in learning* factor.

Table 71 ***Confident at school*** **factor correlations with other study factors**

Factor	Positive correlations		Negative correlations
Internal markers of achievement*	0.57	Negative about science*	-0.41
Inclusive family*	0.49	Negative about English	-0.40
Supportive family	0.46	Risky behaviour	-0.33
Positive learning environment in English*	0.43	Dissatisfaction*	-0.32
Solid friendships*	0.43	Friends with risky behaviour	-0.32
Positive attitude to science teacher	0.40	Negative about mathematics	-0.32
Positive learning environment in science	0.39	Family pressure	-0.25
Positive attitude to English teacher	0.39	Disrupted learning environment	-0.24
Challenging schoolwork	0.38	Parent-child friction	-0.23
Family communicates well	0.37	Comparative learning environment	-0.16
Positive learning environment in mathematics*	0.30		
Positive attitude to mathematics teacher	0.30		
Praise and achievement	0.19		
External markers of achievement	0.18		
Close parent-child communication	0.17		

* variables included in regression model

However, the factors and clusters that seemed most closely related to scores for confidence in school were somewhat different. Risky behaviour did not stay in the regression model that accounted for 51 percent of the variability in scores for this factor; solid friendships did stay in this model.

- Internal markers of achievement, solid friendships, and to a lesser extent, a positive learning environment in English and an inclusive family were the factors most positively related to scores for confidence at school.
- Involvement in bullying at least twice over the past 5 years, and to a lesser extent, feeling dissatisfied with life were the factors most negatively related to scores for confidence at school.

ATTENDANCE

Using the varied range of data from schools, we grouped the age-14 students into three categories of absenteeism. We could not classify 15 percent of the sample, because the information from the schools was unclear. (Different schools use different methods of counting attendance or absence, e.g. by term or year; half day or whole day; counting attendance or counting absence, and it was difficult to work out what the days mentioned related to in some cases.) Of those for whom we could classify, we found three groups:

- "low" (absent up to 5 percent of the time, or up to 2 weeks): 53 percent;
- "medium" (absent between 5–12.5 percent of the time, or between 2–5 weeks): 35 percent; and
- "high" (absent over 12.5 percent of the time, or over 5 weeks): 12 percent.

Patterns of absenteeism were the same for Year 9 and Year 10 students, and were unrelated to gender or ethnicity. Students with non-qualified mothers were more likely to have high absence rates (24 percent), and those with university-qualified mothers, more likely to have low absence rates (62 percent). In relation to family income, those from low-income homes (both current, and early) were also more likely to have high absence rates.

Absenteeism was also related to motivation (those who had high motivation were most likely to have low absenteeism, 68 percent), and those with low motivation were more likely to have high absenteeism, 17 percent). Those with high absenteeism rates had lower average scores for the factors *engaged at school* and *overall achievement*, and correspondingly, higher averages for *disengaged in learning, negative about English*, and *negative about science*. Their average scores were also lower for the factors p*ositive learning environment—science, positive attitude to teacher—science,* and *absorbed in learning.*

High absenteeism rates were also more evident among students at low-decile schools (27 percent cf. 11 percent of those at medium- and high-decile schools), and among those who had mainly attended decile 1–2 schools since age 8 (20 percent).

It was related to out-of-school activities, with higher absenteeism among the *electronic games~no strong interests* group, and the *creative interests* group than among the *sports players* or the *all-rounders*. Those with high absenteeism had higher average scores for the factor *risky friendships,* and *parent-child friction,* and lower average scores for the factors *responsible (parent view)* and *effective (parent view)*.

Those with low absence rates had higher average scores for the *challenging schoolwork* factor, and lower average scores than those with either medium or high absence rates for the *risky behaviour* factor, and for *student hindrances to learning in whole-year group (form teacher/dean view)*.

Students who were considered difficult by their age-12 teachers were over-represented among those who had high absenteeism at age 14 (42 percent, where they were 22 percent of the sample); so too were those whose teachers at ages 10, 12, and 14 said they did not usually complete homework (26 percent, where this group was 4 percent of the sample).

We found that absenteeism at age 14 could not be predicted from earlier competency levels. However, we do find a consistent gradient at age 12: the lower the absence rate, the higher the previous competency scores (other than for logical problem solving, where there was no difference between the low and medium absence groups, although both these groups had higher scores than the high absence group).[16]

The high absence group at age 14 also has, on average, consistently lower scores on the attitudinal composite from age 8, and on the cognitive competencies at ages near-5 and 6. It could be that early grasping of the work of school has some bearing on attitudes shown at school from age 8; and that both of these have some bearing on later attendance. This is consistent with what we found when we analysed the relationship between the attitudinal and cognitive competencies over time: that while the attitudinal competencies (particularly communication, perseverance, and curiosity) contribute to the cognitive competencies at the same age, the reverse occurs when we look at patterns over time (Wylie, with Ferral, 2006). The cognitive competencies at one age contribute to both the cognitive and attitudinal competencies at later ages. The attitudinal competencies at one age also contribute to attitudinal competencies at later ages.

[16] Full details of the findings summarised here are given in the age-14 technical report.

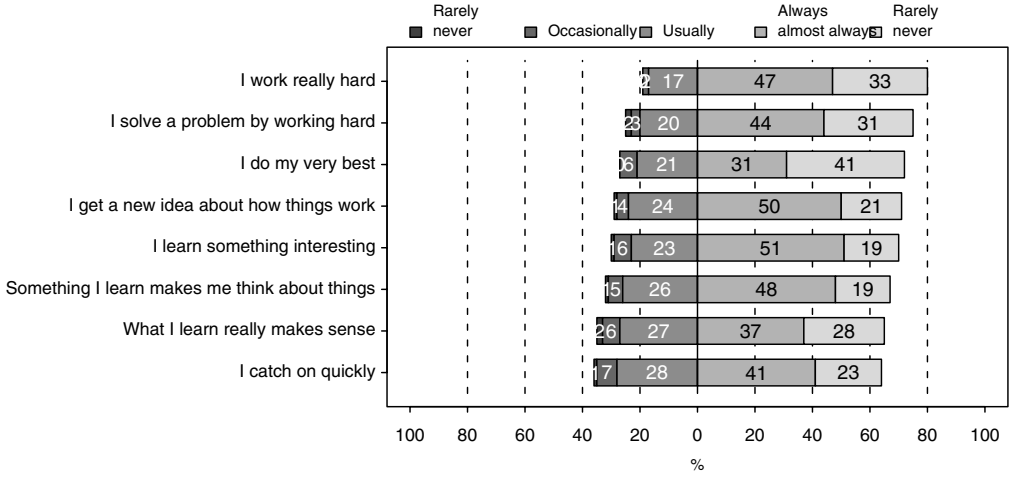
UNDERSTANDING LEARNING

It is important that students gain understandings of learning that allow them to learn outside and beyond school. We asked students to respond to a set of items on how they knew they were doing well at school, to see whether they used effort and internal markers of achievement, which support the development of intrinsic motivation, or whether they were more reliant on external markers, on how well they were doing in comparison to others.

Internal markers of achievement factor

This factor indicates the use of "intrinsic" approaches to learning: the importance of individual effort, and the sense that learning is about understanding. Most of the students continued to see effort as integral to doing well at school; and reasonable proportions also felt they were doing well at school if they understood something new, or to a deeper level than before.

Figure 16 ***Internal markers of achievement* factor items**



The average score for this factor was 7.5 (s.d. 1.4) on a scale of 10. Average scores increased with the level of maternal qualification (from 7.3 for students with non-qualified mothers to 7.9 for those with university-qualified mothers); and reflected family income levels (7.2 and 7.3 for those in low- and medium-income families, and 7.8 and 7.7 for those in high- and very high-income families). It was unrelated to gender and ethnicity. There were lower average scores for those in the risk cluster set, other than for high absenteeism and mixed parent interests.

This factor had a wide range of correlations, including family and friends: those who were developing the skills and attitudes that would support lifelong learning, were doing so within a context of positive experiences and relationships in all three of the main spheres of their life.

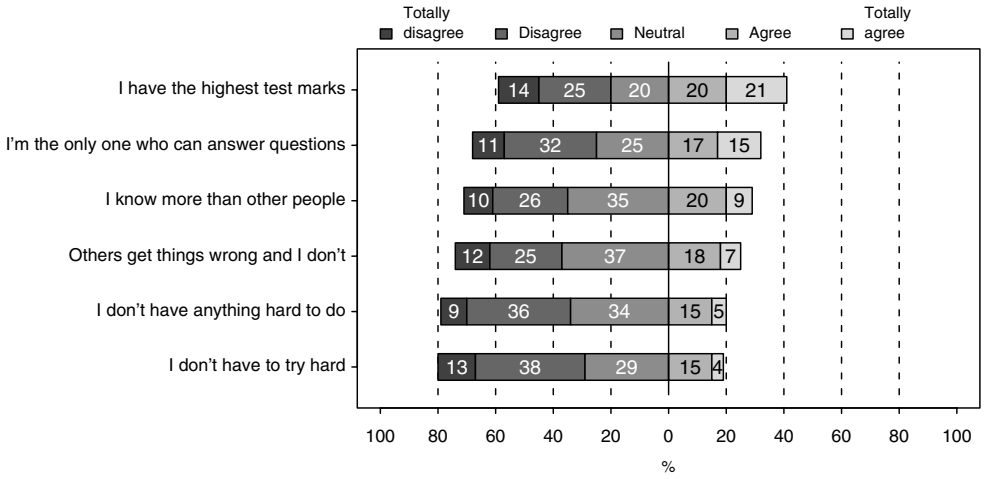
Table 72 ***Internal markers of achievement*** **factor correlations with other study factors**

Factor	Correlation level
Absorbed in learning	0.58
Confident at school	0.57
Engaged at school	0.50
External markers of achievement	0.49
Positive learning environment – English	0.43
Overall achievement	0.40
Positive attitude to English teacher	0.39
Challenging schoolwork	0.37
Positive attitude to science teacher	0.37
Family communicates well	0.37
Positive learning environment – science	0.36
Supportive family	0.36
Responsible (parent view)	0.29
Effective behaviour (parent view)	0.26
Positive learning environment – mathematics	0.26
Positive attitude to English teacher	0.25
Solid friendships	0.23
Parent-child friction	-0.20
Friends with risky behaviour	-0.24
Risky behaviour	-0.32
Negative view of mathematics	-0.41
Disengaged in learning	-0.42
Negative view of science	-0.44
Negative view of English	-0.48

External markers of achievement factor

Some of the items in this factor relate to extrinsic approaches to learning: the spur of measures outside the individual. However, probably because we asked about everyday measures and use, this factor also seems to reflect student views of their comparative achievement, and not simply what they use. Partly because of this, most of the sample did not say that this was how they felt they were doing well at school.

Figure 17 ***External markers of achievement* factor items**



The average for this factor was 5.1 (s.d. 2) on a 10-point scale. Family income was the only social characteristic associated with using external markers to gauge school progress, with similar averages among those with non-qualified or trades-qualified mothers (4.9). This factor was not related to most of the risk clusters. Exceptions were: low motivation (4.7 average) and the Tech Arts Māori subject cluster (4.5). The few correlations that this factor had with others support the view that the factor reflected student views of their progress in subjects.

Table 73 ***External markers of achievement* factor correlations with other study factors**

Factor	Correlation level
Internal markers of achievement	0.49
Overall achievement	0.35
Negative view of English	-0.17
Negative view of mathematics	-0.25
Negative view of science	-0.26

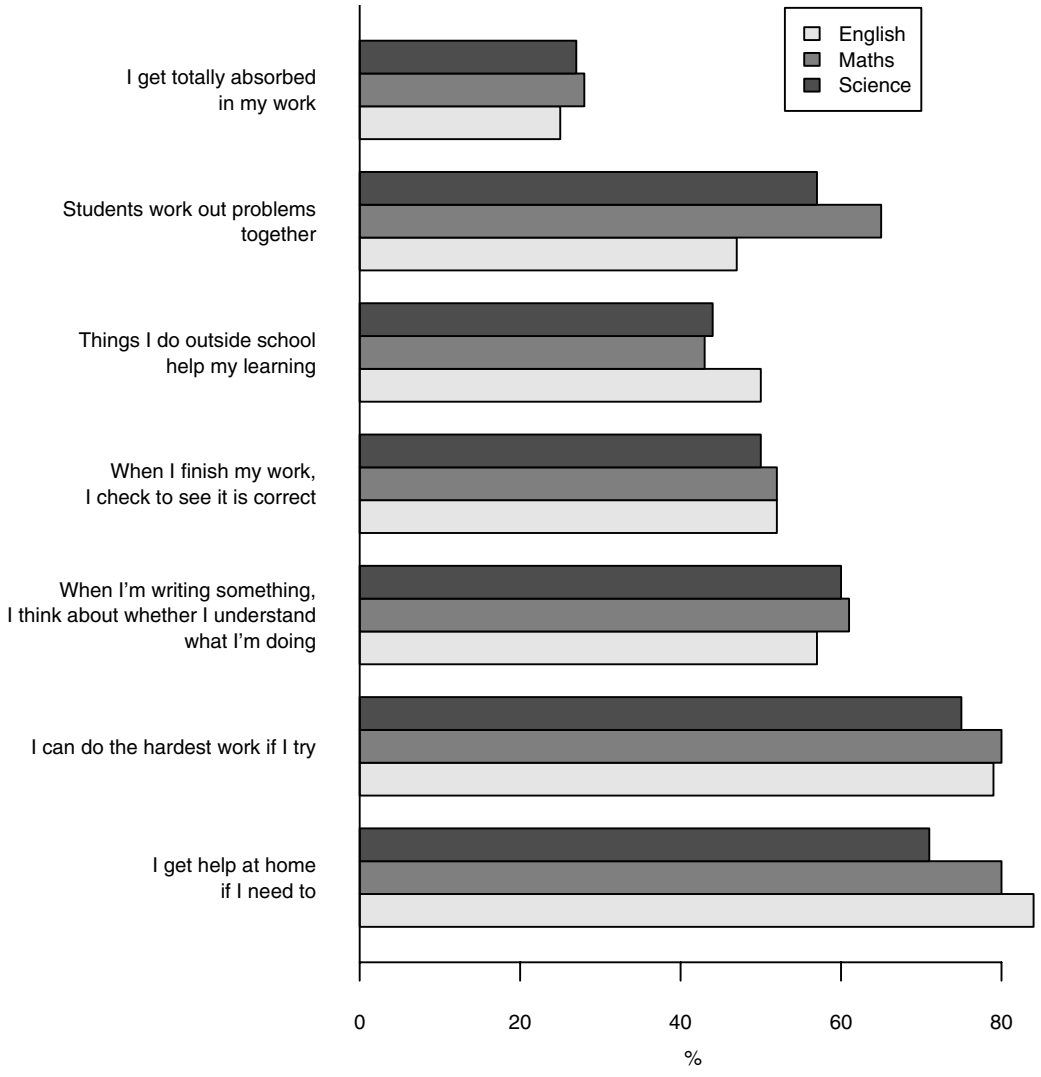
Absorbed in learning factor

This factor brought together various activities in classrooms and a sense of connection with things outside school that seemed to point to taking learning seriously. The factor drew from student responses in relation to English, mathematics, and science. Overall, these gave very similar pictures. The correlations between them—indicating how closely individual responses were matched—were moderately strong: 0.61 between English and mathematics, 0.60 between mathematics and science, and 0.65 between English and science.

In the figure below, we give the proportion of students who agreed or strongly agreed with the items in this factor, by subject.

Around half the sample was thinking about whether something made sense to them as they worked, checking their work once completed, and working out problems as groups. About a quarter said they got totally absorbed in their work.

Figure 18 ***Absorbed in learning* factor items**



The average score for this factor was 6.8 (s.d. 1.1) on a scale of 10. Family income was the only social characteristic associated with it (young people from low-income families had lower average scores of 6.4). Those in the risk clusters had lower scores, but not for those in the mixed parent interest, those whose teachers saw difficult behaviour at age 12, those who had experienced two or more adverse events, or the Tech Arts Māori subject cluster.

Correlations with the other factors showed similar patterns as the correlations with the *internal markers of achievement* factor, but with stronger positive correlations with the *learning environments* and *attitudes to teachers* factors. Family communication, support, and inclusion were slightly less important than these. Again, we see a different pattern for those who have low scores on this factor: a lack of absorption in learning is likely to also be accompanied by negativity about the subjects (including the desire to give them up as soon as possible), and attention going elsewhere: to risky behaviour, and friends with risky behaviour.

Table 74 ***Absorbed in learning* factor correlations with other study factors**

	Positive correlations		Negative correlations
Internal markers of achievement*	0.58	Negative about science*	-0.53
Positive learning environment in science*	0.57	Negative about mathematics*	-0.47
Positive learning environment in English*	0.52	Negative about English	-0.46
Positive attitude to science teacher	0.50	Risky behaviour*	-0.37
Positive learning environment in mathematics*	0.50	Friends with risky behaviour	-0.33
Challenging schoolwork	0.49	Disrupted learning environment	-0.18
Positive attitude to English teacher	0.46	Dissatisfaction	-0.18
Family communicates well*	0.45	Parent-child friction	-0.18
Positive attitude to mathematics teacher	0.45	Family pressure	-0.14
Supportive family	0.41		
Inclusive family	0.39		
Solid friendships	0.26		
Praise and achievement	0.19		
Close parent-child communication	0.18		

* variables included in regression model

Factors that remained in a regression model that accounted for 66 percent of the variance in young people's scores for being *absorbed in learning* are starred in the table above. In addition, we included eight clusters (those in the risk set, other than attendance and motivation, plus historical and current bullying). Only the *standing out* value cluster remained in the model (contrasting with the *anchored and achieving* group, but not the *anchored* group).

- Positive learning environments in the three compulsory subjects, the use of internal markers of achievement, and having *anchored and achieving* values, and to a lesser extent, the family communicating well, showed positive relations with being absorbed in learning.
- Risky behaviour, and negativity about mathematics and science showed negative relations with being absorbed in learning.

Common trends in relation to engagement and disengagement

When we look at the main factors related to levels of *absorbed in learning* that emerged from the regression model with those that emerged from the regression models for the other three aspects of engagement in learning, we see two somewhat different trends. The factors that are positively associated with engagement in learning are not the exact mirror opposite of those that are associated with higher scores for being disengaged in learning and school. Being disengaged in school is not simply a matter of not having positive learning environments, or different values. Being engaged in school is not simply a matter of having non-disrupted classes, or classes where students' achievement is continually compared. Nor are students simply passive recipients or lodgers in particular contexts.

Table 75 **Main factors associated with aspects of engagement in learning**

Engagement in school	Absorbed in learning	Confident at school	Not disengaged
Positive learning environ – English	Positive learning environ – all	Positive learning environ – English	
Internal markers of achievement	Internal markers	Internal markers	
Inclusive family		Inclusive family	
	Anchored; Anchored & achieving		Anchored & achieving
	Family communicates well		
		Solid friendships	
			Positive attitude to mathematics and science teachers

Table 76 **Main factors associated with aspects of disengagement in learning**

Engagement in school – negative	Absorbed in learning – negative	Confident at school – negative	Disengaged in learning
			Disrupted learning environment
			Comparative learning environment
Risky behaviour	Risky behaviour		Risky behaviour
	Negative about mathematics, science		Negative about English
2 or > adverse events in past year			Friends with risky behaviour
		Experiences of bullying in past 5 years	
		Disappointment	

The attitudes and values and practices of those who are engaged or absorbed in learning are likely to have taken some time to develop—and vice versa. Two of our research questions are relevant here.

Research question 2: Do earlier literacy and numeracy performance have more of a bearing than earlier levels of social skills, perseverance, communication, and individual responsibility on age-14 competency levels17, learning engagement, school attendance, and the out-of-school activities which are positively associated with competency levels?

Previous competency levels alone do not provide a good prediction of learning engagement at age 14. However, there are some suggestive trends, particularly in relation to previous mathematics and attitudinal scores, where there are associations as far back as ages near-5 and 6. In models including both attitudinal and cognitive competencies, the attitudinal composite was the one that appeared to have the strongest association with current levels of engagement. The aspects of learning engagement that have the strongest relationship with earlier competency levels are *disengagement at school, absorbed in learning, feeling negative about mathematics,* and *feeling negative about science.*

Table 77 below shows patterns over time. It is the *consistency* of these observations that is interesting, rather than the strength of the association at any one particular time point. We need to remember that at ages near-5 and 6, the sample size was much smaller than at later phases. This makes associations from the early data harder to isolate, and could, along with the increased time lag, account for there being less to report from these phases.

Table 77 **Association of earlier competency levels with current engagement**

Engagement factor	Previous scores	near-5	6	8	10	12
Engaged at school	Mathematics	*	*	*	*	
	Reading					*
	Logical problem solving					
	Attititudinal composite		*	*	x	**
Disengaged in learning	Mathematics		*	*		
	Reading					
	Logical problem solving		*			
	Attititudinal composite		*	*	**	**
Absorbed in learning	Mathematics				*	*
	Reading			*	*	*
	Logical problem solving				*	
	Attititudinal composite		*	*	*	*
Negative about mathematics	Mathematics	*	*	**	*	**
	Reading					
	Logical problem solving		*			
	Attititudinal composite					
Negative about science	Mathematics		*			*
	Reading			*	**	*
	Logical problem solving					
	Attititudinal composite					
Negative about English	Mathematics					
	Reading			*		*
	Logical problem solving			*		
	Attititudinal composite	*	*	*	x	**

* moderate effect observed
** strong effect observed

[17] The relationship with age-14 competency levels was addressed in the first report in this phase.

There is notable consistency in the attitudinal scores being associated with *engaged at school, disengaged in learning, absorbed in learning,* and *negative about English.* The table shows two "holes" in the line of asterisks, marked with "x". One is at age 10 for *engaged at school*, and the other is at age 10 for *negative about English*. The interpretation of these holes is not easy in the light of the consistency of the results for other phases. It may be that at age 10 something is "going on" in the children's development, or it could be due to sample anomalies and/or noisy data at this particular phase for these particular associations. It is more likely to be the latter.

There is also consistency over time in the earlier mathematics scores being associated with *engaged at school*, and *negative about mathematics*. Reading scores show consistent associations with *absorbed in learning,* and *negative about science* from age 8 onwards. There is also another speculative "hole" at age 10 for the association between reading and *negative about English.*

Research question 7: How are earlier competency levels in perseverance, communication, and individual responsibility, parent and teacher reports of dispositions and ability to cope with problems, related to competency levels at age 14 and attitudes to school, including motivation, attendance, and engagement?

This analysis included the "history" variables, as well as family resources. Here we look at what we found about patterns related to engagement in school. We found correlations at a weak level with earlier attitudinal competency scores, teacher reports of student behaviour at age 12, and the history factors related to enjoyment of reading, feelings about school, amount of TV watching, experiences of being upset and coping, and parents and teachers working together on concerns. The model accounted for 24 percent of the variability in the *engaged in school* factor scores.

- Positive factors: Always enjoying reading, always enthusiastic about school, introvert or being good/organised school behaviour, and curiosity score at age 12.
- Negative factors: Not enjoying reading over the ages 8–14, and being unhappy about school at least once over the ages 8–14.

There were fewer correlations with earlier attitudinal competency scores for the *Absorbed in learning* factor, and the model that resulted accounted for only 6 percent of the variability in scores.

- Positive factor: Always enjoying reading; being good, or organised school behaviour at age 12.
- Negative factor: Not enjoying reading across ages 8–14.

Ten percent of the variability in the *confident at school* score was explained by the perseverance at 12 score, and history of enjoyment of reading—though this time, those who had consistently not enjoyed reading had scores that were much the same as those who had enjoyed it throughout. Those who had mixed responses over the years about their enjoyment of reading had lower scores than those who always enjoyed it, perhaps signalling both the key role played by reading in schoolwork—but also, for those who do not enjoy reading, other avenues for feeling confident.

Twelve percent of the variability in the *disengaged in learning* score was explained by individual responsibility (self-management) scores at 10 and 12, the good/organised score at age 12, and history of enjoyment of reading.

On the one hand, the signals from these models are weak: not much of the variability in age-14 learning engagement is accounted for. On the other, the signals are reasonably consistent with the picture emerging from looking at relationships with what was currently happening in students' lives. If we hope to head off disengagement in school at age 14, we have to think about the earlier experiences and development of skills and pleasure (habits) that are related to school-related practices, so that there is not a vacuum waiting to be occupied by other things that become available to young adults as they test what it means to be independent.

We also analysed students' use of external or internal markers of achievement, their attitudes to their teachers, their views of the three core compulsory subjects, and their views of their current learning environments in these subjects to see if they reflected differences in prior attitudes and the two leisure habits. Very little of the variability found in students' attitudes to their current teachers was accounted for by these earlier factors (usually around 2–3 percent) indicating that student reaction is not preset: that what teachers do matters.

Students' own models of progress show more association, as one might expect (14 percent for internal markers of achievement, 9 percent for external markers of achievement). The factors that do remain in the models are consistent with the patterns reported above, with some interesting additions related to social skills.

Curiosity age 12 (positive attitude to English and science teacher, negative attitudes to science and mathematics, both internal and external markers of achievement)

Perseverance age 12 (positive attitude to mathematics teacher, negative attitude to mathematics, positive learning environment in English)

Perseverance age 12 (use of external markers of achievement)

Good/organised class behaviour age 12 (positive attitude to English teacher, use of internal markers of achievement)

Enjoyment of reading (use of internal and external markers of achievement; inversely related to negative views of English and science, disrupted learning environment)

Social skills with peers age 8 (positive views of science)

Social skills with teachers age 12 (disrupted learning environment)

MOTIVATION

Staying at school

Most of this sample thought they would stay on at school until the end of Year 13 (84 percent). Eight percent thought they would leave school at the end of Year 12, and 3 percent at the end of Year 11, or as soon as they could. Four percent were unsure.

There were no gender or ethnic differences here. Nor, perhaps surprisingly, did maternal qualification play a role.

Family income was the social characteristic that was associated with different patterns here. The proportion of students who saw themselves staying at school until the end of Year 13 was 69 percent of those from low-income homes, 77 percent of those from medium-income homes, 89 percent of those from high-income homes, and 92 percent of those from very high-income homes.

Where school leads

Staying on till the end of Year 13 was not necessarily intended to lead into further study. Just over a third wanted to go straight into a job.

Table 78 **Age-14 thoughts about most desired immediate post-school destination**

Destination	Age 14 (*n* = 475) %
Further study	64
Job	39
Travel	12
Don't know	7
Break year	1
Have a family	1

* Some gave more than one destination, so the numbers add to more than 100 percent.

Getting a job appealed to males much more than females: 48 percent cf. 29 percent. Further study and travel appealed somewhat more to females, but the differences were relatively small. Pākehā/European and Asian were more inclined to be thinking of further study (66 percent cf. 51 percent of Māori and Pacific students).

Not surprisingly, family income levels were linked to immediate post-school plans. The very high-income group was not only likely to undertake further study, but also most likely to travel.

Table 79 **Desired immediate post-school destination in relation to family income**

Destination	Low income (*n* = 58) %	Medium income (*n* = 122) %	High income (*n* = 150) %	Very high income (*n* = 123) %
Further study	48	57	71	71
Job	47	41	39	32
Travel	7	7	11	22
Don't know	10	13	3	5
Break year	5	3	4	4
Have a family	0	1	1	0

* Some gave more than one destination, so the numbers add to more than 100 percent.

There were similar patterns in relation to maternal qualification levels. The group whose mothers were university-qualified was least likely to be looking at work, and most likely to be looking at travel.

Table 80 **Desired immediate post-school destination in relation to maternal qualification**

Destination	Non-qualified mother (*n* = 65) %	Trades-qualified mother (*n* = 235) %	Tertiary-qualified mother (*n* = 86) %	University-qualified mother (*n* = 85) %
Further study	52	63	67	72
Job	43	42	41	26
Travel	6	11	11	21
Don't know	11	6	8	6
Break year	6	4	5	1
Have a family	2	1	0	0

* Some gave more than one destination, so the numbers add to more than 100 percent.

Parental aspirations

Fifty-two percent of the young people's parents wanted them to receive a university education, much the same as 2 years earlier. Twenty-four percent mentioned other tertiary education. Forty-six percent also said it was up to their child. The ethnic differences evident at age 12 were no longer evident now: Māori parents were as likely as others to want their child to continue their education after school. Perhaps this change is linked to the *te Mana* campaign.

Obstacles to their child getting the kind of education they would like for the child were usually located in the child: their own desire or choice (31 percent), their attitude (15 percent), or limited ability (6 percent). However, 17 percent mentioned money.

While parents of females had similar aspirations for their educational future as males, they were more likely to see money as an obstacle (22 percent cf. 12 percent). Saving for their future education did not occur more for females, however. Parents of males were more likely to mention as obstacles their son's choice or limited ability.

Thirty-eight percent were saving for their child's tertiary education, and 5 percent mentioned someone else who would contribute.

Motivation cluster

So that we could categorise the students in broad groups in the statistical models, we undertook a cluster analysis of their answers about what they wanted to do when they left school, their and their parents' views about the kind of work they thought they might do, the values they thought would be important to them as adults, how long they thought they would stay at school, whether or not they thought they would gain knowledge useful for their future in the three compulsory subjects (English, mathematics, science), and their parents' expectations that they would do well at school, and their aspirations for their post-school education. This showed three clusters, with some distinct differences between them.

- University-professional orientation—high faith in gains from school: 28 percent of the sample were in this cluster, which we have termed the "high" motivation group.
- Unsure about gains from school, and future goals: 38 percent of the sample were in this cluster, which we have termed the "unsure" motivation group.
- Skilled/unskilled occupation orientation—low level of faith in gains from school: 34 percent of the sample were in this cluster, which we have termed the "low" motivation group.

Gender, ethnicity, and year level were unrelated to these groups. Not surprisingly, maternal qualification and family income levels did show some different patterns, particularly for the high and low motivation groups. Low family income seems to deter high motivation somewhat more than low maternal qualification levels. We see similar patterns in relation to school peer mix (using school decile as an indicator), with lower motivation levels for students at decile 1–2 schools.

However, it is worth noting that high motivation levels are not universal among the social groups who are seen as most advantaged in relation to education.

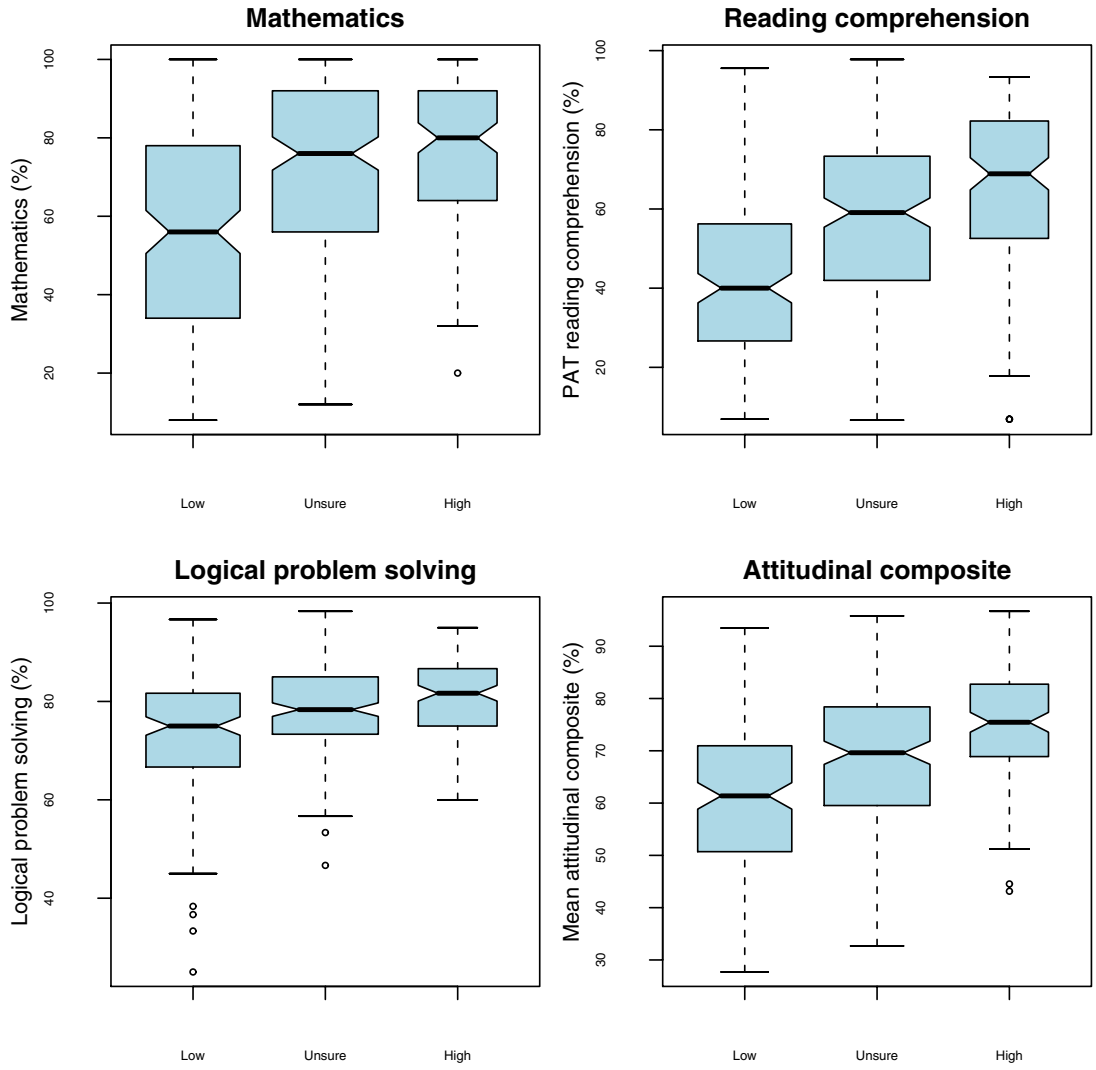
Table 81 **Motivation levels, by maternal qualification, family income level, and school decile (school peer mix)**

	High	Unsure	Low
Maternal qualification			
Non-qualified mother	20	28	52
Trades-qualified mother	25	39	36
Tertiary-qualified mother	36	42	22
University-qualified mother	36	40	24
Family income			
Low	12	36	52
Medium	23	33	44
High	38	37	25
Very high	31	46	23
School decile–School peer mix			
Decile 1–2	13	25	63
Decile 3–8	31	32	37
Decile 9–10	28	45	26

Only 14 percent of those whose family financial situation was difficult were in the high motivation group cf. 33 percent of those whose family financial situation was comfortable.

Differences in motivation levels also reflect current differences in competency levels.

Figure 19 **Motivation levels and cognitive competencies**



We looked at whether the scores for these three groups differed at previous phases, for mathematics, reading, logical problem solving, and the attitudinal composite.

Previous scores on their own cannot accurately predict cluster membership at age 14 (whether an individual will be highly motivated, for example). But there are trends over time indicating that motivation in the first 2 years of secondary school could be partly influenced by earlier mastery of knowledge, skills, and attitudes. The cognitive competencies seemed to have a somewhat stronger relationship to motivation than the attitudinal.

- Average scores in the low motivation group were consistently lower than those for the other groups for mathematics and reading, from age near-5, lower than the other groups for logical problem solving from age 8, and for the attitudinal composite from age 6.
- Those in the high motivation group had, on average, higher reading scores from age 8 onwards than those whose motivation is unsure, and consistently higher average attitudinal scores from age 10. They also had higher average attitudinal scores at age 6, but not at age 8.

We used two different statistical methods to point to the current variables that were most closely associated with the three different levels of motivation. Classification tree modelling correctly placed 59 percent of the students in their particular motivation cluster, and discriminant analysis, 60 percent.

The variables that were useful in both models were:

- Family communicates well
- Friends with risky behaviour
- Negative about all of English, mathematics, and science
- Positive attitude to English teacher
- Positive attitude to science teacher
- Positive learning environment in science
- Risky behaviour
- Students' leisure activities
- Parent interests
- Subject choice cluster.

The most important variables in the classification tree model were internal markers of achievement, and for those with high scores on this variable, being negative about science.

Comparing those with low levels of motivation and those with high levels, the discriminant analysis showed that those who were "all-rounders" who used their leisure for reading/arts/sports, came from moderate or comfortable family financial situations, had anchored values, were doing arts and Māori, had high scores for the factors of solid friendships (and somewhat surprisingly) dissatisfaction and positive attitude to English teacher, were more likely to be classified in the high motivation group.

Those who had high scores for risky behaviour, challenging schoolwork, or being negative about their three compulsory subjects were more likely to be classified in the low motivation group.

When we looked at motivation in relation to patterns over time, we found that motivation levels were lower for those who:

- did not enjoy reading (this is particularly striking: 57 percent cf. 18 percent of those who enjoyed reading across the ages 10–14 had low motivation levels at age 14);
- mostly did not finish their homework at ages 10, 12, and 14;
- had experiences of bullying for at least two phases over the age 10–14 period; and
- low motivation levels were also associated with higher abstenteeism.

SUMMARY

There are two main patterns evident in student engagement at age 14. Around two-thirds enjoy learning, and show engagement in school. They were more likely to report that they had clear, helpful teachers who gave useful feedback on student work, than to report that they had teachers who seemed to pitch the work so it seemed relevant to the students, and showed interest in their students' ideas. Around a third do not find school engaging.

Just over half the sample had high attendance (less than 10 days absence over the year). Thirty-five percent were absent for between 2 to 5 weeks, and 12 percent, for more than 5 weeks. Absenteeism was related to patterns of disengagement in learning, but risky behaviour, values, and disrupted or comparative learning environments carried more weight, suggesting that tackling absenteeism needs to address a number of dimensions.

There are precursors to high absenteeism. The high absence group at age 14 has consistently lower scores on the attitudinal composite from age 8, and on the cognitive competencies at ages near-5 and 6. It could be that early grasping of the work of school has some bearing on attitudes shown at school from age 8; and that both of these have some bearing on later attendance.

Most of this sample thought they would stay on at school until the end of Year 13 (84 percent). Eight percent thought they would leave school at the end of Year 12, and 3 percent at the end of Year 11, or as soon as they could. Four percent were unsure. Staying on till the end of Year 13 was not necessarily done to lead into further study. Just over a third wanted to go straight into a job.

We found three groups among the sample when we looked at a range of answers to questions about the current value of school, and adult aspirations to get a summary picture of individual motivation towards school. At age 14, only a minority have a high motivation level.

- The "high" motivation group had high faith in gains from school, and a university-professional orientation (28 percent).
- The "mid" group was less sure about the gains from school, and their future goals (38 percent).
- The "low" group had a low level of faith in gains from school, and was oriented toward skilled and unskilled work (34 percent).

Motivation levels were more likely to be high for those with high family incomes, and tertiary- or university-qualified mothers; but they were not universal among these advantaged groups. Motivation levels reflected current differences in competency levels. They also showed links with past competency levels, back as far as age near-5 for mathematics and reading; and with patterns from age 10 of enjoyment of reading, homework completion, and experiences of bullying.

Around two-thirds of the students showed confidence in the compulsory subjects, but between 14–21 percent would like to drop one of the subjects as soon as they could. The proportion of students who feel they are floundering is low overall, but twice as large in mathematics and science as in English. Mathematics and science were seen as having more challenging work than English classes. Otherwise, English and science classes seemed to have more in common than with mathematics classes.

Overt comparison with other students, not common in the sample's classes, did not appear to contribute to either positive learning environments or student performance. Challenging schoolwork did.

Students who were engaged in school and absorbed in learning were likely to be in positive learning environments—where there is good feedback, relevant teaching, challenging work, and a focus on learning at the students' pace. Students like teachers who provide positive learning environments. Students are also inclined not to be negative about a subject and their work in it where there is a positive learning environment. Disengagement with learning tends to be more passive than actively disruptive in class.

The factors that are positively associated with engagement in learning are not the exact mirror opposite of those that are associated with higher scores for being disengaged in learning and school. Being disengaged in school is not simply a matter of not having positive learning environments, or different values. Being engaged in school is not simply a matter of having non-disrupted classes, or non-comparative classes. Nor are students simply passive recipients or lodgers in particular contexts.

Analysis shows that students' views of their teachers, and experience of disruptive or comparative learning environments are related to their life outside school. Those who show signs of disengagement or who perceive they are in less supportive learning environments are also experiencing family pressure, or engaging in risky behaviour. They were more likely not to have interests that engaged them outside school, or alternative forms of recognition and inclusion, though standing out in some way was of more importance to them. Conversely, those who are engaged in school are also supported at home, have supportive friendships, and interests that can extend them.

The attitudes and values and practices of those who are engaged or absorbed in learning, and those who have developed internal markers of achievement are likely to have taken some time to develop—and vice versa. There are consistent links with earlier attitudinal composite scores (going back to the first year at school), and somewhat less consistently, with mathematics scores. There are also consistent links with the enjoyment of reading since age 8, and earlier enjoyment of school. Engagement in learning is also supported by positive experiences or relationships in all four of the main spheres of their life: school, family, friends, interests; and it is reflected in values.

Attitudes to current class experiences—learning environments, teachers, and views of subjects— carry less of the past with them: indicating that student reaction is not preset, and that what individual teachers do with them does matter.

7. How students make their subject choices

This chapter addresses research question 12:

What personal interest, peer, school, and home factors influence the subject choices which students make at the start of secondary school, and how do these choices relate to their understanding of qualifications and their aspirations?

It explores the influence of personal interests, peer, school and home factors on the subject choices that students from the Competent Children, Competent Learners sample made in their first 2 years of secondary school. These are important choices to understand. They have a direct impact on pathways that remain open to students in the senior secondary school, or that become closed to them. However they are by no means unconstrained choices. The ways in which schools organise the curriculum, sort and group students within this structure—aspects which are decided within a particular school "ethos" with regard to learning and its intended outcomes—all have a demonstrable impact on choices students can make.

The Learning Curves study has documented these interactions at work in the senior secondary year levels of six medium-sized New Zealand schools (Hipkins and Vaughan, with Beals, Ferral and Gardiner, 2005). The analysis reported here extends the picture to the lower secondary area and draws from a much wider range of schools. School data for this section were drawn from the overall description provided by a dean (or staff member with a similar role) for each school where students from the Competent Children, Competent Learners study were enrolled for their lower secondary education. In 2003, data were collected from 37 schools attended by both Year 9 and Year 10 students in the Competent Children, Competent Learners sample. Other Year 9 students attended 23[18] different schools, while other Year 10 students were enrolled in 26 different schools. The students in the study all began their education in the Wellington area, and most of them still attend schools in Wellington and surrounding areas such as the Hutt Valley and Kapiti Coast. However, some from the sample group have moved further afield over the years and the schools they attend are spread across New Zealand.

HOW SCHOOLS ORGANISE THE CURRICULUM

The National Education Guidelines (NEGs) require schools to provide a "broad and balanced coverage" of the curriculum for all students but there are many ways this can be achieved (Bolstad, 2006). The wide secondary school sample provides an interesting snapshot of the variety of ways in which secondary schools respond to the pressures of a "crowded curriculum" and to the demands of meeting the learning needs of a wide range of students.

Compulsory subjects

Traditionally secondary schools have met their NEG obligations by offering certain compulsory subjects for all students until the end of Year 10, after which students progress to the senior secondary or post-compulsory curriculum. New Zealand's curriculum organises this compulsory core into eight "learning areas".[19] These are: English, Learning Languages, Mathematics and Statistics[20], Science, Technology, Social Sciences, The Arts and Health and Physical Education. The breadth of the "core"—and the pressure on it to keep growing—is apparent. In the traditional model of curriculum, when full coverage of the core was

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[18] Eleven of the schools were visited in two different school years but treated separately because subject choice policies and practice can change from year to year.

[19] Until very recently there were only seven. The addition of languages other than English for Years 7 to 10 has occurred during the current round of curriculum revision.

[20] The formal addition of statistics to the mathematics curriculum is another outcome of the current Curriculum Project.

expected, students could expect limited choice of "optional" subjects in Years 9 and 10. Not until Year 11 did they get greater opportunity to follow their own study interests. This situation is changing.

In recent years, schools have been encouraged to develop school-based curricula that meet the needs of the students in their local communities (Bolstad, 2004). As Table 82 below shows, some secondary schools have responded by making certain subjects optional where once they might have been compulsory. The light grey area of Table 82 shows the compulsory core in the sample schools. The traditional "core" subjects of English, mathematics, and science are still compulsory in all the schools, at both year levels and health and PE is compulsory at Year 9. No other essential learning area is compulsory in every secondary school in the study, although social studies (now social sciences) is nearly so.

Table 82 **Compulsory subjects at age 14**

Subject	Number of schools where subject compulsory	
	Year 9 (*n* = 60 schools)	Year 10 (*n* = 63 schools)
English	60	63
Mathematics	60	63
Science	60	63
Health and PE	60	62
Social studies	59	61
Technology	53	23
The Arts	48	16
Information technology/TIM*	26	10
Religious education	12	11
Māori	9	1
Graphics and design technology	8	2
Japanese	6	-
French	5	-
Latin	1	-
Economics	1	3
Horticulture	1	-
Supplementary literacy/English	1	1
Another language	1	1
One language (from the range provided)	9	1

* The subjects called Information technology in some schools and Text and information management in others have been collated together.

In this group of schools, "language learning" is the least likely of the curriculum learning areas to be made compulsory. However its status as a specific learning area is very new and it will be interesting to see if this situation changes. Outside the specified core, subjects related to learning ICT skills are the most likely to be compulsory, more so at Year 9. At Year 9 the number of compulsory courses per school varies between 5 and 13. The range at Year 10 is 5–10.

Optional subjects

Where there are fewer compulsory elements at Year 10, there is more potential for students to make choices of subjects that interest them. This is reflected in the greater numbers of optional courses offered at Year 10, including some subjects that are likely to be compulsory at Year 9. Table 83 has been ordered by the frequencies of Year 10 options. The extent of the language choices is interesting, given the recent introduction of "language learning" as one of the eight learning areas. In a few schools vocational types of subjects make an appearance. This is also interesting because these are more typically offered in the senior secondary school. They hint at an opening up of the lower secondary school curriculum to provide courses that meet a wider range of student learning needs. Sixteen schools provided cross-curricular subjects at Year 9 and at Year 10.

Table 83 **The range of optional subjects offered**

Subject	Number of schools where subject offered	
	Year 9 (*n* = 60 schools)	Year 10 (*n* =63 schools)
Arts	36	61
Technology	23	52
European languages	41	52
Asian languages	37	46
Pacific languages	40	44
Economic studies	19	44
Graphics and design	22	44
Computer studies	22	35
Cross-curricular subjects	16	16
Social sciences	8	14
ESOL (English extension)	19	13
Horticulture	7	11
Agriculture/rural studies	1	5
Environmental education	5	4
Engineering	2	3
Unspecified languages	8	3

At Year 10, the schools in the sample offered between 3 and 18 options. At Year 9 between 1 and 14 options were offered. As might be expected, there was a trend for the larger schools to offer more optional choices. No school of under 500 students offered more than six options at Year 9. An average of three Year 9 optional subjects were offered in these smaller schools compared to an average of eight choices in the schools of over 500 students. No school of under 500 students offered more than 10 options at Year 10, with an average of 6.5 subjects in these schools compared to 10.5 subjects in the schools of over 500 students. On the other hand the one school that offered just three Year 10 choices had a roll of 1,000+ students.

Creating compulsory half-year courses, or even single-term courses, is one potential means of balancing the competing pressures for core "coverage" and greater choice. In smaller schools it also helps to stretch the teaching expertise available. The next table shows the number of schools in the sample that used this strategy. At Year 9, two schools offered some courses of each type, and seven schools used at least two types. At Year 10, just five schools had mixed and matched courses of different duration.

Table 84 **Duration of optional courses**

Duration of course	Number of schools that offer these	
	Year 9 (*n* = 60 schools)	Year 10 (*n* = 63 schools)
Full year	26	54
Half year	29	10
Single term	13	3

The greater numbers of short courses offered at Year 9 suggests that at least some schools were offering "taster" courses, but students were then expected to commit more time to fewer subjects at Year 10. This interpretation is supported by the reasons schools gave for selecting and organising the optional courses as they did. As the next table shows, providing diverse courses for students to experience was the most frequently cited reason for structuring the optional components of the timetable as the school did.

Table 85 **Schools' reasoning about selection of optional courses**

Reason	Number of schools that gave this reason	
	Year 9 (*n* = 60 schools)	Year 10 (*n* =63 schools)
Provide diversity of choices/taster courses	30	35
Prepare for senior secondary/post school	16	23
Cater for student mix/needs	16	16
Historical reasons/school culture	13	7
Fulfil NZ curriculum requirements	10	10
Availability of staff/resources	7	9

It is interesting that only around a sixth of these schools cited reasons to do with fulfilling "NZ curriculum requirements" when deciding on the school's curriculum composition. This suggests many schools do not see these requirements as fixed, and so have taken up the relative freedom offered by the concept of school-based curriculum design, at least to a modest extent. However, making choices that catered for students' needs was cited only slightly more often, suggesting that this freedom is not necessarily being exercised to make student-centred curriculum judgements.

Students' feelings about their subjects

When asked what they enjoyed about school, many students nominated specific subjects. The same occurred when they were asked what they did *not* enjoy about school. In a separate question, they were asked to nominate their one favourite subject. The next table contrasts these three types of responses for the same subjects. The top two rating subjects for enjoyment and favourite subject, and the two subjects that were most nominated in terms of lack of enjoyment, are shown in bold type.

Table 86 **Subjects nominated as enjoyed or not enjoyed**

Subject	% who enjoyed	% who did not enjoy	Favourite subject
Health/PE	**26**	4	**20**
Arts	**21**	3	**16**
Technology	14	3	8
English	13	10	9
Science	11	**20**	6
Social studies	10	10	9
Languages other than Māori	10	3	1
Mathematics	8	**20**	9
Graphics/design technology	6	>1	6
French	5	1	3
Japanese	3	>1	2
Economics/consumer studies/financial literacy	2	-	2
Māori	-	2	2

Health/PE and the arts, subjects from the compulsory core curriculum with a strong practical component, were the most frequently nominated enjoyable subjects, and also topped the list of favourite subjects. Very few students said they did not enjoy these subjects. Science and mathematics, also compulsory core subjects, were the most often nominated as not enjoyed, although they, too, were enjoyed by some students and in a number of cases were also their favourites. Percentages could be expected to be lower for optional subjects such as languages, graphics, and economics, given that only some students would be taking these. Not surprisingly, students were very likely to say a subject they enjoyed was also their favourite. Students who said they enjoyed languages other than Māori were more likely to have university-educated mothers.

Parents were aware of the relative popularity of the arts, with 25 percent saying this was a subject their child enjoyed. A number of parents mentioned enjoyment of languages other than Māori (15 percent), mathematics or health/PE (both 13 percent), English, science, and technology (all 12 percent). From the parents' point of view, the least enjoyed subjects were mathematics (14 percent), science, and English (both 10 percent).

Links between enjoyment and other factors

We looked for links between each student's attitudes to their subjects and their English, mathematics, and science teachers' perceptions of their overall achievement. Students' enjoyment of mathematics, English, French, Latin, and languages other than Māori was strongly associated with teachers' perceptions that these students had very good/excellent overall achievement levels. Students who did not enjoy mathematics and science were more likely to be seen by their teachers as of minimal/very low or slow/below average achievement. These two groups of lower achievement students were more likely to nominate technology or social studies as a favourite subject. The higher achieving students were more likely to nominate Japanese, French, Latin, or graphics and design technology as favourites, and less likely than all other students to nominate health/PE as their favourite subject. Financial literacy was likely to be a favourite subject for students seen to be of average/medium achievement.

Teachers' perceptions of the highest level of qualification a student was likely to achieve produced similar patterns when cross-tabulated against students' favourite subjects. For example, students whose favourite subject was technology were more likely to be seen by their teachers as capable of achieving NCEA Level 1 or 2. By contrast students who nominated mathematics, French, Latin, other languages, graphics and design technology, and information technology were all more likely to be seen as capable of gaining at least an undergraduate degree. Students who favoured Japanese, French, and Latin were more likely to be seen as capable of gaining a postgraduate degree. Teachers were most likely to be unsure of the capabilities of students who said their favourite subjects were Māori or financial studies.

As might be expected, students who said they enjoyed English, mathematics, or science were also more likely to say they enjoyed good teachers. But there were no strong links between enjoyment of a specific subject and enjoyment of academic work in general. There was a trend for students who enjoyed graphic and design technology to say they did not enjoy unfair teachers, and for students who enjoyed social studies to not enjoy homework. There were no patterns of links between not enjoying any named subject and not enjoying homework, hard work, unfair teachers, poor or boring teachers, or the school's discipline system.

Future plans and teachers' perceptions

There were also associations between students' thoughts about their future plans and their teachers' perceptions of their achievement levels. The small number of students who said they wanted to leave school as soon as they could (less than 1 percent of the sample) were also the most likely to be seen by their teachers as incapable of gaining any qualifications, or capable of gaining a trades qualification. These students were the least likely to see themselves undertaking future study, and they were also more likely than other students to say they wanted to get a job or travel when they left school. Interestingly, students who teachers variously saw as capable of gaining NCEA Levels 1, 2, or 3, but no qualifications beyond school, were more likely than other students to say they wanted to leave school at the end of Year 11. Teachers were more likely to be unsure of the abilities of students who said they wanted to leave school at the end of Year 12. Unsurprisingly, students who said they wanted to leave school at the end of Year 13 were more likely to be seen by their teachers as gaining undergraduate or postgraduate degrees.

Teachers' views of students' comparative achievement levels were consistent with their expectations of students' academic success. Students perceived to be of minimal/low achievement were the most likely to be seen as not capable of gaining any qualifications, or of getting NCEA Level 1 or a trades qualification. Students seen by their teachers as very good/excellent were perceived as the most likely to gain undergraduate or postgraduate degrees. Students seen as average/medium in their academic achievement were more likely to be expected to gain NCEA Level 3 as their highest qualification.

As we shall shortly see, these links between students' enjoyment of their subjects, their future plans, and their teachers' perceptions of their general achievement levels and likely success in future learning, may already be leading students into divergent types of subject choice pathways before they reach the senior secondary school.

THE IMPACT OF DIFFERENTIATION BY ACHIEVEMENT ON STUDENTS' SUBJECT CHOICES

At both Year 9 and Year 10, a majority of the schools said some subjects were differentiated so that the students sometimes studied in ability groups. This was more likely to happen in the "core" curriculum subjects that were being taken by all or most students, with mathematics the subject most likely to be differentiated by achievement levels. The next table shows the extremes of the range of differentiation practices across the schools. It is evident that very few schools sorted *all* the students in each year's cohort in each of these subjects. The students in the few schools that did do so were the most likely to be experiencing streaming in the traditional sense of an overarching allocation to one ability group for all of their learning (for further comment about this see Wylie, Hodgen, & Ferral, 2006, p. 34).

More typically, except for mathematics, schools differentiated 45 percent or less of each cohort, with the rest being in mixed ability classes. A greater proportion of each cohort was differentiated by achievement for mathematics, especially at Year 10. Again this matches findings from the Learning Curves research. In all six Learning Curves schools mathematics is differentiated into at least three distinctive types of courses at Year 11, each assessed by a different mix of NCEA/NQF achievement or unit standards (Hipkins & Vaughan, 2002; Hipkins, Vaughan, Beals, & Ferral, 2004). The data here suggest that students are already on a particular mathematics trajectory in Years 9 and 10 that will continue to determine the level of achievement open to them in the senior secondary school.

Table 87 **How many classes were differentiated in each subject?**

Subject	Year 9 (*n* = 60 schools)		Year 10 (*n* = 63 schools)	
	None	All	None	All
Mathematics	24	7	14	13
English	31	4	29	4
Science	33	3	31	4
Social studies	36	2	33	3

Given the potential for longer-term consequences of this differentiation, it is important that schools that use such practices "get it right". What guides their sorting processes? The next table shows the types of evidence that schools reported using to make their sorting decisions. Around half the schools used standardised tests at both levels. It seems logical that more schools use information from contributing schools in Year 9, when students have just arrived, and on the record of the achievement in the subject at Year 10, when they have been in the school for a year.

Table 88 **Information used to allocate students to differentiated classes**

Type of information/evidence	Number of schools that gave this factor	
	Year 9 (*n* = 60 schools)	Year 10 (*n* = 63 schools)
Standardised tests	36	33
Information from contributing schools	22	13
Performance	4	38

A majority of the schools said students could be moved around some or all of the differentiated (and presumably mixed ability) classes during the year.

PATTERNS OF OPTIONAL CURRICULUM CHOICES

In the third year of the Learning Curves project a cluster analysis of students' overall subject choices was carried out. The results were strongly suggestive of a link between perceptions of a student's academic abilities and the combinations of subjects that student took. While some students combined "academic" subjects in various ways (arts combinations including history and similar subjects, or science combinations, for example) others took a cluster of more practically or vocationally oriented subjects. These were typically combined with less academic versions of English and mathematics (Hipkins, Vaughan et al., 2005).

Given these findings, we wondered if the Competent Learners study would reveal the beginnings of this sort of clustering at Year 9 and Year 10. The patterns could not be expected to be as strong because students make fewer optional choices at these lower year levels. We did not include differentiated compulsory subjects in the analysis because the numbers within each cluster (e.g. those who were in non-differentiated English classes and those who were not) became too small to work with. Nevertheless, the cluster analysis did indeed reveal the beginnings of the patterns found more strongly at higher year levels in Learning Curves.

Some subjects were grouped for the analysis. Japanese, French, and Māori were considered separately but other languages, taken by smaller numbers of students, were put in one group. Technology and arts subjects were also grouped. The analysis revealed seven clusters of optional subjects. While they do not differentiate between different "types" of students to the same extent as the Learning Curves clusters, the beginnings of differences are evident, especially between the two clusters that could be seen to represent the extremes of the range (Clusters 1 and 7). The clusters we found are shown in the next table.

Table 89 **Patterns of clustering of optional subjects**

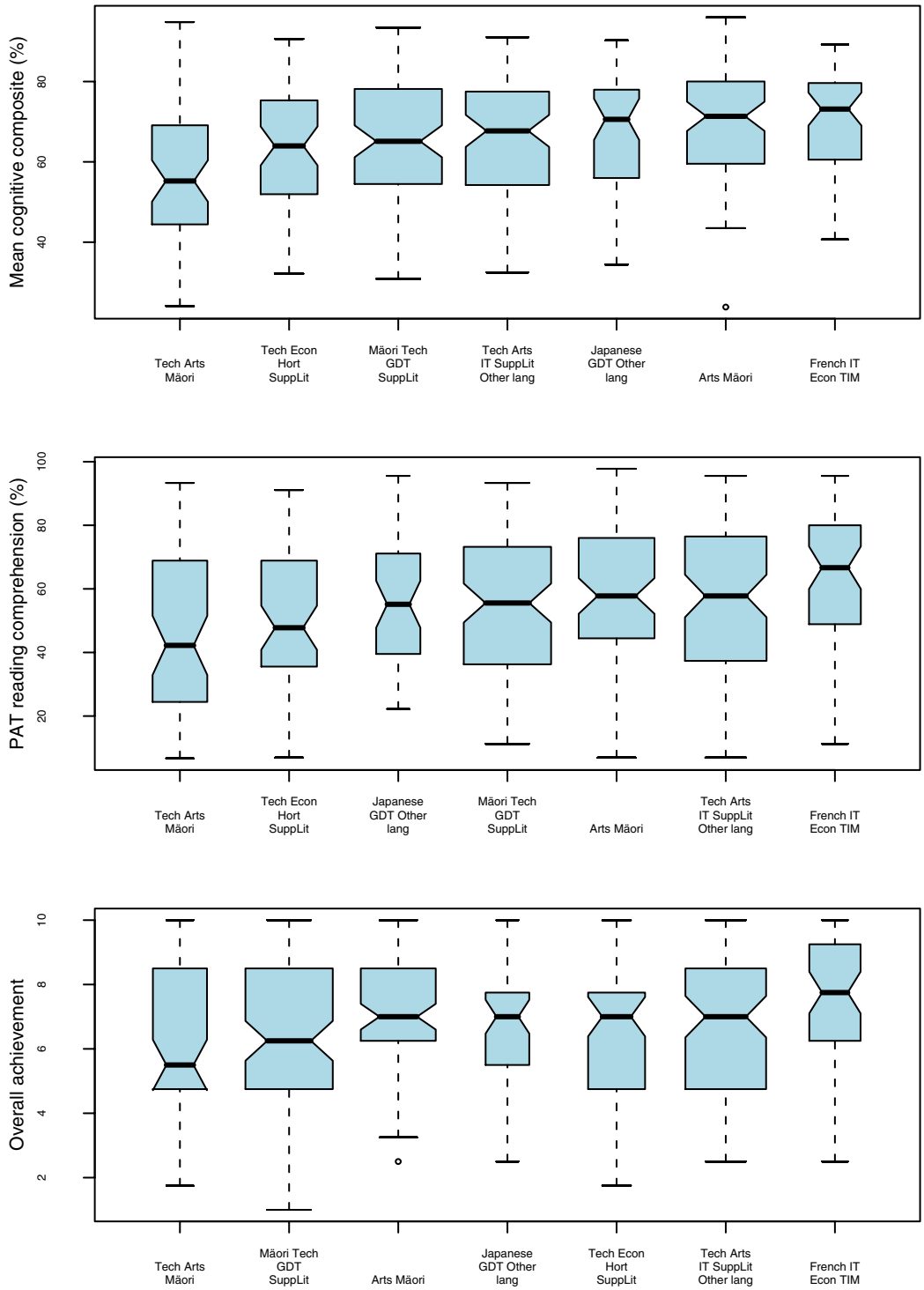
Cluster no	Subjects in cluster	% of cohort*
1:	technology, arts, Māori	12
2:	technology, economics, horticulture, supplementary literacy	13
3:	Māori, technology, graphic design technology (GDT), supplementary literacy	19
4:	technology, arts, information technology (IT), supplementary literacy, other language	18
5:	Japanese, GDT, other language	10
6:	arts, Māori	17
7	French, IT, economics, text and information management (TIM)	12

* Numbers do not add to 100 because of rounding.

Links between subject clusters and competencies

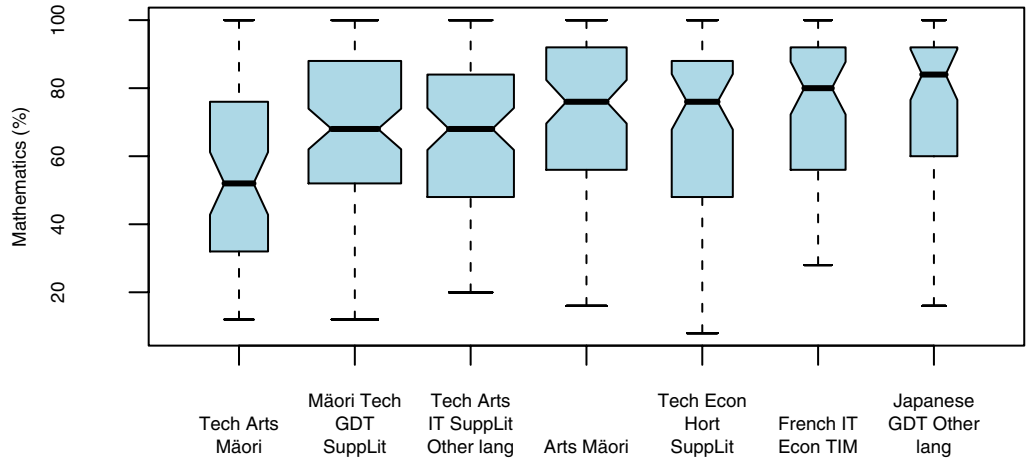
These clusters were analysed against the study factors, achievement indicators, and social characteristics. The three box and whisker plots that follow clearly show that students in the Tech arts Māori were of lower general academic achievement than those in the French IT economics cluster. They had significantly lower mean cognitive composite scores, PAT reading scores, and overall achievement scores.

Figure 20 **Mean cognitive composite scores, PAT reading comprehension scores, and overall achievement scores across the subject choice clusters**



A similar pattern was found for mathematics achievement, but in this case the students in the Japanese graphics design cluster rated slightly higher than those in the French IT economics cluster. Again, the Tech arts Māori students had significantly lower levels of mathematics achievement than either of these other two groups.

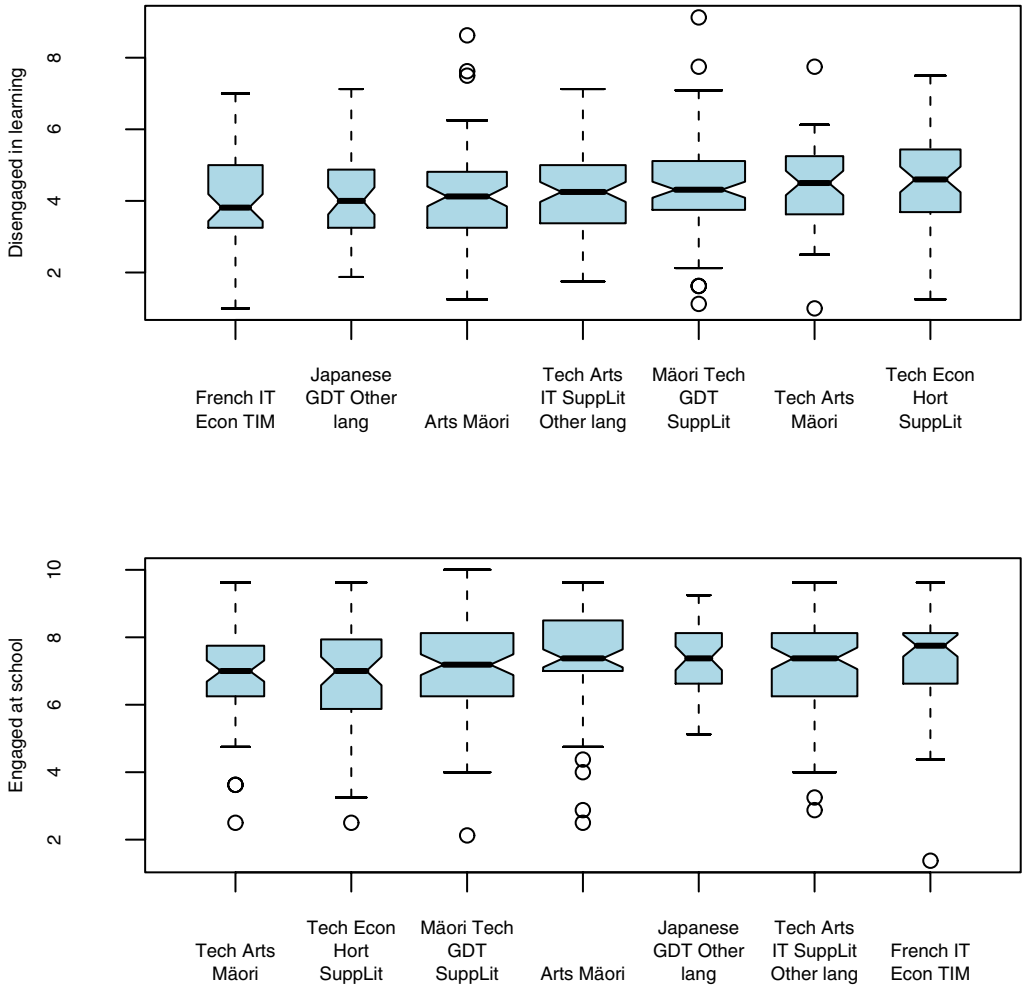
Figure 21 **Mathematics scores across the subject choice clusters**



There were smaller differences between the clusters in terms of students' logical problem-solving abilities, their enjoyment of reading, their confidence at school, and the use of intrinsic markers to measure their own progress (being interested, making thought-provoking links, etc). Students in the Technology economics horticulture cluster were more likely than those in any other cluster to rely on external markers of their progress (comparing their results with other students and so on).

As the next figure shows, students in the French IT economics cluster and the Japanese graphics design cluster were also the least likely to be disengaged from their learning, with students in the Tech arts Māori and Tech economics and horticulture clusters significantly more likely to be disengaged than either of these groups. The converse pattern also held, with students in the latter cluster significantly less likely to be engaged with learning than those in the Technology arts IT, the French IT economics, or the Japanese graphics design clusters.

Figure 22 **Disengaged in learning and engaged with learning scores across the subject choice clusters**



It is concerning that disengaged students may be more likely to encounter other such students in their optional classes, and doubtless also in at least some of their compulsory classes, given the differentiation practices outlined above. Reinforcing this possibility, the students in the Tech arts Māori cluster were more likely than students in any other cluster to be in situations where the school's dean said they were likely to experience substantial disruptions to their learning. By their subject teachers' rating, students in this cluster were more likely than those in any other cluster to never, or only occasionally, do their homework. More encouragingly, we found no association between being in this cluster and having friends who got into trouble at school.

Links between subject clusters and social characteristics

As in the Learning Curves study, we found differences in social characteristics between the students in some of the clusters. Some cluster differences seemed to be related to gender differences in favourite subjects. For example, females were much less likely than males to say graphics and design technology (GDT) was their favourite subject. Both clusters that include GDT were taken by significantly more males than females. The arts were much more likely to be nominated as favourite subjects by females and the clusters that included the arts with Māori or technology were more likely to be taken by females. Males were more likely to nominate health/PE as a favourite subject and females to nominate English. Neither of these subjects was included in the cluster analysis because they are compulsory in Years 9 and 10. Interestingly, there was very little gender difference in the composition of the other clusters. But data relating to students' families showed a different pattern.

There was an association between a student's cluster and their mother's level of education. Students whose mothers had no formal education were least likely to be in the Japanese graphics design cluster (5 percent of all such students) or the French IT economics cluster (8 percent). Just under half of them were in the Māori technology graphics design cluster (23 percent) or the Tech arts Māori cluster. Since there is a general association between mother's level of education and a student's overall achievement at school, this pattern again supports that finding that several clusters do seem to have grouped students with similar achievement profiles. Clusters that we have termed Japanese graphics design and French IT economics group "higher achievers", while the technology arts Māori cluster groups "lower achievers".

This pattern holds for school decile and family income levels—factors that are not easy to disentangle. Students in the decile 9 and 10 schools were over-represented, and students in the decile 1 and 2 schools under-represented in the Japanese graphics design and French IT economics clusters. The reverse also held. Students in the lowest decile schools were over-represented in the technology arts Māori cluster while decile 9 and 10 schools were under-represented. Students who came from low-income families were more likely to be in the Technology arts Māori cluster or the Technology arts IT cluster, and less likely to be in the Japanese graphics design and French IT economics clusters. A third of all students in the latter clusters came from very high-income families.

The Japanese graphics design cluster was the smallest overall, and the students in it all attended larger schools, with 67 percent of them in schools of over 1,000 students. Being able to take two language choices at Year 9 or 10 is unlikely to be an option in smaller schools, where fewer subject choices are offered overall.

Although they were 10.5 percent of the overall sample, Māori students made up 16 percent of both the Technology arts Māori, and the Art Māori clusters. Just under half of them were taking a cluster of subjects that included Māori (46 percent): a proportion that is in fact much the same as for students from other ethnicities (50 percent of the Asian students, 47 percent Pākehā/European students, and 43 percent of Pacific students). Compared to their overall numbers, Asian students were somewhat over-represented in the Technology arts Māori cluster, but also in the French IT economics cluster.

Life experiences and clusters

Students who registered at least one unpleasant life experience from the *adverse events* factor were more likely than other students to be in the Tech arts Māori cluster 1 (31 percent of all such students were in this cluster). Students who had two or more experiences from this factor were over-represented in the Technology economics horticulture cluster (18 percent of all such students). These students were also the most likely to be experiencing aspects of the *family pressure* factor. The students in the Tech arts Māori cluster were also the least likely to have given positive responses for aspects of the *praise and achievement* factor, or to say that they had taken action about a situation that concerned them.

WHO REALLY DECIDES?

While students perceive that they make their own subject choices, it is very clear that they do so within a structure that guides and constrains the actual choices open to them. As the next table shows, from the schools' perspective, students, or even their parents, are not necessarily seen as holding the final choice.

Table 90 **Who makes the final decision about students' learning programmes?**

	Number of schools that gave this response	
	Year 9 (*n* = 60 schools)	Year 10 (*n* = 63 schools)
Senior management, including deans	34	44
Parents	24	30
Student	25	28
Class size	-	6
Prerequisites	-	5
Timetable	3	4

The Learning Curves research supports the pattern shown in this table. The deans are very influential in this subject selection process and their perceptions of "suitable" subjects for certain students strongly guide practice, sometimes in the face of very different views held by the subject teachers (Hipkins, Vaughan et al., 2004). As we have seen, expectations of a student's academic ability do correlate strongly with the types of courses they "choose" and the clusters of subjects they put together. Nevertheless, most students do perceive that their subjects have been their own choice.

Students were asked to say which of a list of given factors influenced their choices of optional subjects. Some students chose only one factor (50 percent Year 9; 48 percent Year 10). Some chose two factors (36 percent Year 9; 37 percent Year 10) and a smaller number gave three (12 percent Year 9; 13 percent Year 10).

As the next table shows, the majority of students said they chose subjects they thought would be interesting for them, and their parents also perceived this to be the case. Parents tended to place a greater weight on making choices that would lead to careers than did the students. Family advice was perceived to have influenced their choices by around a fifth of the students, slightly more so at Year 9. As might be expected, given the narrower range of choices offered by the schools at Year 9, more students thought Year 9 choices had been constrained by having to prioritise amongst the options offered.

Table 91 **A comparison of factors that students and parents said influenced option choices at Year 9 and Year 10**

Factors influencing decision	Year 9 % response (*n* = 475)*	Year 10 % response (*n* = 271)	Parents' response (*n* = 476)
Own interests	64	58	78
Family advice	21	16	n/a
Sounded fun	18	15	n/a
Had no real choice/had to prioritise	18	8	14
Initial taster/tried them out	12	20	11
Friends taking subject	10	8	3
Career-related reasons	9	14	18
Sounded easy	6	6	6
Public information from school	3	3	1
Already doing subject/option	2	17	-
Teacher's advice	-	3	n/a
Teacher's reputation	-	2	1
The options available	-	-	11
Advice from others familiar with school	n/a	n/a	5
Led on to Year 10 options	-	-	5

* All students were asked about the factors influencing their decisions in Year 9, and the students currently in Year 10 were also asked about their Year 10 decisions.

These patterns are very similar to those reported for the Learning Curves study. The older students in that study also rated expectations of interest and enjoyment above other factors and family, including older siblings, were the people most likely to influence their choices (Hipkins, Vaughan et al., 2004). Few Learning Curves students said they chose subjects because they expected them to yield "easy NCEA credits". Indeed, the expectation that a subject would be challenging was seen to be an important aspect of enjoyment. While very few of the Competent Learners students said they chose easy subjects, there was a tendency for more students who did do this to come from low-income families. The Competent Learners students, like the Learning Curves students, did not give high ratings to choosing subjects taken by their friends, or because they liked the teacher, and neither did their parents.

Year 9 females were more likely than males to say they chose based on their interests, or to say they took family advice. These gender differences were not apparent for the Year 10 students in the sample. Parents of girls were more likely to say their child was influenced by the options available, by the link to subsequent options at Year 10, or by the potential links to a career. Parents of boys were more likely to say their sons had no real choice.

More than half the parents (59 percent) believed that Year 9 subject choices would impact on future decisions about qualifications and careers. Māori and Pacific parents were more likely than other parents to say they did not think that Year 9 subject choices would have an impact (35 percent cf. 14 percent of Pākehā/European and Asian parents). Asked the same question about Year 10 choices, 74 percent of the parents who felt they could answer[21] said these mattered, and 11 percent said they mattered more than the choices made at Year 9. Reasons for the importance attached to these choices are shown on the next table. They, too, reflect an increasing emphasis on the importance of strategic decision making at Year 10.

[21] All parents gave answers in relation to Year 9 decision making; 202 parents of Year 9 students did not respond to this question about Year 10 choices.

Table 92 **Parents' perceptions of consequences of Year 9 and Year 10 subject choices**

	Year 9 choices (*n* = 476) %	Year 10 choices (*n* = 274) %
Need to link to work opportunities	28	35
Need to link to future qualifications	26	35
Experience subjects to find out interests	21	16
Could limit future options	11	18

Parents of daughters were more likely to say Year 9 choices mattered because they could limit later options, though the numbers were low (14 percent cf. 7 percent of the parents of sons). Parents in families where the mother had no qualification were more likely to emphasise the importance of subject choices in Year 9 that linked to future work opportunities (41 percent cf. 26 percent of others).

Changing their minds?

At the transition from Year 9 to Year 10 there is an opportunity for students to change their optional subject choices. However, some demand changes during the year, realising they have made a mistake. How common are these different types of changes?

Forty-three percent of parents reported that their child had changed options during the year, or wanted to change. The next table shows parent views of why students had changed, or wanted to change options.

Table 93 **Parents' perceptions of students' reasons for changing options**

Reason	% response (*n* = 271)
Child doesn't like subject	19
Child wants to make a strategic choice to fit with other subjects/interests	10
Child doesn't like teacher	8
Subject too difficult	6

Sixty-five percent of all Year 10 students said they had dropped an option when moving on from Year 9. As the next table shows, they gave a mix of positive and negative reasons for making a change but mostly the choice was seen to be their own, rather than one imposed on them by school timetable constraints, by their parents, or by policies for promotion to the next year level. Their views are broadly in line with their parents' perceptions, although parents seemed to underestimate the exploratory nature of the some students' desire for change.

Table 94 **Students' reasons for changing options**

Reason	% response (*n* = 271)
Wanted to try a new option	25
I didn't like it	14
Difficult work	11
Teacher reputation	10
Option not offered in Year 10	8
Restricted entry to choice	5
Timetabling	4
Year 9 marks not high enough	3

Happiness with the choices made

A majority of students and parents seemed happy with the Year 9 or 10 subject choices made. When asked if they needed more guidance for making these choices, 39 percent of students and 19 percent of parents repeated that they were happy with the choices made, and 19 percent of students and 40 percent of parents said they had received sufficient information. However, 28 percent of both students and parents wished they had received more guidance.

The following were the reasons given for not being happy with subject choices. Again there is broad agreement between students and parents, although more parents were dissatisfied with the information they received.

Table 95 **Reasons some students and parents were not happy with optional choices**

Reason	Student % response (*n* = 475)	Parent % response (*n* = 476)
Didn't get enough information	15	22
Don't like choices	11	4
Now know what want to do	9	5
Restricted choice	4	9
Don't like teachers	3	2
Choice at Year 9/10 blocks later choices	3	2

Students whose mothers were university educated were more likely to say they did not need any more information, or they were not sure. By contrast, students whose mothers had a school level or trades qualification were more likely to say they did need further information, and the next highest level of such a response was given by students whose mothers had no qualifications. Māori and Pacific students were more likely to say they wished they had had more guidance, and to say this was because they now knew what they wanted to take. It does seem that students with "cultural capital" that aligns well with current educational systems are making subject choices that they are happier with subsequently. Given the emergent clustering of some "low ability" students into subjects that may close down study options later, this is a concern. It will be useful to track these students at age 16.

SUMMARY

English, mathematics, and science were the Year 9 and 10 compulsory subjects in the schools attended by the sample. Health and PE were also compulsory in all but one of the schools, and social studies in all but three of the schools. There was a wide range of options, with more at larger schools. Sorting students into "ability" streams for all their subjects is now uncommon, but some differentiation of classes within subjects occurred for around half the schools, particularly for mathematics. We also found evidence of some differentiation by clusters of options, with students with lower overall achievement and competency levels more likely to be in subject clusters that included technology, arts, and Māori, compared with those in clusters that included French and economics, and Japanese and graphic design technology. Students in the first cluster also had higher levels of disengagement, and were more likely to encounter disruption in their classes.

Students' choice of subjects is constrained by what their school offers. School deans guide choices, and often see themselves making the final decision about a student's learning programme. Most students see themselves making the choice, however, guided primarily by their own interests. Options are changed when students realise they do not like them, or that something else appeals more. Most were happy with the choices made, though some would like more information to help their decision: more so those whose families may not have educational experiences to equip them with relevant knowledge.

8. School choice

Young people and their parents make decisions about which secondary school to attend. There are constraints on that choice related primarily to the enrolment zones of popular state schools or the special character of state-integrated schools, and the costs to families associated with travel, uniforms, activity fees, and school fees. These constraints are coupled with the things that flavour individual choice, such as where friends are going and family traditions, as well as whether differences between schools are apparent, or whether they matter to young people and their parents.

Seventy-one percent of the students said their secondary school had been their first choice of school. Twenty-two percent said it had not been, and 7 percent were unsure or could not remember. Parents were more likely to think the school had been the first choice (85 percent).

Perhaps this is because most parents saw the school being chosen either by them with the student (37 percent), or by parents alone (41 percent). Only 18 percent of parents said their child had made their own decision. This contrasts with the 34 percent of students who said *they* had made the decision alone. Thirty-two percent of the students said they had chosen their school with their parents, and 30 percent, that their parents chose it for them. Two percent said they had no choice: it was the only school available.

Of the 156 students who believed they had chosen the school alone, 38 percent of their parents agreed with this perception, 37 percent thought that it had been a joint decision, and 24 percent considered that it had been their choice alone. Of the 135 students who said it had been solely their parents' choice, most of their parents either agreed with this perception (66 percent) or perceived it as a joint decision (27 percent). Half the parents whose children thought it had been a joint decision (158) were in agreement with them, but the parents of 35 percent considered it had been solely a parental choice.

How does this picture—looking back—compare with how parents and students reported their role in decision making about which secondary school to attend beforehand, when the students were aged 12, and in Years 7 and 8? At that time, both students and parents were much less likely to think only the student was making the decision. More thought it was a joint decision than it appeared to be looking back, and fewer thought only parents were making it.

Reasons for choosing a particular secondary school were asked at age 12. A school's good reputation and its proximity were more attractive to parents than students; other main reasons were family tradition and that friends were also going there. There were no distinct patterns of reasons given in relation to social characteristics. School reputation, for example, was just as likely to be mentioned by parents whose child was looking to attend a low-decile school as a high- decile school. This may be because something like "reputation" can mean different things to different people (academic, pastoral care, caring teachers, or a desirable peer mix); or that there are differences from the start in the set of options that occur to people in different circumstances. We certainly found that the higher the level of family income or maternal qualification, the higher the proportion of parents naming a decile 9–10 school as the one they were looking at. We also found that students from high- and very high-income homes, and those who wanted to attend a decile 9–10 school or a private or state-integrated school were more likely to mention "reputation" as a reason for choice, indicating a connection in their minds between high socioeconomic social mixes, and quality, or fit with their own practices and aspirations.

At age 14, we asked the parents an open-ended question about the main reasons why their child was attending the school they were at.[22] The pattern at age 14 is consistent with that at age 12, with two interesting exceptions. A good reputation was mentioned less at the period of attendance, than at the period of making a decision. Behaviour and values were more important now.

Table 96 **Parental reasons for choice of secondary school and reasons for current attendance**

[22] We did not ask the students to give reasons because we were asking substantially more questions of them at age 14, and had to prioritise in some areas.

Reasons↓	Age 12 (*n* = 496) %	Age 14 (*n* = 476) %
Good reputation	46	33
Closest school	31	31
Family tradition	27	34
Friends go there	23	27
Subject choice	14	10
Single-sex	10	10
Size	8	7
Already attends	7	–
Religion	7	9
Facilities/uniform	3	5
School ethos/values	3	16
Co-ed	3	4
Only one student can get into	1	3
Cost	1	2

Other reasons for current attendance included the uniform or dress code (5 percent), sport (3 percent), extracurricular activities other than sport (2 percent), and good transport (2 percent). Most parents gave more than one reason for why their child was attending their current school.

Social characteristics and school choice

Males were more likely to be in the school of their first choice (76 percent cf. 66 percent of females), and less likely not to choose the school again if they could (9 percent cf. 15 percent of females). Maternal qualification levels were unrelated to whether students got into their first-choice school, or would choose differently with hindsight.

While there were no ethnic differences in whether students went to their first choice school, Māori and Pacific students were less likely to choose the school again if they could go back in time (60 percent cf. 76 percent of Pākehā/European and Asian students).

The resource of family income—which is related to where families live, and therefore the schools they can access through zoning based on residence, or affordability of school activity fees (and school fees or donations, though legally the latter are voluntary)—was related to school choice.

The proportion of students who said their secondary school was not their first choice was highest among those from low-income families (33 percent cf 22 percent overall). Students from low-income families and those with non-qualified mothers were less likely than others to be in decile 9–10 schools, which have the highest status (and the most advantaged social mix or peer group) in the New Zealand system. The table below gives the distribution of the different family income, maternal qualification, and ethnic groups across schools at either end of the decile spectrum. Bear in mind that the sample participants were more likely to attend decile 9–10 schools than the rest of the country (33 percent of enrolments in the Wellington region are in these schools cf. 17 percent nationwide).

Table 97 **School socioeconomic mix by family income, maternal qualification, and ethnicity**

	Decile 1–2	Decile 9–10
Family income		
Low %	17	31
Medium %	16	46
High %	5	51
Very high%	1	72
Maternal qualification		
None %	25	37
Trades %	7	50
Tertiary %	6	51
University %	1	69
Ethnicity		
Māori and Pacific %	21	40
Pākehā/European and Asian %	6	54

It seemed as though low-income students were the ones most likely to access a reasonably close school: they had the lowest average time to get from home to school (0.39 of an hour (s.d. 0.3) cf. 0.51 of an hour (s.d. 0.4) of students from very high-income families). This may indicate difficulty in accessing schools further away.

Eighty-one percent of the students were at the secondary school named by the parents when they were aged 12 as their preferred choice. Did social characteristics play a part in who did not get to their preferred school? As one might expect, young people from low-income families were more likely not to be in their chosen school—but so, too, were those from high-income families. Ethnicity was not related, and maternal qualification did not show the relationship one might expect, though perhaps this indicates different preferences and tactics by different groups.

Table 98 **Attendance at secondary school chosen at age 12 by family income,**

	Not at school chosen at age 12 %
Family income	
Low %	26
Medium %	10
High %	19
Very high %	13
Maternal qualification	
None %	8
Trades %	21
Tertiary %	17
University %	11
Ethnicity	
Māori and Pacific %	17
Pākehā/European and Asian %	14

The distribution of social characteristics across schools is uneven in our sample, and nationwide. Yet when we look at whether students are in the schools they chose, social characteristics play less of a role. This suggests that families' choices tend to be pragmatic rather than ideal in the sense that all conceivable options within a broad locality are considered without regard to cost, distance, or availability. This has some implications for how much weight school choice could be given as a policy lever for school improvement or improving educational opportunities for students from low-income homes, and the additional costs if it were to be relied upon.

SECONDARY SCHOOL CHOICE IN HINDSIGHT

Seventy-three percent of the students would choose the same school again if they could go back in time. Fifteen percent were unsure that they would, and 12 percent would not. Half of those who were not going to their school of first choice felt more positive about it with experience. Eighty-two percent of those who went to the school of their first choice would also choose it again. There was no relationship between students' views here, and their views of the level of work at the school, and their place in it.

Seventeen percent of students from low- and medium-income families would not choose their school again if they could go back in time, compared with 7 percent of those from high- or very high-income families.

School capacity was related to whether students were in their first choice of school. The larger the school, the more likely it was that students were in their first choice of school (80 percent of those in schools with more than 1300 students, decreasing to 60 percent of those in schools with less than 600 students). Fifty-seven percent of those in the smallest schools would choose the same school again, increasing to 82 percent of those in the largest schools.

School gender mix was not related to whether students were in their first choice of school. When we looked at males and females separately, we found that males in coeducational and single-sex schools were just as likely to be in the school of their first choice, as were females. This was also true for those who would choose the same school again. However, 16 percent of girls in single-sex schools would not choose the same school again, compared with 4 percent of boys in single-sex schools.

Students in decile 1–2 schools were least likely to say they were in the school of their first choice (55 percent cf. 74 percent of others), and also least likely to say that they would choose the school again (55 percent cf. 82 percent of others).

However, while students who had moved from a low-decile primary school to a low-decile secondary school were least likely to say it was their first choice (50 percent), there was no significant difference here between them and their peers who moved to mid-decile or high-decile schools. The same pattern was not true for students in high-decile schools: those who shifted to mid- or low-decile schools were less likely to say their new school was their first choice (57 percent cf. 76 percent of those who shifted from one high-decile school to another). There was no difference between students from mid-decile primary schools, whether they shifted to a lower-, same-, or higher-decile school.

Those who stayed in low-decile schools, moved from mid-decile to low-decile, or from high-decile to low-decile were most likely to want to have been able to choose another school (30 percent). Patterns of change of school gender mix and school type were unrelated to whether students were going to their first-choice school, or would choose the same school again.

DOES GETTING INTO THE FIRST-CHOICE SCHOOL MATTER?

Does not going to the school of your first choice affect engagement in school or overall achievement? On the surface, yes: generally the students who were not in their first choice of school had lower average scores for the factors of school engagement, school confidence, and being absorbed in learning. Their overall achievement was lower (6.1 cf. 6.9 for those who were in their first choice of school, and 7.1 for those who were unsure if the school had been their first choice). We have seen that getting into the school of first choice is related to social characteristics, which have some bearing on overall achievement scores. When we looked further at the profiles of those who were in their first-choice school in comparison to those who were not, we found further differences that may shed some new light on what is involved in school choice (and on the assumptions that may be made about it).

Generally, those in their first-choice school had more positive interactions with family and friends, and were less engaged in risky behaviour, less likely to have had two or more adverse experiences over the past year, or to have been unhappy at school since age 8. There were no differences in profiles in terms of the number of schools attended, student leisure interests (though almost half those whose parents were in the *mixed interests* group were not in the school of their first choice), student values, or bullying experiences.

Students not in their first choice of secondary school had had lower average competency scores at age 12. These aspects also influence levels of school engagement, and age-14 competency scores.

We undertook a set of regression models that included the factors and clusters identified in our other regression models of school engagement as having positive or negative associations, and overall achievement. We included in the model student answers to whether the school they were at was their first choice, whether they would choose the school again, given hindsight, and whether the student felt they had made the choice of school (the last showed little relationship).

The short answer is that while students who are not at their first choice of school had lower averages for the factor of school engagement (6.6 cf. 7.7 for those who could not remember (n = 25), and 7.3 for those who were in the school of their first choice), only the difference between those who were not in the school of their first choice and those who were unsure remained significant in a regression model that accounted for 60 percent of the variability in school engagement scores. In this model:

- The main positive factors were that students would choose the same school again, had a history of enjoying reading, and to a lesser extent, that they had a positive learning environment in English, they used internal markers of achievement, were seen as introvert in the classroom at age 12, and had an inclusive family.
- The main negative factors were being unhappy at school more than once over the ages 8 to 14, risky behaviour, feeling negative about English or mathematics, and having a comparative learning environment.

These school choice variables did not remain in any of the models for being *disengaged in learning, absorbed in learning,* or *confident about school.*

SUMMARY

Just over a fifth of the students—but a third of those from low-income families—said their current school was not their first choice. When we looked at whether students were attending the particular schools their parents named as their choice 2 years earlier, we found that 81 percent were at the schools they had preferred. However, while this was somewhat less likely for students from low-income homes, it was also less likely for those from high-income homes. This suggests that school choice reflects pragmatic reasons rather than ideal matching of students and schools.

Just under three-quarters of the students would choose the same school again with hindsight. Half of those who were not at their first-choice school felt more positive about it once they had experienced it. However, this was less true for students in decile 1–2 schools, and students from low-income families.

Students who were not in their first choice of school had lower levels of school engagement, school confidence, and being absorbed in learning, and lower competency levels. But they also showed lower levels of family and friend support, and higher levels of risk behaviour and adverse experiences; they were also more likely to have been unhappy at school since age 8, and had lower competency levels at age 12. Being at the school of first choice does not account for the variability in student engagement and overall achievement levels: it is outweighed by the other factors outlined in our analysis of student engagement.

9. Patterns of performance

Now we look at student performance in three ways:

- as the students performed on the study tests for the competencies of mathematics, reading comprehension, and logical problem solving;
- as teachers saw it (their overall achievement compared with other students; and their ratings of students on the attitudinal composite); and
- as parents described it (their ratings of their children on a set of attitudinal items).

Student performance on the (teacher-rated and student task) competency measures, patterns of development over time, and patterns with respect to the four social characteristics (maternal qualification, family income, gender, and ethnicity) is described in detail in a separate report from the age-14 phase (Wylie, Ferral, Hodgen & Thompson 2006).

In this section, we investigate the factors of students' experiences, reactions, and relationships that are related to differences in competency scores, and teachers' assessments of their overall achievement level as evident in their three core compulsory classes. We also look at the relationship between previous attitudinal competencies and two key ways of spending time (developing habits): enjoyment of reading, and watching TV.[23]

READING COMPREHENSION

Reading skills are used in all school subjects. It is not surprising that those who had low scores for reading comprehension therefore also show negative attitudes about mathematics and science, as well as English. Their current interests appear to lie outside school. By contrast, those who scored highly for reading comprehension were also more likely to be engaged in school. They were also more likely to use internal markers of achievement, and enjoy positive family interactions.

[23] The findings summarised here were undertaken in relation to research question 7: *How are earlier competency levels in perseverance, communication, and individual responsibility, parent and teacher reports of dispositions and ability to cope with problems, related to competency levels at age 14 and attitudes to school, including motivation, attendance, and engagement?*

Table 99 **Reading comprehension scores and correlations with study factors at age 14**

Positive correlations			Negative correlations
External markers of achievement	0.37		
Internal markers of achievement*	0.35		
Engaged in school	0.32	Negative about science*	-0.30
		Negative about mathematics*	-0.29
		Parent-child friction	-0.25
		Family pressure*	-0.23
		Disengaged in learning	-0.23
		Disrupted learning environment	-0.21
		Risky behaviour	-0.21
		Negative about English	-0.20
Inclusive family	0.16	Comparative learning environment*	-0.16
Solid friendships	0.15	Friends with risky behaviour	-0.14

* variables included in model

Family income at 14 (included because it indicates resources supporting current opportunities), family income at 5 (included because it indicates resources available in the early years), and maternal qualifications, accounted for a significant amount of the variation in the PAT reading comprehension score. Family financial situation, experiences of bullying, student values, parent interests, and subject cluster remained in the model after taking family resources into account. This model accounted for 26 percent of the variance in student scores for reading comprehension at age 14.

- Having a family in a comfortable financial situation, parents with literate/involved interests, and having anchored or anchored and achieving values, and to a lesser extent, using internal markers of achievement were the factors most positively related to reading comprehension scores at age 14.
- Being involved in bullying over the past 4 years*, being in the Tech arts Māori subject cluster, and to a lesser extent, being negative about mathematics and science, in a comparative learning environment, and experiencing family pressure were the factors that were most negatively related to reading comprehension scores at age 14.

As part of the analysis for research question 7, we undertook regression models looking at the relationship between current competency scores and previous scores (from each phase of the study) for the attitudinal competencies, teacher reports of their school behaviour at age 12, and the "history" patterns of TV watching, enjoyment of reading, and enjoyment of school.

- Enjoyment of reading was the dominant variable in this model, which accounted for 40 percent of the variability in reading comprehension scores at age 14. Always enjoying reading was the most positively associated variable. Others were: the attitudinal composite score at age 12, and age-10 scores for perseverance and self-management.

MATHEMATICS

Age-14 mathematics scores on the study test were positively correlated with markers of achievement; and negatively correlated with being negative about mathematics, and to a lesser extent, also with being negative about science and English. In terms of learning environment, only the dimension of it being disrupted showed correlations. As noted in Chapter 6, *Engagement in school and learning*, this dimension may be picking up patterns of the peers in such learning environments, rather more than the nature of that environment. Risky behaviour, friends with risky behaviour, and family difficulties also show some negative correlation with mathematics scores.

Table 100 **Mathematics score correlations with age-14 factors**

	Positive correlations		Negative correlations
		Negative about mathematics*	-0.40
External markers of achievement	0.36		
Internal markers of achievement*	0.32	Negative about science	-0.28
Engaged in school	0.28	Parent-child friction*	-0.25
		Family pressure*	-0.22
		Disengaged in learning	-0.22
		Disrupted learning environment	-0.18
		Risky behaviour	-0.18
		Negative about English	-0.17
		Friends with risky behaviour	-0.15

* variables included in model

Family income at 14, family income at 5, and maternal qualifications accounted for a significant amount of the variation in the mathematics score. Family financial situation, parent interests, the number of adverse events experienced, and subject choice clusters remained significant in the model after taking into account family resources. The regression model including internal markers of achievement[24] accounted for 29 percent of the variability in mathematics scores.

- Using internal markers of achievement was the factor from this set that was most positively related to mathematics scores at age 14.
- Experiencing two or more adverse events over the past year, feeling negative about mathematics, being in the Tech arts Māori subject cluster, parents having mixed interests, and to a lesser extent, experiencing family pressure and parent-child friction were the factors that were most negatively related to mathematics scores at age 14.

When we used a regression model to see how earlier attitudinal competencies, age-12 school behaviour, and history of reading, TV watching, and enjoyment of school were related to age-14 mathematics scores, we

[24] We also did models that included external markers of achievement. This factor reflects actual progress as well as views of progress, and "knocks out" the internal markers of progress factor when it is included in the same model. The models in this chapter are aimed at increasing our understanding of the factors that might contribute or support competency and achievement (and those that can weaken them), so we use only the models including internal markers of achievement. The other models are reported in the technical report for this phase of the study. We also added to the models reported in this chapter the four factors related to engagement in school that were described in the last chapter, but none of the resulting models accounted for more of the variability in scores.

found that always enjoying reading was positively associated with age-14 mathematics scores (though the differences between this group and those who had mixed responses, or never enjoyed reading were smaller than they had been in relation to reading comprehension). Perseverance scores at ages 8 and 10, and curiosity scores at age 12 were also positively related to age-14 mathematics scores. This model accounted for 44 percent of the variance in age-14 mathematics scores.

LOGICAL PROBLEM SOLVING

Students with high marks for logical problem solving also tended to use internal markers of progress, and to (be able to) engage with the world of school. Unlike mathematics or reading, family factors did not show positive correlations. Negative family interactions, a sense of dissatisfaction (boredom and few positive interactions), and unsupportive learning environments were negatively correlated with scores for logical problem solving at age 14.

Table 101 **Logical problem-solving scores and correlations with study factors at age 14**

	Positive correlations	Explanatory variables	Negative correlations
Engaged in school	0.29	Negative about mathematics*	-0.32
Internal markers of achievement*	0.26		
External markers of achievement	0.25	Disengaged in learning	-0.23
		Negative about science	-0.22
		Parent-child friction*	-0.21
		Disrupted learning environment	-0.19
		Dissatisfaction	-0.14
		Comparative learning environment	-0.14
		Family pressure	-0.13

* variables included in model

Family income at 14, family income at 5, and maternal qualifications accounted for a significant amount of the variation in the logical problem-solving score. After taking those into account, some initial differences seen for different cluster groups did not remain in the model. This model accounted for 20 percent of the variability in age-14 logical problem-solving scores.

- Using internal markers of achievement was the factor positively associated with logical problem-solving scores.
- Having negative feelings about mathematics and experiencing parent-child friction were the factors that were negatively associated with logical problem-solving scores.

A regression model to see how earlier attitudinal competencies, age-12 school behaviour, and history of reading, TV watching, and enjoyment of school were related to age-14 logical problem-solving scores accounted for 26 percent of the variability in age-14 logical problem-solving scores. We found a similar pattern to that found for mathematics.

Always enjoying reading, or mainly enjoying it over the years, were positively associated with logical problem-solving scores, as was, to a lesser extent, curiosity scores at age 12, and perseverance scores at ages 8 and 10. Maternal qualification levels (but not family income) were also related.

COGNITIVE COMPOSITE SCORE

This composite score includes the three competencies covered above, plus writing. We include it here to give a sense of the factors that are common. A regression model accounted for 31 percent of the variability in these scores and showed factors that are mainly focused on attitudes to learning, how time is spent, and family difficulty: most of these will have developed over time, unlike the school-related factors.

- Having creative interests, parents with literate/involved interests, a family in comfortable financial situation, and using internal markers of achievement were the factors positively associated with cognitive composite scores.
- Feeling negative about mathematics, in the Tech art Māori subject cluster, in the *electronic games~no strong interests* cluster, and experiencing family pressure and parent-child friction were the factors negatively associated with cognitive composite scores.

The regression model that looked at earlier attitudes and behaviour at age 12, plus reading, TV watching, and attitude to school, identified always enjoying reading as the factor that was most positively related to cognitive composite scores. The attitudinal composite at age 12, and perseverance scores at ages 8 and 10 were also associated. This model accounted for 42 percent of the variability in age-14 cognitive composite scores. When we added in family income and maternal qualification, the variability accounted for rose to 51 percent.

ATTITUDINAL COMPOSITE

Positive interactions with family, teachers, and friends were positively correlated with scores on the attitudinal composite; conversely, negative correlations arise from negativity in all three of these dimensions for those with low scores, and risky behaviour.

Table 102 **Attitudinal composite scores and correlations with study factors at age 14**

	Positive correlations		Negative correlations
		Disengaged in learning	-0.43
Engaged in learning	0.55	Risky behaviour*	-0.42
Internal markers of achievement*	0.44	Negative about mathematics*	-0.40
		Negative about science*	-0.39
		Parent-child friction*	-0.38
		Negative about English*	-0.38
Absorbed in learning	0.37	Friends with risky behaviour	-0.36
Positive attitude to English teacher*	0.29	Family pressure*	-0.31
Inclusive family	0.28		
Supportive family	0.28		
Positive learning environment in English	0.28		
Positive attitude to science teacher	0.28		
External markers of achievement*	0.25		
Positive learning environment in science	0.23		
Family communicates well	0.22		
Positive attitude to mathematics teacher	0.20	Disrupted learning environment	-0.20
Solid friendships	0.19		
Challenging schoolwork	0.19		
Close parent-child communication	0.18		
Positive learning environment in mathematics	0.17		

* Variables included in model.

It is not surprising to see disengagement in learning at the head of the factors that are correlated with the attitudinal composite, because it is the students' teachers who rate the competencies included in the composite. However, parents' views of their child, formed from a different history, and seeing them in different contexts, also show moderate correlations: 0.47 with their view that their child was responsible, and 0.44 with their view that he or she was effective.

Family income at 14, family income at 5, and maternal qualifications also accounted for a significant amount of the variation in the attitudinal composite score. After taking those into account, initial differences for some clusters did not remain in the model. This model accounted for 39 percent of the variability in age-14 attitudinal composite scores. The factors had weaker effects individually than they did in the models for the cognitive competencies.

- Internal markers to gauge achievement, and having a positive attitude to one's English teacher were the factors positively associated with scores on the attitudinal composite.
- Risky behaviour, parent-child friction, and to a lesser extent, negativity about the three core subjects and family pressure, were the factors that were negatively associated with scores on the attitudinal composite.

When we looked back at attitudes and behaviour over time, enjoyment of reading was the factor with the strongest associations with the cognitive composites. It also had the strongest association with the attitudinal composite. Perseverance scores at age 12, the attitudinal composite score at age 10, and being described by their age-12 teacher as being good or organised also showed positive associations in a regression model that accounted for 41 percent of the variability in age-14 cognitive composite scores. Maternal qualification (but not family income) added to the model, increasing the variability accounted for to 43 percent.

TEACHERS' VIEW OF OVERALL ACHIEVEMENT

Overall, the sample's average score for overall achievement was 6.8 (s.d. 2.2) on a 10-point scale. Teachers' views of individual achievement bands reflected student social characteristics, along the same lines as we found when we looked at competency scores. Students in decile 1–2 schools had a lower average score for their overall achievement (5.7). The "risk" set of clusters also showed lower average scores. The differences were most striking in relation to enjoyment of reading. Those who hadn't enjoyed reading had an average of 4.3; those who always enjoyed reading between the ages of 8 to 14, an average of 7.8.

Table 103 below shows the correlations of overall achievement with other factors. These show reasonable (but not strong) agreement between teachers' views and students' views of how well they are doing, and their engagement in school and learning, and with parent views of their child's actions and approach to life.

Two different patterns are evident. When we look at the positive correlations, we see a pattern that students whose teachers think they are doing well overall are more likely to also be seen by their parents to be responsible and effective, and these students use internal understanding of progress as well as external markers (which reflect current progress), and they are more likely to be absorbed in learning. Few family and peer factors feature in this pattern.

If we think of the negative correlations as providing a set of "risk" factors, we see difficulties in all three key aspects of the relationships and activities in which 14-year-olds are finding and making themselves. We cannot conclude from this set of factors that these difficulties "outside" school—such as friction with family—are contributing to lower levels of engagement in school and achievement. However, when we put them with the picture of lower average scores for those who do not enjoy reading, who have no strong interests, want to stand out etc, we have a picture of risk factors that are related to the use of leisure and the kinds of resources available to young people outside school. Where these risk factors co-occur, the role of school may be different from its role in the lives of those who score well for overall achievement, its pull weaker, facing greater competition.

Table 103 ***Overall achievement (teacher view)* factor correlations with other study factors**

Factor	Correlation level
Responsible (parent view)	0.47
Engaged at school	0.44
Effective behaviour (parent view)	0.40
Internal markers of achievement	0.40
External markers of achievement	0.35
Confident at school	0.34
Absorbed in learning	0.27
Self-confident (parent view)	0.20
Positive attitude to science teacher	0.19
Positive attitude to English teacher	0.18
Disrupted learning environment	-0.19
Friends with risky behaviour	-0.26
Parent-child friction	-0.30
Family pressure	-0.31
Disengaged in learning	-0.32
Risky behaviour	-0.32
Negative view of English	-0.34
Negative view of science	-0.38
Negative view of mathematics	-0.45

A regression model that included classroom experiences, views of learning and teachers, use of internal markers of achievement, family, friends, and the cluster variables, and took into account family resources, accounted for 35 percent of the variability in overall achievement levels for the sample at age 14.

- Using internal markers of achievement and being in a comfortable financial situation were the factors from this set that were most positively related to overall achievement level at age 14.
- Being involved in bullying over the last 5 years, having negative feelings about mathematics, and to a lesser extent, family pressure, parent-child friction, and having negative feelings about science were the aspects of this set that were most negatively related to overall achievement at age 14.

CONSISTENCY IN PERSPECTIVES

Here we first describe how parents saw their child's responses and attitudes, and then we look at the consistency between parent and child, parent and teacher, and teacher and child perspectives, This provides material relevant to research question 9: *What consistency is there between young adult, parent, and teacher reports of the teenagers' engagement in learning, attitudes to school, and overall performance?* and also to research question 10: *What consistency is there between competency levels at age 14 and young adults' judgements of their school experiences, parental satisfaction with their child's school, whether the school was the first choice of parents and young adults* [not reported here, but in the section on school choice], *teacher perceptions of the young adult's school engagement, and parental support for learning.*

Parents were asked to say how often their child did a set of 27 items, some of which were drawn from the items asked of teachers. A factor analysis gave three factors that used all but two of the items; these are described below before we look at each of the three factors, and what they have in common.

Over half the sample was seen to think outside the square and have innovative ideas at least often, and they could also vary their language to suit topic or audience.

Table 104 **Young people's innovation and language range**

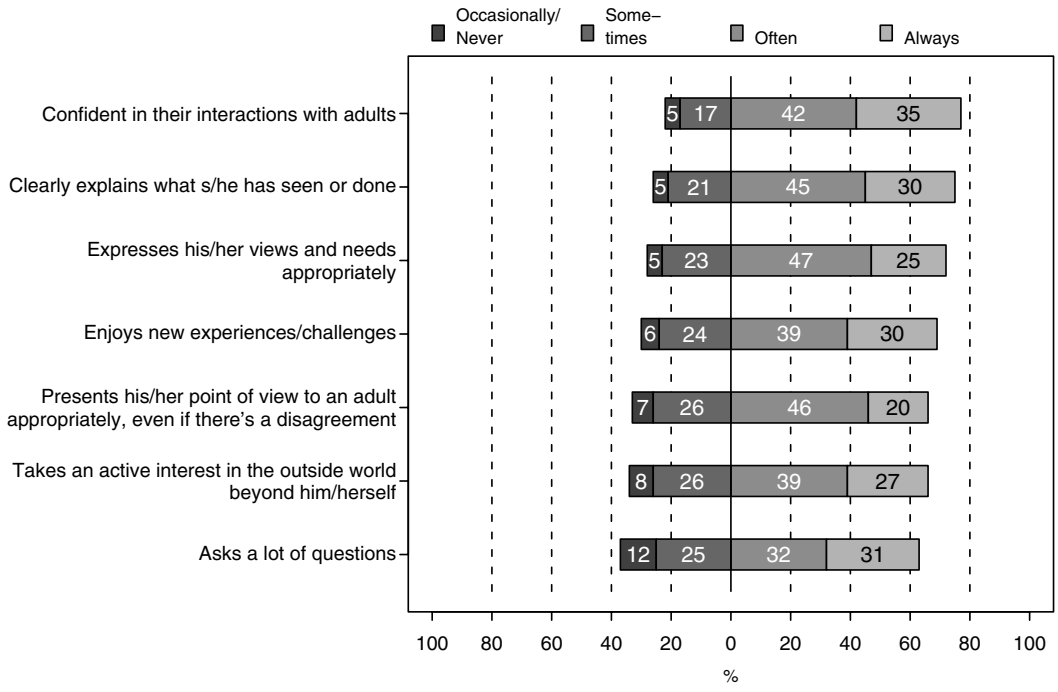
View→	Always	Often	Sometimes	Occasionally/ never
Aspect↓	%	%	%	%
Thinks "'outside the square" – is innovative	18	42	29	10
Changes language for situation/audience	20	45	21	5

Not all parents replied to the second question, so the percentage does not total 100.

Young people's self-confidence factor (parent view)

Parents of around three-quarters of the sample thought they were confident and clear in their interactions with adults, and around two-thirds saw their children as confident in the world around them: actively interested in it, able to enjoy new experiences, and asking questions.

Figure 23 ***Self confidence* factor (parent view) items**

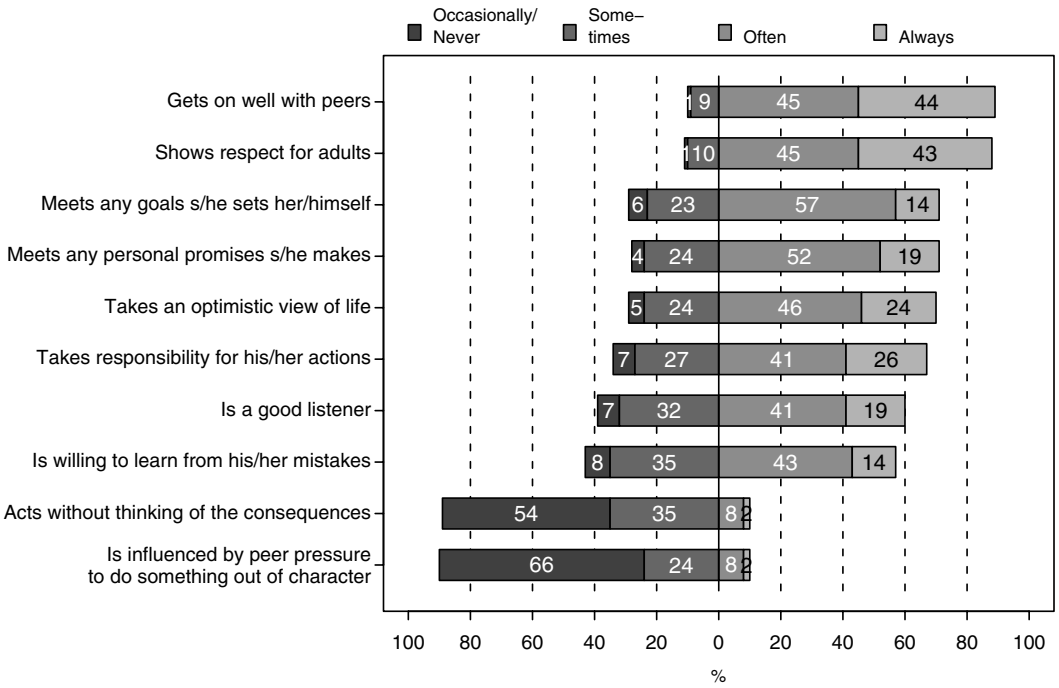


Most of our sample was seen as confident. The average score for this factor was 7.6 (s.d. 1.4). Self-confidence levels as seen by parents were unrelated to gender, ethnicity, or family income (though there was a non-significant linear trend evident in relation to family income, from an average score of 7.3 for students from low-income families to an average score of 7.7 for those from very high-income families). Young people with all-round interests or creative interests had higher average scores (8 and 7.7 respectively).

Effectiveness factor (parent view)

Only a few parents thought their child sometimes had difficulty getting on with their peers, or with adults. Most parents thought that peer pressure did not lead their child to act out of character. Much like adults, only a minority of the young people were seen to always take responsibility for their actions, show (unassailable) optimism, or willingness to learn from all their mistakes.

Figure 24 ***Effective* factor (parent view) items**

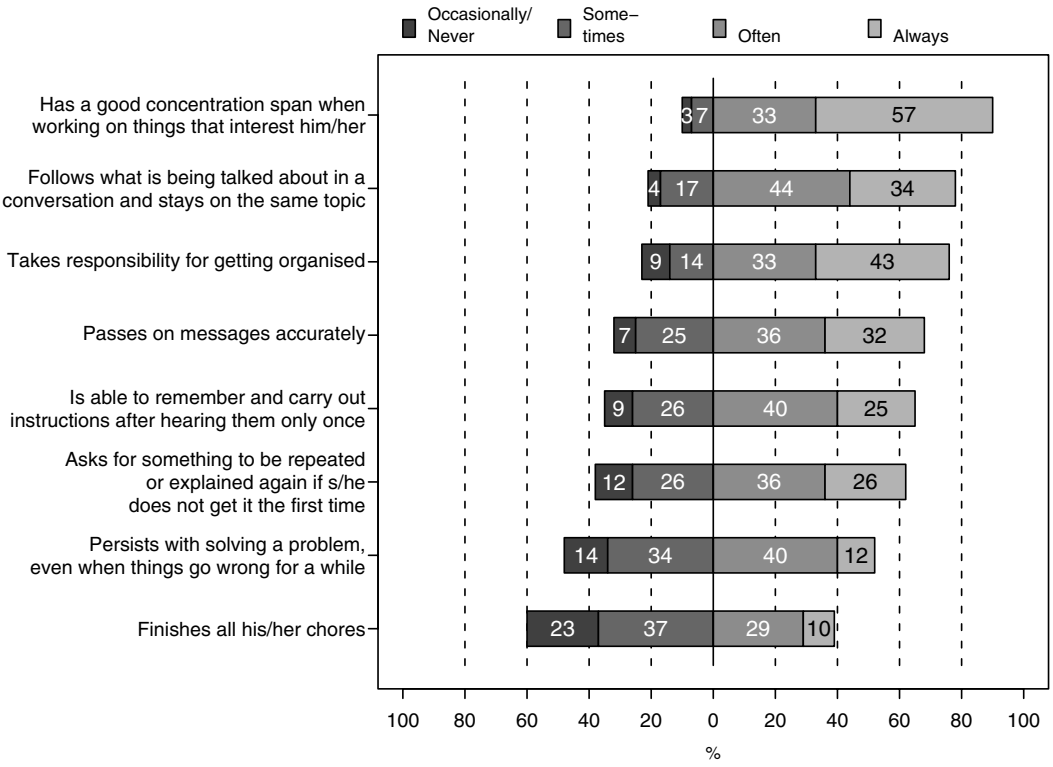


The average score for *effectiveness* was 7 (s.d. 1.2). Average scores increased with family income levels (from 6.6 for those in low-income families, to 7.4 for those in very high income families), and with maternal qualification (from 6.6 for those with non-qualified mothers to 7.2 for those with tertiary-or university-qualified mothers). Males had somewhat lower average scores (6.9 cf. 7.1 for females). There was a trend for average scores to be higher in line with increases in school decile. Young people who were not currently involved in bullying had higher average scores than bullies (6.5).

Responsibility factor (parent view)

Most parents thought their 14-year-olds were often persistent and attentive to detail, but the levels dropped when the persistence was required for solving a problem, or completing chores.

Figure 25 ***Responsibility* factor (parent view) items**



The average score for *responsibility* was 7.4 (s.d. 1.3). Average scores increased with family income levels (from 7 for those in low-income families, to 7.7 for those in very high-income families), and with maternal qualification (from 6.8 for those with non-qualified mothers, to 7.6 for those with tertiary- or university-qualified mothers). Males had lower average scores (7.1 cf. 7.6 for females). There was a non-significant trend for the average score to increase with school decile. Young people who were not currently involved in bullying had higher average scores than bullies (6.9).

Associations with the set of risk variables

"Risk" experiences that we saw associated with young people's approaches to school were also associated with their approaches to the world as their parents saw it, suggesting that these are not separate worlds, with impermeable boundaries. The table below shows the variables that were associated with lower average scores for these factors.

Table 105 **Risk factors and student attitudes (parental perspective)**

Risk factor↓	Self-confident	Effective	Responsible
Electronic games~no strong interests	✓	✓	✓
High levels TV over time	✓	✓	✓
No enjoyment of reading over time	✓	✓	✓
Non-completion of homework over time	✓	✓	✓
Experience of bullying over time	✓	✓	✓
Current experience of being a bully	✓	✓	✓
Standing out values		✓	✓
Difficult school behaviour age 12		✓	✓
High absenteeism		✓	✓
Low school motivation	✓	✓	✓
Adverse experiences		✓	✓
Mixed-low involvement parent interests	✓		✓

Consistency between parents' views and their children's views of school

Some consistency exists between students' views of their engagement in school, and parents' views of how their children approach the world at large, and what they report about their child's current feelings about school. Correlations were weak to moderate, with most between 0.20 and 0.30, and lower with subject-level student views. There was little correlation between parents wanting to change something about their child's school, and student views of school.

Consistency between parent and teacher views of students

Parents see their children in a different context than their teachers. While we asked them some of the same questions, we did not expect an exact correspondence, and nor did we get it. However, the correlations were more at a moderate than weak level; they were stronger with the *effective* and *responsible* factors than with the *self-confident* factor. Parent satisfaction with their child's progress and concerns they may have about their child at school are reasonably correlated with teacher perspectives. Parent views about teachers, however, are not, and nor is their desire for some change at the school, suggesting that such desires are not entirely founded on their own child's current achievement or attitudes to school.

Table 106 provides the correlations between the parent factors and other responses we looked at, and the attitudinal composite, and teachers' view of overall achievement.

Table 106 **Correlations between parent and teacher views of student**

Parent factor/view↓	Attitudinal composite	Overall achievement
Responsible (child)	0.47	0.48
Effective (child)	0.44	0.39
Parent satisfaction with child's progress	0.41	0.37
Parent has concerns about their child & school	0.41	0.35
Child's current feelings about school	0.34	0.28
Parent view of teachers' support for their child's learning	0.32	0.24
Self-confident (child)	0.23	0.20
Child's current feelings about teachers	0.22	0.12
Parent view of teachers' support for their child's emotional wellbeing	0.20	0.09
Parent view that change needed at school	0.07	0.02

Consistency between student and teacher views of student attitudes

Consistency at a moderate level also exists between student views of how they act in school, and what they make of it, and teacher views of how students act, and their overall achievement level.

Table 107 **Correlations between student and teacher views**

Student factor/view↓	Attitudinal composite	Overall achievement
Engaged in school	0.55	0.44
Confident at school	0.41	0.33
Absorbed in learning	0.37	0.27
Positive attitude to English teacher	0.29	0.17
Positive attitude to science teacher	0.28	0.19
Positive learning environment in English	0.27	0.15
Positive learning environment in science	0.24	0.14
Positive attitude to mathematics teacher	0.20	0.11
Positive learning environment in mathematics	0.17	0.07
Disengaged in learning	-0.43	-0.32

SUMMARY

Family resources—income and maternal qualification—are reflected in student competency levels. But in models that included factors that showed significant correlations with the competencies, and earlier competency levels and ways of spending time, we identified some factors that are also linked over and above these.

Positive factors are:

- Enjoyment of reading over time: this is particularly strong
- Internal markers of achievement
- Earlier levels of perseverance (and for mathematics, curiosity)
- Comfortable family financial situation

Negative factors are:

- Experiencing family pressure or parent-child friction
- Being negative about mathematics
- Being involved in bullying over the last 5 years
- Risky behaviour

Parents of around three-quarters of the sample thought their child was confident and clear in their interactions with adults, and around two-thirds saw their child as confident in the world around them: actively interested in it, able to enjoy new experiences, and asking questions. Although parents do show concern at times about their child's friends, most thought that their child did not act out of character because of peer pressure. Most thought their child was often persistent and attentive to detail, but persistence levels were lower when it came to problem solving or completing chores. Parent views of their child's effectiveness and responsibility, and to a lesser extent, their self-confidence, were related to the risk variables in much the same way as the teacher views. Thus, those who were in the *electronic games~no strong interests* group, who had watched high levels of TV over time, or not enjoyed reading, were at lower levels.

Parents do see their children in different contexts than do teachers, but there was a moderate correlation between teacher and parent views of students. The correlations between parent views of how their child approaches the world and their perspective on their child's enjoyment of school, and with students' views of their engagement in school were weaker. Parent desires to change something about their child's school were not correlated with either their child's view, or teachers' views of their child's progress. Consistency between teachers' views of a student's approach to classroom life and work, and their overall achievement level, and with student reports of their learning engagement was moderate. The level of the correlations is high enough to suggest that there is some shared information, but low enough to affirm differences in perspectives in what is seen and understood.

10. Making the most

One of the key challenges for educators is to improve the achievement of students from families with low levels of income and parental education. When the study students were aged 12, we found that children from low-income homes when they were aged 5 were half as likely as those from high-income homes to score at or above the study median for mathematics and the PAT reading comprehension test. We found the same patterns again at age 14.

Figure 26 **Maternal qualification levels and age-14 mathematics and reading scores**

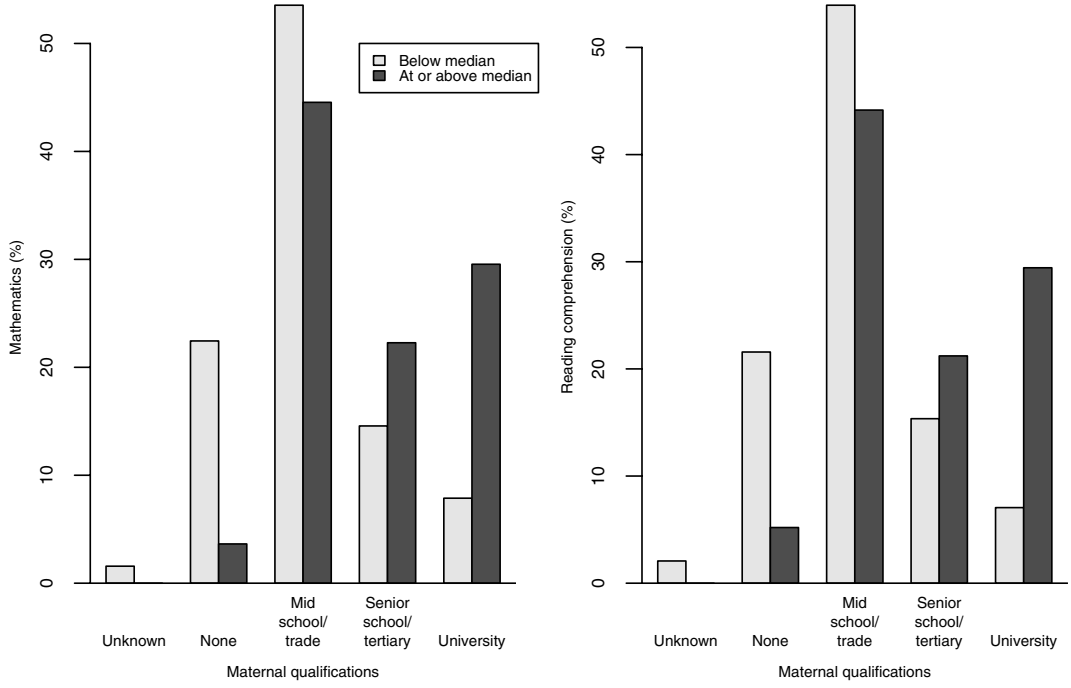
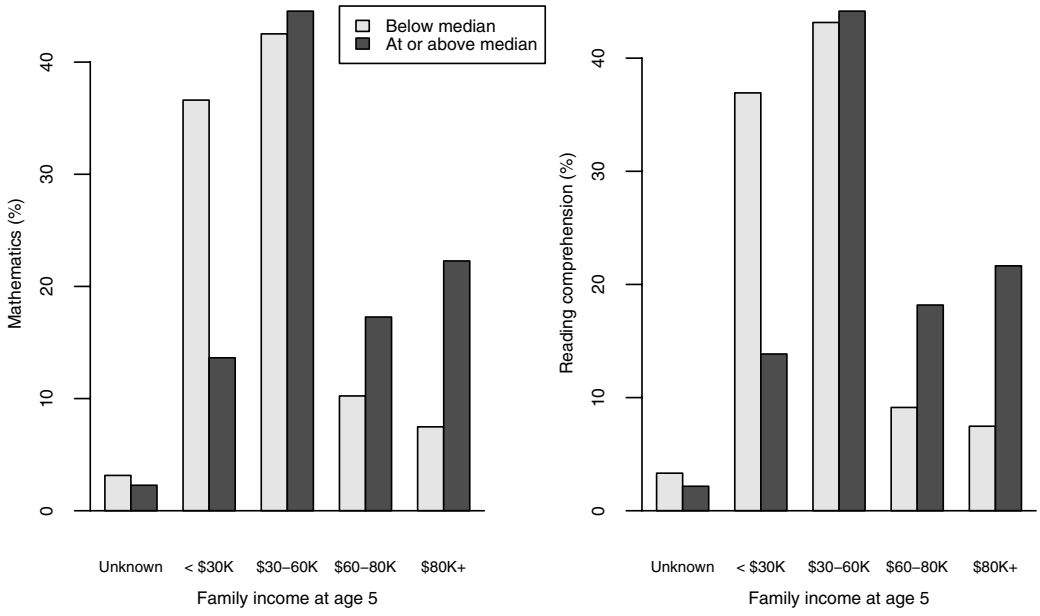


Figure 27 **Family income and age-14 mathematics and reading scores**



One of our research questions was:

What are some key factors which can mitigate the effect of low parental qualifications and low income on competency levels?

We were able to look at low income, but not low parental qualifications because there were too few students in our sample in the group whose mothers had no qualifications, who had achieved at the median or above.

There were 122 students at age 14 whose early family incomes had been low ($30,000 or less in 1993). Of this group, 25 percent had mothers with no qualification. Just over half had a trade or mid-school-level qualification as their highest, and 13 percent had a senior secondary or tertiary qualification.[25] Seven percent had a university qualification.

These are small numbers, but sufficient to allow us to explore the factors that might make a difference within this less-advantaged group. We see how they compare with the factors that have emerged from our analysis for the sample as a whole, and how they compare with a similar analysis done using data relating to age 12 (Wylie, 2003). We have used cross-tabulation for this exploration. We have called those scoring at or above the study median at age 14 the "high" scorers, and those scoring below the study median "low" scorers.

PATTERNS ACROSS COMPETENCIES AND TIME

Three different patterns emerge when we compare the scores of the two groups across competencies, and across time.

1. The high scorers in mathematics also had much higher average scores on the PAT Reading Comprehension test (63 percentage points cf. 37 percentage points for the low scorers); but the difference in average logical problem-solving scores was small (81 percentage points for the high scorers cf. 71 percentage points for the low scorers). Similarly, the difference on the average attitudinal composite was small (70 percentage points for the high scorers cf. 60 percentage points for the low scorers). This suggests that what might be hindering the performance of some of the low scorers is not so much non-verbal reasoning (as indicated by the Ravens test), or attitudes to work, as a lack of literacy.
2. Some low scoring students for mathematics did achieve reasonably high scores for the reading, logical problem solving, and attitudinal competencies. However, the minimum scores for that group were only half the minimum scores for the high scoring group. Thus, for some, but not all, individuals there may be differences in non-verbal reasoning and attitudes that made it harder for them to perform well in mathematics.
3. When we looked back at earlier scores, we found that the size of the differences between the high and low scorers was evident by age 8. However, some later low scorers had scores as high or just below the maximum scores for the high scorers, indicating that for these students, early promise or gains may have been undermined by events in their life between ages 8 and 14.

We have age-5 and age-6 competency scores for some of the sample. With that caveat, and the further caveat that the number of high scorers for reading for whom we also have age-5 and age-6 competency scores is only 13, there are some interesting patterns. The high scorers had higher average scores for mathematics and logical problem solving at age 5 than the low scorers. This is consistent with the pattern for the sample overall. The gap between mathematics and logical problem-solving scores for the two groups was also evident at age 6 in relation to mathematics scores—but not in relation to reading and attitudinal scores.

Early literacy scores at age 5 were not different for the low and high scoring groups. However, they were different at age 6, indicating that the first year of school was particularly important for reading for children from low-income families.

The attitudinal composite scores tend to have a less consistent relationship over time than mathematics (the most consistent) and reading. It is only by age 12 that a clear difference is evident between those who scored low or high 2 years later.

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[25] These are grouped together for analysis purposes because of a similar distribution in competency scores.

SOCIAL CHARACTERISTICS

Mathematics

The higher the level of maternal qualification, the more likely it was for children to be in the high scoring group for *mathematics* (rising from 16 percent of those with non-qualified mothers, to 30 percent of those who had a school qualification, 35 percent of those who had a tertiary/trades qualification, and 88 percent of those with a university qualification). Probably not unrelated, more of the high scorers were in families whose incomes rose over the period to reach over $100,000 at age 14 (13 percent cf. 2 percent of the low scorers). However, this was the only marked difference in current family income levels.

Gender, ethnicity, and patterns of family stability, maternal employment, and family welfare receipt over the ages of 8–14 were not related to higher or lower mathematics performance among the low-income group.

Reading comprehension

Students whose family income was low when they were near age-5 were more likely to be *reading* at or above the median at age 14 if:

- their mothers had some qualification (rising from 10 percent of those whose mothers had no qualification to 88 percent of those with a university qualification);
- they were Pākehā/European or Asian students (33 percent cf. 9 percent of the Māori and Pacific Island students);
- their current (age-14) family income was more than $30,000 (88 percent of the high performers, and 65 percent of the low performers);
- their family spent less than a quarter of their income on housing (72 percent of the high performers cf. 41 percent of the low performers), and had no difficulty paying all bills each month (44 percent of the high performers cf. 26 percent of the low performers); or
- their family income was not currently derived from a state benefit (31 percent cf. 18 percent). However, there was no consistent relationship with patterns of benefit receipt for the age-8 to age-14 period.

Other social characteristics and variables were not associated with differences in reading performance.

Attitudinal composite

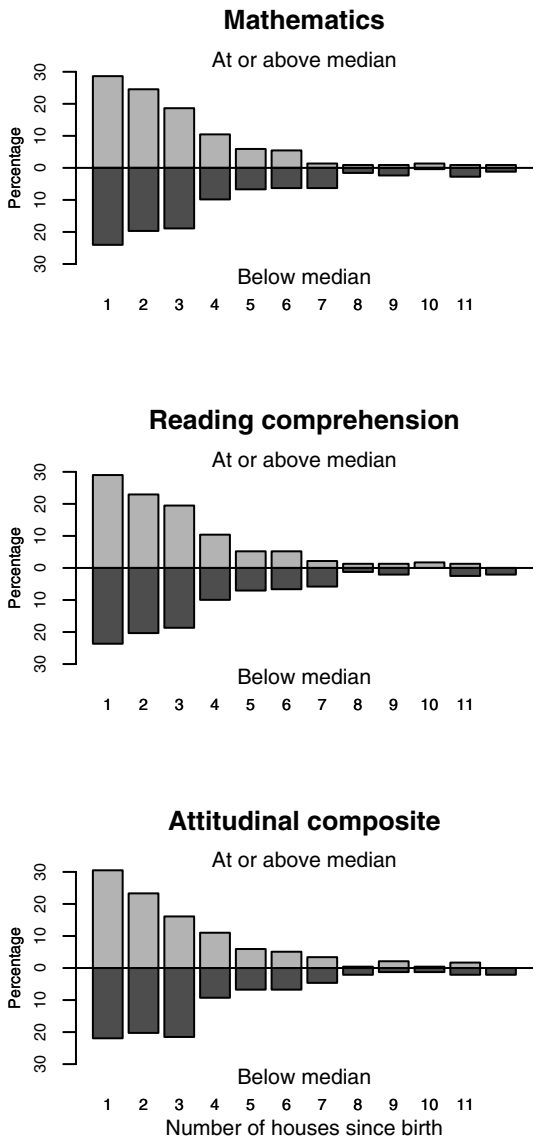
Maternal qualification, ethnicity, current family income, family income increase, family stability, and welfare receipt over the period age 8 to age 14 were similar for the high and low scoring groups on the attitudinal composite. Forty-three percent of females were in the high scoring group cf. 26 percent of the males.

The three competencies and family factors

Family type, number of siblings, total number of people living in a household, or how well those who lived apart from one biological parent got on with them were unrelated to how well the students scored on these three competencies. Maternal employment was also unrelated to the competency score differences between the two groups, but there were more parents employed in professional and managerial roles among the high scorers (59 percent cf. 20 percent for mathematics, 78 percent cf. 31 percent for reading, and 64 percent cf. 34 percent for the attitudinal composite).

Low scorers had shifted house more on average.

Figure 28 **Number of houses lived in by age 14 and competencies**



AGE-14 SCHOOL, FAMILY, AND FRIENDS FACTORS

The next table shows differences between high and low scorers in relation to the set of factors we used in our analysis at age 14. A tick indicates a statistically significant difference ($p < 0.05$), and a / mark, a difference that was slightly above that. The differences were consistent with the differences seen for the sample overall, that is, school engagement was associated positively with higher scores, and risky behaviour with lower scores.

Note that mathematics and reading appear to be less affected by current classroom environments, other than if they are disrupted, and to a lesser extent, comparative learning environments. The attitudinal composite shows links with family and friends factors, but mathematics does not, other than a non-significant trend with family pressure; reading comprehension lies between these two.

Table 108 **Age-14 study factors showing differences between high and low performance in low-income group**

Factor↓	Mathematics	Reading comprehension	Attitudinal composite
Engagement in school	/	✓	✓
Confident at school		✓	✓
Disrupted learning environment -	/	✓	✓
Comparative learning environment -	/	/	/
Absorbed in learning		/	✓
Positive learning environment – English			✓
Positive learning environment – mathematics			/
Positive learning environment – science			/
Positive about English teacher		/	✓
Positive about mathematics teacher			
Positive about science teacher			/
Challenging schoolwork			✓
Disengaged in learning -	/	✓	✓
Negative about English -	✓	✓	✓
Negative about mathematics -	✓	✓	✓
Negative about science -	✓	✓	✓
Internal markers of achievement	✓	✓	✓
External markers of achievement	✓	✓	✓
Overall achievement	✓	✓	✓
Friends with risky behaviour -		✓	✓
Solid friendships			✓
Family communicates well			/
Family pressure -	/	✓	✓
Inclusive family			✓
Supportive family			✓
Risky behaviour -		✓	✓
Self-confident (parent view)	✓	✓	/
Effective (parent view)	✓	✓	✓
Responsible (parent view)	✓	✓	✓
Parent-child friction -		✓	/
Parent-child communication			
Dissatisfaction			
Praise & achievement			

- = the high performers had lower scores on these factors than the low performers

When we looked at patterns of schools over time, we did find that the high mathematics and reading comprehension groups were less likely to be attending decile 1–2 schools (5 percent cf. 20 percent in mathematics), and more likely to have attended decile 9–10 schools over time (34 percent cf. 15 percent in mathematics). High mathematics scorers were more likely to have been in mainly small classes since age 8 (29 percent cf. 8 percent). Low scorers were more likely not to choose their current school if they could go back in time (23 percent cf. 8 percent for mathematics).

The average number of schools attended by the low scorers was slightly more than the high scorers: around 3.5 cf. 2.9. This was mainly because the low scoring mathematics and reading groups were half as likely as the high scoring mathematics and reading groups to have attended only two schools. At the other end of the range of number of schools attended, the differences were most evident in relation to mathematics: 35 percent of the low mathematics scorers had attended four or more schools by age 14 cf. 17 percent of the high scorers.

Parents' views also showed some differences. Parents of high scorers for all three competency areas were more likely to think their child had settled into secondary school straight away (for mathematics, 71 percent cf. 45 percent of low scorers). Parents of low scorers were more likely to say the secondary school attended by their child was chosen because it was the closest one (37 percent cf. 22 percent for mathematics). Parents of high performers were more likely to be talking with their child about school, and about what they were reading. High performers were more likely to say they chose the school with their parents (a range of 41–47 percent over the three competencies cf. 21–23 percent).

The majority of the high performers thought they would stay at school until the end of Year 13 (between 84–91 percent). This contrasts with the 59–62 percent of low performers who would remain until the end of secondary school. Parents of high performers were more likely to want them to get a university education (54–75 percent, with the highest proportion for the reading high performers, cf. 31–37 percent for low performers). High performers were more likely to see themselves undertaking further study when they left school (60–75 percent cf. 44–50 percent)

Doing well at school was more important for high performers on attitudinal composite (68 percent cf. 45 percent of low performers). "Enjoying the things I do" was more important to high performers (53–59 percent cf. 33–37 percent). There are few differences in relation to values as an adult: similar proportions of low and high performers wanted a good education or an important job. But high mathematics and reading performers were more likely to mention an interesting job (51–53 percent cf. 34 percent).

RELATIONS WITH PEERS

High performers were more likely to mention talking as an activity with their friends (51–65 percent cf. 35–40 percent), and that a good thing about their friendship was that they had someone to talk with (62–69 percent cf. 34–36 percent), and someone to do things with (46–53 percent cf. 32–34 percent). High mathematics and reading performers were more likely to say that a good thing about their friendships was shared interests (43–53 percent cf. 27–30 percent). Competition was more likely to be a not-so-good aspect of friendships for high performers (8–13 percent cf. 1–4 percent).

High mathematics performers were less likely to mention informal physical activity as something they did with their friends (22 percent cf. 46 percent). High performers in reading or attitudinal competencies were less likely to mention going out with their friends with no fixed aim (38 percent cf. 50–51 percent of low performers).

Faced with a situation where their parents told them not to do something, and their friends really wanted them to do it, high performers were more likely to say their reaction would depend (33–42 percent cf. 16–19 percent)—this is consistent with the greater emphasis on negotiation with parents in relation to breaking rules.

However, faced with someone giving them a hard time in the school grounds, high performers were no more or less likely to be assertive, or aggressive (verbal or physical). High scorers on the attitudinal composite were more likely to go somewhere else or do something else (45 percent cf. 13 percent of the low scorers), a trend that was also evident for the high mathematics and reading performers (31–32 percent cf. 19–21 percent). If the hard time continued, those who scored highly on the attitudinal composite were less likely to use aggression (10 percent cf. 35 percent of low scorers); and high performers continued to be more likely to leave the situation.

Twenty-four percent of this group had been picked on or bullied in the last couple of months. This was more likely for low reading performers (26 percent cf. 16 percent of the high performers): there were also more who said they had picked on or bullied someone else in this group (17 percent cf. 7 percent).

TIME USE DIFFERENCES

We saw with the whole sample that differences in how young people spent their time, currently as well as previously, had some associations with their age-14 performance. With the low-income group, time use also showed some consistent differences between high and low scorers.

Table 109 **Time use differences in relation to mathematics**

	High scorers %	Low scorers %
Read often or once-twice a week	66	42
Play electronic games often	13	30
Heavy TV watchers age 8–14	13	32

High reading scorers showed a similar pattern, but the difference in TV watching habits was evident in current use, rather than over time.

High performers were more likely to mention sitcoms or family viewing programmes[26] (30–41 percent cf. 21–24 percent); and for the mathematics and reading high performers, cartoons (57–63 percent cf. 44–46 percent), and adventure/sci-fi or mystery (49–53 percent cf. 35–36 percent).

High performers were more likely to have these in their room:

- a desk (75–84 percent cf. 54–58 percent);
- a computer (24–28 percent cf. 11–12 percent, for mathematics and reading performers); and
- Internet access (16–19 percent cf. 6 percent, for mathematics and reading performers);

and less likely to have:

- a television (47–50 percent cf. 28–35 percent, for reading and attitudinal performers).

The high performers were more likely to be said by their parents to be engaged in performing arts organisations (between 25–32 percent cf. 10–12 percent of the parents of the low performers). Parent information about whether their child played music or sang showed half the high reading scorers did so cf. 31 percent of the low reading scorers.

Low and high performers were equally likely to have a regular job. However, the low reading performers spent longer on their jobs: 6.39 hours a week cf. 4.61 for high reading performers; the low scorers on the attitudinal composite spent an average of 6.43 hours a week cf. 5.08 hours for the high scorers.

Interaction with parents

Things they did with their parents were largely much the same, but parents of high performers were more likely to mention:

- informal physical activity (40–49 percent cf. 25–30 percent);
- eating together (38–53 percent cf. 19–24 percent); and
- going to the movies (25–30 percent cf. 13–16 percent).

Their parents said they were more likely to negotiate or discuss things with their child if family rules were broken (48–58 percent cf. 30–35 percent of low performers)—the same trend was evident in their children's answers to our question, but at much lower proportions: 27–35 percent cf. 10–15 percent of low performers). However, parents of both groups were just as likely to use negotiation if there was a disagreement between parent and child.

[26] They were asked to name their three favourite television programmes, and these were then categorised.

Both groups reported family expectations or rules relating to their use of time. The low mathematics performers were somewhat more likely to have rules about language use (81 percent cf. 66 percent of the high performers, $p = 0.06$). The low reading performers were less likely to have rules about television watching (55 percent cf. 73 percent of the high performers), or playing video etc games (47 percent cf. 78 percent); the low scorers on the attitudinal composite were also less likely to have rules about playing video etc games (49 percent cf. 69 percent).

However, parent perceptions of what they have rules about for their age-14 child did show more differences: parents of low mathematics scorers were more likely to say they had rules or expectations about the time their child spent with friends, their use of the telephone, dress, and movies/videos they could watch. Parents of low reading scorers were more likely to say they had rules or expectations about the time their child spent with friends, dress, and their bedtime on school days. The time their child spent with friends, and housework, were the two areas of rules that were more likely to be mentioned by parents of low scorers on the attitudinal composite.

ICT use

The high performers for all three kinds of competency were more likely to use a computer out of school for:

- word processing (70–73 percent cf. 51–53 percent);
- graphics (38–47 percent cf. 22–24 percent);
- homework/projects (90–94 percent cf. 68 percent);
- maintenance of own or family computer (25–28 percent cf. 14–16 percent);
- email (78–82 percent of high performers cf. 61 percent of low performers in mathematics or reading); or
- use the Internet to seek information for homework/projects (around 13 percent difference).

Other uses of the computer at home, including writing programs were not different between the two groups.

The high performers for mathematics and reading spent much more time on the computer on average, perhaps reflecting their somewhat greater tendency to use it for things that can take longer, e.g. word processing or seeking information. The average time per week for the high mathematics performers was 7.41 hours, compared with 4.75 for the low mathematics performers. For the high reading performers it was 6.02 hours, compared with 4.88 for the low reading performers.

Reading habits and access

High performers were more likely to read widely, use a library, have access to a range of books in their home, and enjoy reading.

Table 110 **Reading access and enjoyment differences between high and low performers in early low-income group**

Reading access & enjoyment	High maths performers (*n* = 38) %	Low maths performers (*n* = 84) %	High reading performers (*n* = 32) %	Low reading performers (*n* = 88) %	High attitude performers (*n* = 41) %	Low attitude performers (*n* = 81) %
More than 100 books in main home	79	62	84	60	82	59
Use public library	68*	63*	78	60	78	58
Use public library to get books for own interest	61	47	65	44	67	41
Use public library to get books for schoolwork	58	44	59	43	61	40
Enjoys reading	53	37	72	32	71	27
Qualified enjoyment of reading	34	31	28	32	22	37
Do not enjoy reading	13	32	0	36	7	35

* This difference was not significant.

High performers enjoyed a wider range of reading material: fiction, non-fiction; they also made more use of reference material, and were more likely to enjoy word puzzles or crosswords. High performers in reading and attitudinal competencies were slightly more likely to read comics. Both groups were equally likely to read the other kinds of material we asked about, including a daily newspaper or magazines.

Writing

Enjoyment of writing was much the same for high and low performers in mathematics and reading; but those with high scores on the attitudinal composite were more likely than those with low scores to enjoy writing (59 percent cf. 27 percent). High performers in the attitudinal competencies were most likely to keep a journal or diary (43 percent cf. 23 percent of low performers), to write poems or plays (33 percent cf. 13 percent), or lyrics for songs (30 percent cf. 13 percent).

Homework

Overall, high performers were spending between half an hour to an hour more on homework each week than the low performers, with averages between 5.3 to 5.8 hours a week. They were no more likely to say they liked doing homework, or to feel that it was important to do homework. However, they were less likely to find it hard to get their homework done (13 percent of the high mathematics performers did cf. 23 percent of the low mathematics performers; 9 percent of the high reading performers did cf. 24 percent of the low reading performers; and 5 percent of those with high attitudinal composite scores cf. 27 percent of those with low attitudinal composite scores).

TRENDS OVER TIME

Early childhood education

We are limited by smaller numbers in looking at early childhood education experience. We have data for 19 of the high mathematics performers, and for 49 of the low mathematics performers. None of the differences found reached significance, but some trends that seem likely to reach significance with a larger sample, because they are consistent with patterns for the whole sample, were found:

- The high mathematics performers' final ECE service was more likely to have been one where their peers were mainly middle-class, or from a wide social range (74 percent cf. 51 percent).
- The low performers more likely to have attended an ECE service that scored in the bottom quartile with respect to ECE staff responsiveness to children (39 percent cf. 21 percent), and in the bottom quartile for being "print-saturated" (45 percent cf. 26 percent).
- Low reading performers and those with low attitudinal composite scores were also more likely to have attended an ECE centre that scored in the bottom quartile with respect to aspects of quality: ECE staff responsiveness to children, their guidance of them in play, their joining them in play (both indicating more opportunity for adult-child language interaction), and whether the environment was print-saturated. However, ECE centre socioeconomic mix was not related to reading performance, or attitudinal composite score.

Earlier habits

We looked at whether there were differences between the groups in terms of earlier habits. There were some trends indicating that reading played a somewhat greater role for high scorers, and electronic games and talking to friends, a greater role at age 12 for low scorers. Parental expectations were already different at age 8, when the proportion of high scorers' parents who wanted them to attend university was almost double that of the proportion of low scorers' parents.

Teachers' judgements of the students' overall level of achievement at age 10 put 47 percent of the high mathematics scorers at age 14 at the highest level, and 41 percent of the high reading scorers and 39 percent of the high attitudinal scorers; this compares with 7, 11, and 10 percent of the low scorers. Thus these two groups were not hard and fast at age 10: some students did make more progress than the age-10 teachers might have expected. Some students' earlier promise also seems not to have materialised.

But there were similar proportions of each group at the next highest level, and some of the high scorers at age 14 were seen by their teachers 4 years earlier to be achieving below average overall. Thus, while the importance of early progress is evident, it is still possible for individuals to make gains over later stages: the die is not fatally cast, with teachers, students, and parents unable to work together to improve performance.

SUMMARY

At age 12, within the early low-income group, there are some further differences in family resources that distinguish high scorers in this group from low scorers. High scorers had the advantage of higher maternal qualification levels, and (probably linked to that), rising family incomes over the past 9 years. They seem to have had more stability in their housing, but otherwise, the low scorers have had no more, or less, volatility in their family lives.

As with the whole sample, high mathematics scorers were likely to have a good level of mathematics when they started school. There were indications that high scorers were more likely to have attended early childhood education that offered good staff-child interaction (including language use), and print-saturated environments. They were also more likely to have attended early childhood education services that served mainly middle-class children, and less likely to have attended decile 1–2 schools: suggesting benefits gained from advantaged peers.

The first year at school was more important for the high performers for reading comprehension in the low-income group. However, there were initial high performers among both low and high performers, indicating that for some individuals, early promise or gain is undermined by events and experiences occurring after age 8.

Literacy and the use of it—the enjoyment of it—was a key factor that appeared to distinguish the high from the low scorers in this group: this is also consistent with the patterns for the whole sample. There would appear to be somewhat more sharing of experiences between parents and students, whether school or leisure. Relations with peers tended to be more positive, and also involve more sharing (and communication). As with others, high scorers in the low-income group are more engaged in school, and more likely to use internal markers of achievement.

When we did this analysis at age 12, we saw similar patterns, but the differences relating to school engagement were not so clear. This may point to the cumulative frustrations for those with low levels of literacy and numeracy, and with them, the growing attractions of other ways of spending time. The patterns reported in this chapter add weight to the importance of gaining literacy and mathematics knowledge and skills early on, and then working to ensure they are maintained—not simply for school or exam use, but as paths to enter other positive experiences.

11. Growing independence

In many ways, we can be encouraged by what we have found as the participants in the Competent Children, Competent Learners study turn 14. Most have reached the venturesome stage of mid-adolescence in good shape. They have positive interactions with family and friends, and they value family and friends. Learning and school continue to engage them. They have out-of-school activities they enjoy spending their time on. At the same time, they are also exercising more independence, forming themselves more as distinct individuals. Feeling respected and known, by teachers as well as family, becomes increasingly important. This can mean that there is more questioning of adult expectations and structures, as independence and individual identities grow.

But some appeared to have already formed identities that did not find support or enjoyment with family or in school, and were focused on activities of risk, defiance, or manipulation (e.g. bullying relations). Their sphere of experience often seemed narrower, however, and less satisfying: a repetitive circle rather than the spirals of growing independence evident in the majority. These are the young people who are often of most concern to parents, teachers, other adults, other students, and policy makers.

This study provides material that allows us to explore whether there are some environments and experiences that are more likely to lead to negative than positive paths through adolescence. We say likely, because while we have found some reasonably strong connections over time, and between what is happening at home and what is happening at school, none of the competency levels, engagement, or behaviour of the 14-year-olds in this study is completely predictable. That gives parents and teachers ground for hope—and also continuing responsibility. For example, we see in this study that although a Year 9 or 10 student's confidence or willingness to learn mathematics may have been eroded by previous difficulties, they are not immune to a positive learning environment.

Nonetheless, those whose earlier foundations were more solid are in a better position by age 14. The strong focus on reading and mathematics in the early years of primary school is particularly important for those who may have had fewer experiences involving the use of language, symbols, and patterns in their preschool years. But it is not enough just to learn to read. One of the strongest indicators of positive engagement with school and learning found in this study was the *enjoyment* of reading. Reading enjoyment generally followed a linear trend—highest scores on positive factors for those who always enjoyed reading, lowest for those who did not enjoy reading at two or more of the four study phases between ages 8 to 14, with scores in between for those whose enjoyment of reading varied.

How does the enjoyment of reading (or lack of it) relate to other ways of spending time, and previous experiences?

We found that those who did not enjoy reading were more likely to be:

- in the electronic games~no strong interests cluster (and less likely to be in the overall cluster);
- less likely to be light TV watchers over time (conversely, those who enjoyed reading were most likely to be light TV watchers);
- less likely to complete their homework over time;
- less likely to be enthusiastic about going to school over time;
- more likely to have had bullying experience; and
- seen as having difficult classroom behaviour at age 12.

We may not be able to separate these from each other in a clear sequence—and in fact, it is likely that the seedbed of turning away from school and the gains it has to offer is different for different children, and we do not need to find a single origin-point. Taken together, and compared with the habits and attitudes of young

people who are engaged in school (albeit with varying degrees of enthusiasm and expectation), we can appreciate that "feeding the mind" has a value over and above a mark in a reading test.

It is more likely that these pointers to "risk" in children's development into young adults will occur for those in low-income families, or with non-qualified mothers: but it is not inevitable, and not confined to these groups. Nonetheless, it is clear that an early lack of resources and less exposure to the kinds of activities that are habitual in advantaged homes makes it harder for children from these groups. If we take logical problem-solving scores as an indication of non-verbal reasoning, it is telling that these are unrelated to family income (either early or current). The raw material is not limited by low family income. But low family income can limit experiences of growth and challenge. This underlines the responsibility the wider society has to provide such experiences for all children and adolescents.

It is clear from this study (and others) that engaging children and young adults in learning is not just a matter of making school compulsory, or early childhood education affordable and available. Nor is it a matter of researchers or policy makers producing checklists of "good" things, and exhorting educators and parents to provide them. Nor it is helpful for different groups to blame each other.

It has been heartening to see in recent years the development of multi-pronged approaches within education that are aimed more at deepening our ability to engage children and young adults, by providing tools and understandings that can be customised to suit particular situations and interests. These include the literacy leadership and numeracy development initiatives, the various assessment professional development projects, the growing emphasis on professional learning communities, and the "Feed the Mind" and more recent Team-Up programmes aimed at parents.

There has also been more awareness in recent years of the importance of literacy and numeracy for students starting secondary school, supported by Ministry of Education-funded professional development. Some schools are putting substantial effort into ensuring that their Year 9 students who lag behind do reach a literacy level where they can access the rest of what secondary school has to offer. One would hope that over time the need to do this lessens, as the programmes and approaches mentioned in the previous paragraph take root. In the meantime, and despite the efforts of secondary schools to offer enticing options, the material from this study (and others) would suggest that we have more to learn about how to offer positive learning environments (matching pedagogy, curriculum, and assessment) for mid-adolescents, and that the need to do so is particularly marked for students attending decile 1–2 schools.

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