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On The Edge Of Adulthood:
Young people's school & out-of-school experiences at 16

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New Zealand Council for Educational Research

New Zealand Government

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CL @ 16 is the seventh phase of the Competent Children/Competent Learners longitudinal study.

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On the edge of adulthood: young people's school and out-of-school experiences at 16 is the major report from the age-16 phase of the longitudinal Competent Children, Competent Learners study undertaken by New Zealand Council for Educational Research (NZCER) and funded by the New Zealand Ministry of Education and NZCER. Here we summarise the main findings of this comprehensive report. We start with an overall description of key aspects of the 16-year-olds' participation in school, their experiences of learning, and achievements. Then we describe overall patterns of family life, friendships, and interests out of school. Finally, we look at the results of our statistical analyses to see what light they shed on differences in young people's patterns of school experience and performance.

Who took part in the age-16 phase of this study?

The Competent Children, Competent Learners study has followed a cohort of Wellington region students from their final months of early childhood education through their school years. At age 16, 447 of the sample took part. Thirty-five percent of the cohort were in Year 11, 58 percent in Year 12, and 6 percent had already left school. Most were still living in the Wellington region, but nine percent were living in other parts of New Zealand. The Year 11 participants were attending 44 different schools, and the Year 12 participants, 61 different schools.

The descriptive picture we provide here is not intended to be representative of all New Zealand 16-year-olds, since our sample was originally drawn to be representative of different types of ECE experience, rather than to be nationally representative in terms of social characteristics. Compared to the national average, our sample has higher proportions of young people from high-income families, and those whose mothers have trade or tertiary-level qualifications, and lower proportions of Mäori and Pacific young people, and those attending low-decile schools. Where there are differences in experiences and perceptions associated with these social and school characteristics, our findings will give probably a somewhat more positive picture than a sample that had been drawn to be representative of population and school characteristics.

However, we have sufficient numbers of young people in different social groups and with different kinds of experience to be able to undertake analysis of how such differences can contribute to differences in competency levels, school engagement, and so on.

School participation and engagement

A sizeable minority of the age-16 students appeared to be at school, but not really engaged in what it had to offer. Just under half the students had very good or excellent attendance at school, and 22 percent had good attendance levels. But 26 percent had only fair or poor attendance. Five percent of the parents had worked with their child's school to stop their child's truancy. Students with only fair or poor attendance tended to also have less positive approaches to school work and the National Certificate of Educational Achievement (NCEA) assessments, and to gain fewer NCEA credits.

By age 16, 18 percent of those still at school would like to leave school as soon as they could, 25 percent were usually or always restless, and 36 percent were usually or always bored.

However, around two-thirds to three-quarters of the age-16 students said they usually or always liked their teachers, enjoyed learning, and kept out of trouble. Few admitted to skipping classes as a general pattern (those

with poor attendance records seemed more likely to stay away from school altogether rather than be selective about what they missed).

Around 90 percent usually or always felt safe at school, felt they belonged, and thought it important to do their best. Eighty percent thought they were usually or always treated as an individual. More than half also thought they were treated as an adult, as well as getting all the help they needed. They were more likely to see opportunities to take leadership roles than that their views on how to improve their classes or school were actively solicited.

Few of the students found school to be a constant site of loneliness, sadness, or rejection of their key beliefs. Most had good friends at their school. And while more than half thought that they could improve the quality of their work if they made more effort, they did not feel that the amount of work they had to do was to blame.

Overall, the proportion of students with positive views of school did not decrease between the ages of 14 and 16—the exception was an increase in reported restlessness.

Parent views

Just 55 percent of parents thought their child enjoyed school, cf. 65 percent at age 14, and 75 percent at age 12. Parent views of the support their child had from their current teachers were as positive as they had been two years earlier: 51 percent rated the support of these teachers gave for their child's learning as 4 or 5 on a 5-point scale, and 31 percent did so for teachers' support for their child's emotional wellbeing. Ten percent thought their child had no or very little support for their learning, and 19 percent, for their emotional wellbeing. Parents of Mäori or Pacific children were less positive about their child's school experiences, and only a third were satisfied with their child's school progress.

Fifty-nine percent of the parents overall were satisfied with their child's progress at school, much the same as for the students at Year 10 when they were aged 14, and somewhat lower than the 69 percent at Year 9 or at age 12, when they were in Years 7 or 8. Twenty-two percent expressed mixed views, and 19 percent were not at all satisfied. As in earlier phases of this project, the main reasons for mixed views or dissatisfaction were that the student was not making good progress (27 percent), was bored or repeating work (10 percent), the quality of teachers (4 percent), and the student lacking confidence or being unhappy at school (4 percent).

But—the early school leavers

Six percent of the young people had left school already at the age of 16. The reasons they left were more "push" from school—because they were bored, didn't like their teachers, or got into trouble, than "pull" towards a more appealing alternative, such as a particular occupation. While they were generally optimistic, most thought that not having qualifications, skills, or relevant work experience would stop them having the kind of life they wanted, and 59 percent wished they had had more guidance on their school subjects. Most of their parents regretted that they had left school early. Parents of school leavers were less likely to think they were generally happy (39 percent cf. 86 percent of school stayers' parents), and only 29 percent had no concerns at all about their child cf. 59 percent of the parents of school stayers. Some aspects where parents of school leavers were three or four times more likely to note a particular concern were around their child having unsuitable friends, or loneliness, a lack of interests, or unsuitable interests, getting into trouble, having relationships that included sex, being reckless, and using illegal substances.

The female school leaver group stands out as the group that was least happy in what they were doing. Female school leavers were more likely to be reported as generally unhappy (31 percent cf. no male school leavers), and to be unsettled by something (77 percent cf. 33 percent of the males school leavers). This gender difference was

not evident among the school stayers. Parents saw romantic or sexual relationships, and relations with their friends as being the source of their being upset.

Two-thirds of the school leaver group had low school motivation levels at age 14, compared with 30 percent of those who stayed on at school, and not surprisingly, they did not wish to return to school. Their job and training interests were largely unrelated to what they had done at school, and one of the things they relished was learning things now that seemed "relevant" and "real life."

Experiences of learning in school

We asked the school students and the teachers of the classes the students named as their most enjoyed, least enjoyed, and their English class to give their perspectives of the frequency of a range of teaching and learning practices in these classes. At age 14, we had gathered such information on three compulsory subjects, English, mathematics, and science. At age 16, with students less bound by compulsory subjects, we had to think of a different way to capture learning experiences. Our choice turned out to yield some additional and valuable insights.

Students' most enjoyed subjects were not confined to a few content areas—they spanned a wide range. What they had in common was that they offered students the kind of learning experiences that students valued—and that at the same time would be most likely to build the key competencies now emphasised in the revised New Zealand Curriculum. What students valued included relevant examples (of the kind the school leavers had not found in their own school experience), practice at thinking about what was being learnt and working with others in learning, responsibility for setting goals—as well as the more traditional ways that teachers can support students, such as providing specific feedback and ensuring that students understand a particular topic. Teachers who provided positive learning environments were also well liked by their students, and their classes seemed to have fewer behavioural issues, indicating that they had created learning contexts where peers supported one another's learning, rather than distracting them from it, as they tended to do more in the least enjoyed classes.

We did not find that the most enjoyed classes were necessarily easier, though they did provide environments in which students felt more confident about their learning.

Mathematics and science classes did feature more among the classes that students did not enjoy; but the fact that these subjects also featured among the most enjoyed classes indicates that they can be taught in a way that encourages student engagement in learning, and the development of the key competencies as well as "academic" content. Previous reports from this project have shown that development of those key competencies supports academic learning (and vice versa), and suggested the value of approaching teaching to provide both as "two sides of the same coin" rather than seeing them as separate content areas, or either/or choices.

Nonetheless, even among the most enjoyed classes, we found that encouragement of the key competencies was not widespread, indicating that this aspect of the revised New Zealand Curriculum will need particular and careful support over the next few years.

The second unanticipated gain from asking students about three different classes was that it showed just how different their experiences could be within the same year level, and the same school. Most students did not experience classes that were equally engaging or supportive.

Subject choice

Students do not seem to choose subjects on the reputation of their teachers, however (that might not always be known). Nor do they seem to choose on the basis of the number or type of NCEA credits, or how easy they think those will be. Their choice is to some extent framed by what a particular school can provide, and the options it

makes available at the same time in the timetable. The senior managers of the schools in the study were more likely to think their school was strong in offering academic subjects than in offering a broad range of subject choices or offering vocational subjects.

Choices could also be constrained by previous achievement in in-school assessments or the NCEA, and previous attitudes shown in class. Deans appeared to play somewhat more of a part than class teachers in student choices. As they did at age 14, the majority of students continued to choose subjects they thought would be interesting for them, or lead to a career. The main reasons for dropping a subject were because they did not enjoy it or had found it difficult. A fifth of the students dropped a subject to try something new.

Family advice remained more important to students than advice provided by the school (or their friends). However, once choices had been made it seems parental opinion was seldom a reason for a student to drop a subject between years—and neither was advice from teachers or friends.

A quarter of the students wished they had had more guidance with their subject choice, mainly because the choices they had made had closed pathways for them.

Although few schools put students into clearly differentiated "streams" by ability any longer, subject choices do show a continuing differentiation in terms of focus and likely future pathway. We found that the students could be clustered into four broad groups. Those who were mainly taking "traditional arts" subjects, and those who were mainly taking "traditional science" subjects —and in each of these clusters, mainly taking "traditional" mathematics and English courses— were following the academic–tertiary study pathway, with subjects likely to be assessed with achievement standards. The two other clusters, "contextual" and "vocational", are more related to particular occupations and current interests, and the "alternative" versions of mathematics and English that they offer are more likely to focus on practical presentations and uses.

NCEA

The NCEA qualification that was introduced in 2002 was intended to provide more flexibility both in course design (teachers can decide which standards to include, and how many will be unit or achievement, and how many will be internally or externally assessed), and for students and teachers deciding when students should be assessed for a particular standard. Each standard has a number of credits attached to it, at one of the three NCEA levels. We found that most students attempted far more credits than they needed for each NCEA qualification level, raising some questions about course structures, or the way credits are attached to standards.

The number of credits students are offered to attempt does differ between the subject clusters, with lower numbers both attempted and gained among the "contextual" and "vocational" cluster students. However, the success rate for these students was almost as high as it was for those in the two traditional academic clusters, though they may take longer to gain the number of credits needed for Levels 1 and 2 NCEA qualifications, indicating that the NCEA is providing these students with more opportunities to see themselves as successful learners, and thus encouraging among all students, and not just those taking the traditional academic path, the development of "lifelong learning" dispositions.

Although much has been made about the ability of students to undertake a reassessment or skip assessments, we did not find much evidence that either of these is common.

How well does the NCEA measure student ability? Because we have used more traditional forms of assessment in our competency measures, we were able to compare how well individual students fared on these measures with their NCEA results. We found considerable consistency between the two. But the consistency was not perfect, any more than it was between teacher and parent judgements of a young person's attitudes, because each is using a different measure, within a different context. These differences underline the importance of considering context

when making judgements or decisions based on individual performance, and the value of seeking additional information about individuals where we are concerned about lapses from previous performance or want to improve performance.

Though parent views about the NCEA were mixed, most parents thought that their children were positive about it. Their views were mixed as to whether their child was interested in work that was unrelated to credits, and did the minimum required to get the credits (as they might have done in the previous qualification regime); or whether they would work hard regardless of whether a topic was being assessed and always strive for excellence. All but a small proportion of the parents thought their children coped with assessment pressures, both internal and external. Just over half also thought their child was organised and well prepared for assessments. Parents' views did not indicate that student levels of intrinsic motivation toward their work were negatively affected.

Some of the differences in parent views of the NCEA was related to how satisfied the parents were with their child's school progress. Parents who were satisfied with their child's progress were more likely to have positive views about the NCEA

The patterns of views here do indicate the importance of giving parents more information about the NCEA; they also suggest that views about the NCEA may be formed by things that are not to do with the structure *per se* of the new qualification.

Friendships, experiences, and interests

The school leavers were not the only ones who were pushing into adulthood through such things as experimenting with sex, more romantic relationships, and experiments with drugs. Here we see some marked changes from age 14. Half had fallen in love over the past year. Nine percent had had sex in the past year at age 14; now 34 percent had, and 11 percent had had sex when they did not want to.

Almost half the young people had never drunk alcohol at age 14; now only 16 percent had not done so in the past year. Nineteen percent had done something they regretted while drunk two years earlier; now 51 percent had.

But the other behaviours we asked about, that can pose some risk in terms of keeping a focus on learning, or losing control, had not changed.

Most of the young people did not experience being bullied or hassled; but around 10 percent did experience this as something that occurred sometimes or more often over the past year. Thirty percent of Mäori/Pacific students said they had been hassled about their culture over the past year, cf. 13 percent of Päkehä/Asian students. Around a third sometimes or more often felt left out of things.

Most of the young people had been bored at least sometimes; around two-thirds also felt they had not had enough money at least sometimes, and around half, not enough freedom. Two-thirds had lost a friend (as they had also gained new ones). Around two-thirds had also lost their temper at least once, or fought with others at home.

Friendship was very important in the young people's lives. Some activities with friends were much the same across adolescence: simply hanging out together topped the list at each age. But there were some changes at age 16: a jump in going to parties or on holiday together, a steady rise in shopping together, and in watching TV or DVDs together; a continued decline in informal physical activity. Support and trust is the most valued aspect of friendships at age 16; this has grown steadily in importance since age 12. Sharing interests is less important; the fact that a friendship is long lasting has become more important for some.

All but 6 percent of the young people had someone they could talk to about what happened to them at school (or, if they had left school, in their life)—much the same proportion as at ages 12 and 14. Between ages 12 and 14 there was a big change in who this was—a turn to friends and away somewhat from mothers—and this continued at age 16.

At age 16, 41 percent of the young people wanted a *satisfying* life; 37 percent wanted to *stand out* in some way; and 23 percent had *aspirational* values. These are much the same proportions as they were two years earlier. And, as two years earlier, we found that the values young people had were linked to their participation and engagement in school, their achievement, and their patterns of relationships with others.

Achievement (in and out of school, but particularly academic and sports achievement) was the most important source of satisfaction for the young people (68 percent), followed by recognition from others (not linked to achievement *per se*), 16 percent, enjoyment (11 percent), and something that felt like a breakthrough, or a step on the way to the future (6 percent).

Conversely, when we asked them what was the least satisfying thing they had done over the past year, it was academic failure or difficulty that headed the list (30 percent), followed by failure or difficulty in the arts (8 percent), sport (6 percent), getting into trouble (7 percent), losing control or the balance of things in their life (6 percent), or having a relationship difficulty (6 percent). However, 34 percent of the students could not think of anything here.

How do 16-year-olds spend their time? Activities with friends are frequent. Watching television may not be seen as a main interest, yet it is part of daily life for two-thirds of the young people. (Average hours per day were 2.4 hours for those who had left school, and 2.07 hours for those at school, slightly less for the latter than at ages 12 and 14.) Reading continues to decline as part of daily life, as does homework. Active participation in sport has also dropped back, though individual exercise continued to be a part of everyday life for just over a third of the young people. Forty-five percent of the 16-year-olds at school had paid work at least once a week.

Frequency of computer use had not increased since age 14—and perhaps surprisingly, computer-based games took less time than they had two years before. The average length of time spent using the computer each week was 7.92 hours (s.d. 7.6 hours) for those at school, and 5.22 hours (s.d. 3.98 hours) for those who had left school. Time spent on the computer has gradually increased: at age 12 the average was 3.8 hours, and at age 14, 6.5 hours a week. For around half the young people, ICT was a tool they used at least once a week. It was a tool that supported a range of uses: particularly communication, gaining something for further use (music, pictures), gaining information (both purposefully and through browsing), entertainment, and as a way of doing some things faster. It was not in much use to support school-based or other communities, and some of the more recent and much heralded possibilities, e.g. digital stories or blogging sites, were rare.

Almost all the students had a cellphone, and their own source of music or radio; televisions that they could decide to use to watch when and what they wanted were less common. Perhaps surprisingly, few had their own computer, or access to the Internet (unless through their cellphone).

Family

Around three-quarters of the young people felt included in their families: they felt comfortable, treated fairly, felt they could get help if they needed, and they were asked about what they did. The young people also showed high levels of trust in their parents, and the relationships for most were warm and loving. Levels of help and support were a little lower than levels of trust and warmth.

Most could talk with their parents about their hopes and plans for the future; around two-thirds had mothers who could tell when they were upset. Less than half however shared their problems and troubles with their

parents—though most felt they could get help if they needed help—and only a third thought their parents checked whether they had done their homework (if at school) or what they needed to do (if they had left school).

Most young people did not think they were under family pressure to change or conform. Around a third thought their family worried too much about what they did with their friends or thought that home was more friendly if they did what their parents wanted them to do, though fewer thought that than they had at age 14. Otherwise, family pressure levels were much the same as at age 14.

Almost all the young people were living at home, and almost all had some rules and expectations about their behaviour. Just under half said there were rules or expectations for at least 10 of the 18 aspects we asked about. As at age 14, most likely were rules around the use of alcohol, language, study, housework, and a time to be home by. But at age 16, many had fewer parental rules or expectations than at age 14.

All but 14 percent of the 16-year-olds had broken one of their parental rules at some stage: somewhat more than the 3 percent who said they had never broken a parental rule at age 14. Parents were more likely now to tell their adolescents off; there may have been slightly less negotiation or discussion, and more attention to circumstances. Otherwise, parental responses to their 16-year-olds breaking their rules are much the same as two years earlier.

Twenty percent of the students spent at least some time between two homes—half of these said the rules were different in each home: some less strict, some more strict. Four percent had a shared parenting arrangement, and 3 percent spent a weekend or week night in a second household. The other arrangements were timed for school holidays or some weekends (7 percent); 4 percent had regular visits with their other parent, and 3 percent, irregular visits. Two percent also spent time in a third household.

Thirty-eight percent of the 16-year-old students came home to an empty house, up from 25 percent at age 14, and 15 percent at age 12. Parents were home to greet 59 percent of the students; 27 percent came home to a younger sibling, and 17 percent to an older sibling (down from 29 percent at age 14). A few came home to a relative or a friend.

Parent views give a similar picture to that given by the young people: continued closeness and support, without trying to control behaviour, and leaving it up to the young person to raise things they wanted to raise. Parents may feel they know more about their child's moods than the young person feels they know.

Eighty-three percent of the parents thought their child was generally happy; 13 percent said their happiness varied, and 3 percent thought their child was generally unhappy. We also asked parents if they had any concerns or worries about 14 aspects of their child's life. Just over half the parents had no concerns at all about their child; another 33 percent had low-level concerns. Generally, their level of concern was lower than it had been at age 14.

Three-quarters said their child was more mature at 16 than at 14: more responsible, hard working, confident, or independent. Twenty-seven percent mentioned growth in dimensions such as humour, kindness, and sensitivity. Five percent said relations with their child had improved. Some were contesting parental authority, showing their parents little respect (7 percent); some had fallen in love or had a more social life (5–6 percent); some were battling with mood swings or depression (4 percent); some were more materialistic (4 percent); and some were remaining naïve and easily led (3 percent). Three of the girls had become pregnant.

Seventy-four percent of the parents said their relationship with their child had changed over the two years: mainly, it had become more adult (56 percent of this group), or closer (25 percent); but for some it had become more distant (15 percent), or more conflicted (3 percent).

More "adult" activities were reported as those shared between parents and their age-16 children: eating together, talking—and, interestingly, there was more transporting of students to their activities than there had been at age 14. The trends to less time on shared interests or hobbies, less time on shared physical activity, and less time working on homework together evident at age 14 continued.

Patterns over time

By age 16, when the young people in this study were undertaking NCEA assessments, much of their learning identities was already shaped. So how they responded to these assessments, as well as to their classes, *did* carry much of what they had gained from their previous experiences: the attitudes they took to school and learning, previous success at school (both attitudes and success reflecting the kinds of opportunities they had had to learn). To succeed and make the most of secondary school years generally requires successful primary school years, and before that, rich early learning opportunities.

Most of the information we have at a national level about achievement gaps reports them in terms of social characteristics, particularly gender and ethnicity. On the one hand, our analyses are able to shed some light on why that might be so, by looking at behaviours and experiences that are related to these differences; and on the other hand, to show that other factors play a larger part than these two in accounting for differences in student performance. This underpins the earlier point that to address issues of nonengagement or lack of achievement, we need to look behind group labels, and to use more than one source of information on how students and young people respond to different contexts.

Some of the young people's responses indicated that they had started to establish themselves as young people who gained a sense of themselves through risky behaviour and having friends who also made meaning of their lives through such behaviour, at the expense of making the most of what school could offer. Our analyses certainly point to risky behaviour in early and mid adolescence as a key indicator of low performance, both in senior school qualifications and on our measures of cognitive and attiudinal competencies. Some of those who seemed to identify themselves as this kind of risk taker (as opposed to taking risks in new learning) had built up this identity over years; others seemed to have been attracted to this identity more recently, in early adolescence.

In fact we saw much more consistency between age 14 and age 16, than we saw between age 12 and age 14. Early adolescence appears to be a key period for consolidating learning identities, and laying down paths and values in out-of-school activities and relationships that support these. On the negative side, high scores for risky behaviour and having friends with such behaviour as well were much more likely at 16 if the same patterns were there at 14; the same was true for having "standing out" values at the expense of values that found purpose in good relationships with others, and meaningful work.

But the 16-year-olds' performance was not just the sum of their previous experiences or their current ways of spending time out of school. We also found that current levels of engagement with school had some part in student success on senior school qualifications.

One of the key findings of this report, as in earlier reports from the Competent Children, Competent Learners study, is that though we can trace some different paths through time, through how children and then young people spend their time, the habits and competencies they develop through that use of time, we do not see entirely predictable trajectories or entirely separate groups of young people. We can discern some of the signs of disengagement and turning to behaviours and relationships that are unlikely to provide positive meaning for the future. If asked to provide some quick indicators that things are going well in childhood, we would point to the enjoyment of reading (and not just the fact of reading), to having some interests that provide goals and challenge, take place within relationships, have a dimension of communication or use of symbols, and can also provide experiences of achievement. Conversely, two very quick indicators that things may not go well for a child

in future are being too dependent on television or computer games as a way to spend time, or becoming involved in bullying.

What our analyses cannot provide are recipes, with precise amounts guaranteed to produce a satisfactory result. The contexts in which children and young people act and experience also have a bearing. Thus—to take a simple example—sports provide a context for the development of competencies and relationships; they are the extracurricular activity most likely to be offered by schools, with opportunities for young people to also gain important experience by taking responsibility and stepping up to leadership. But the opportunities for consolidation of a positive learning identity can differ. Picture the sports player who comes home and talks with his or her family about both the game and other things, who celebrates with friends but without getting drunk and in that state taking risks that would not seem so manageable or attractive when sober, and who finds enjoyed learning opportunities in school classes. Then picture his or her team mate who has nothing but the game and the celebration, and whose classes do not ask him or her to be fully involved in learning.

The fact that learning identities have consolidated by the senior secondary school but still contain fluidity, and openness to experience, gives continued optimism. It also means we need to look at the whole of a young person's life, and what gives them meaning. Only then will we see the particular possibilities, as well as potential risks. We need to see a wider (or deeper) picture to gauge whether we are providing learning opportunities that will support and extend confident and open learning identities; and open out those learning identities that have turned to resistance or the seeming safety of repetition. For there are still too many young people who have either left school at 16, or who may be at school, but not engaged in it, and who are thus moving into adulthood with far less of the understanding, skills, and habits that they need for real participation and contribution in an increasingly complex world.

We are therefore most encouraged by our findings about how student engagement in learning is linked to the provision of the very kinds of learning opportunities that are also building the key competencies of the revised New Zealand Curriculum. These findings show a fruitful terrain for enriching the practices—and enjoyment—of both students and teachers in secondary schools, and through improving engagement, the achievement of a wider range of students.

1. Introduction

What are the day-to-day experiences of 16-year-olds in New Zealand? How much of what they value and the way they approach their school learning is related to their out-of-school activities and relationships? How much of the way they approach life in and out of school is shaped by the paths they have previously taken, the successes and supports they have known? What are the main links with their current school participation, achievement, and engagement and these other past and present dimensions in their lives? What is their experience of the new and sometimes controversial secondary qualification system, the NCEA?

These questions have shaped much of the material we gathered with the participants in the Competent Children, Competent Learners study as they turned 16: the young people themselves, their parents, and teachers, and these questions shape this report. It aims to provide both a description of what young people are doing at 16, both those still in school, and those who had already left (6 percent of the young people); and an analysis of the patterns we found, how things are connected across different dimensions of their lives both in space and time.

Our study, which is funded by the Ministry of Education and NZCER, began in 1993 when the young people were in their final early childhood education centre, within the Wellington region (including the Wairarapa and Kapiti Coast). The main aim of the study then was to see what contribution early childhood education made to the development of competencies we thought would be important to being lifelong learners. These included skills and knowledge that are now being threaded through the draft revised curriculum as key competencies. Thus, this study can also provide some particularly relevant insight into not only why they are indeed important for lifelong learning (Wylie & Hipkins, 2006), but how they might be supported and developed.

Like other longitudinal studies, this study shows what it means to develop individual identity within sets of relationships and experiences that occur within social frameworks. There were some real differences evident in the day-to-day experiences of the study participants when they were preschoolers. For children in homes where parents had good education themselves, and sufficient money to provide good resources for learning, more was offered in the way of both support and challenge, particularly around language and symbol use, the prime vehicles for learning. Also like other longitudinal studies, this one also challenges some of our assumptions about the role of different social categories in children's development. For example, we have found it is the financial poverty in which sole parents often live that lies behind apparently lower levels of performance for some, not the fact that a child has one rather than two parents living with them.

When we have the relevant data, we often find that associations between obvious social categories and differences in competencies are linked in turn to different *experiences*, which in turn lay down *habits* and *ways of being* that consolidate into *identities*. We have found the framework of "learning identity" or "learning career" (Bloomer & Hodkinson, 2000; Ecclestone & Pryor, 2003) a particularly useful one for making sense of the patterns we find. These researchers invoke the metaphor of a "career" to paint a picture of a dynamic and evolving sense of self as a learner—one that is mediated by the structures and rituals of different learning contexts. From this perspective, young people are actively making and remaking themselves through their relationships and experiences, and these experiences and relationships in turn reflect back to them images of who they are, and what matters in life, what is real.

This is not a closed circle, but more of a spiral. We can discern the imprint of the past in the patterns we found at age-16, but that imprint did not allow us to confidently predict what all of the young people in this study would be doing as we analysed the data they shared with us, as we wrote this report. As they came close to adulthood, there were some who were soaring confidently, but in contexts in which they could encounter both positive and

negative risks to their identity; there were others who were closing their relationships and experiences so tightly around them that one did fear for their future well-being; and still others whose next steps could take them along a number of different paths.

The descriptive picture we provide here of what 16-year-olds were doing, thinking, and feeling, is not intended to be representative of all New Zealand 16-year-olds. The Competent Children, Competent Learners sample was originally chosen in relation to the main focus of the first phase of the study, which was the role of early childhood education experiences and quality. This meant our units for sampling were early childhood education types, other than ngä köhanga reo, rather than social characteristics. This and the fact that our sample was chosen from the Wellington region, has resulted in a sample that is not nationally representative in terms of social characteristics. Compared to the national average, our sample has higher proportions of young people from high-income families, and those whose mothers have trade or tertiary-level qualifications, and lower proportions of Mäori and Pacific young people. The young people who decided not to continue in the study after age 12 also tended to be from homes with fewer resources. Almost half the young people who were attending decile 1–2 schools when they were aged 14 decided not to participate at age 16, which is likely to be the reason why we see fewer differences associated with this school characteristic in this phase than we saw for the first two years of secondary schooling. Thus, where there are differences in experiences and perceptions associated with these social and school characteristics, our findings will give probably a somewhat more positive picture than a sample that had been drawn to be representative of population and school characteristics.

The table below describes the sample at age 16 in terms of the four social characteristics we analyse in the study.

Table 1: Social characteristics of Competent Children, Competent Learners study sample at age16

	Number (*n* = 447)	%
Family income (at age 16)		
Low income (< $40,000)	65	15
Medium income ($40–$70,000)	122	27
High income ($70–$100,000)	89	20
Very high income ($100,000+)	142	32
Not known	29	6
Maternal qualification		
None	58	13
Trade/Mid-secondary	222	50
Senior secondary/Tertiary	80	18
University	84	19
Not known	3	1
Gender		
Male	229	51
Female	218	49
Ethnicity		
Päkehä/NZ European	359	80
Mäori	45	10
Pacific	18	4
Asian	13	3
Other	12	3

Our analysis

Data

We have a range of different kinds of data, with different properties, and requiring slightly different forms of analysis. We have data related to categories or groups; scale data, from answers to questions asking young people, their teachers, or adults to rate something; and cluster data, grouping individuals according to their responses across a set of questions.

Categorical data

Some data, for instance maternal qualifications, gender, and attendance, put the young people into groups or categories. Some of the categories, like gender, have no implication of amounts of difference between categories. Some of the categories, like maternal qualifications and attendance, do have some implication of amount of difference (these are sometimes called ordinal or ordered categories). Someone with excellent attendance

attended school more often than did someone with very good attendance, say. But the *difference* between the attendance of two people with good and excellent attendance may not be the same as that between two people with very good and fair attendance. The categories cannot be represented on a numeric scale by numbers that represent the *amount* or quality of attendance.

Scale data

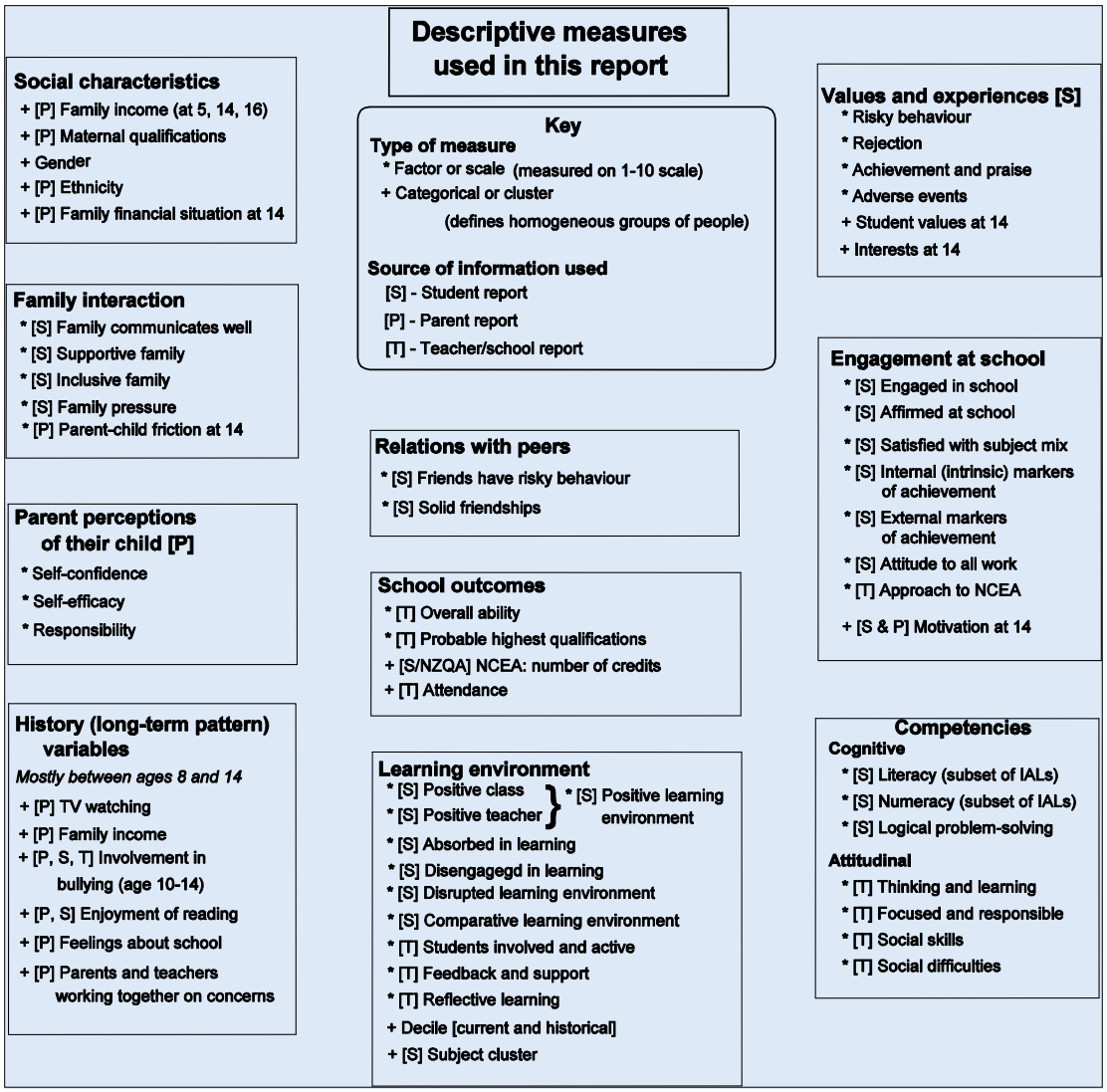
Other data were derived from responses to a series of questions with responses on Likert-type scales. These data and the competency data were used to form "scales" or numeric measures where the numbers on the scale *do* give some idea of the relative amount of difference between two measures. We have used a series of scales each with a minimum of 1 and a maximum of 10 to set up our competency measures and all of the measures related to experiences and views (e.g., views of classes; relations with friends) that we have developed. The measures for experiences and views were developed through analysis of Likert-scale items (e.g., where students or teachers were asked to express their level of agreement with a statement).

Cluster data

Many questions asked in the study were of the "tick all that apply", or multiple response, kind, giving a third category of "raw data". For such questions, and where we wanted to compare answers across a set of questions, we defined clusters or categories of respondents who have relatively similar response profiles (they tended to have similar patterns of the options they selected).

An overview of the measures and categories we used in our analysis is given in Figure 1:. A summary description is given in Appendix 1, along with a table of their means. Their derivation is described in more detail in the technical report accompanying this report, along with the details of our analyses (Hodgen, 2008).

Figure 1: Overview of measures used in this report



Analysis

We wanted to describe the interconnections between experiences, competencies, and views, which we could do in a number of ways, depending on the nature of the data.

In the first instance we have used cross-tabulations and correlations. We generally have reported only the associations based on cross-tabulations that had a chi-square test of independence statistically significant at the $p \leq 0.01$ level (indicating a one in 100 odds that the association has occurred by chance). We have

generally reported nontrivial correlations,[1] but sometimes include all correlations with variables of interest, to show overall patterns.

When we use models to look at the relationship between two or more measures, we generally report associations that were significant at the 0.01 level, and indicate the relative importance of the explanatory variable by the percentage of the variance or difference in student scores on one variable (e.g., NCEA Level 1 credit numbers) that can be accounted for, or predicted by, another (explanatory) variable (e.g., student attendance levels).

The various measures are all interassociated: this multiplicity of associations is shown when we report the results of the cross-tabulations, correlations, and models involving only two measures (a single explanatory measure or variable). Typically, in the models, each explanatory variable explains a relatively small proportion (often, under 20 percent) of the variability in the outcome measure. To attempt to investigate which variables are most important in explaining differences in the outcome measure, we fitted larger models, with more than one explanatory measure.

The scale explanatory measures or variables included in the multivariate models were selected on the basis of the strength of their association with the outcome measure, and the weakness of their associations with each other (two very strongly associated measures, measuring almost the same thing, could not simultaneously be used as explanatory variables in the model as the second would add little new information—the model would have problems of multicollinearity). The scale and categorical explanatory measures retained in the model were those that were still statistically significant *after* accounting for all the other variables in the model (they made a unique contribution to the model). Many of our multivariate models accounted for at least 40 percent of the variance in scores (outcome measures).

These multivariate models cannot provide final, definitive answers however, since, like any model, they cannot include all relevant factors, and the pictures they do provide are best regarded as the "tip of the iceberg", signalling further layers (or interconnections) beneath. The models also cannot be interpreted as providing evidence for *causal* relationships between variables, not even where one of the explanatory measures predates the outcome measure. For example, enjoyment of reading up to age 14 has shown a strong association with literacy at age 16. This does not mean that enjoyment on its own *causes* good literacy, merely that the two tend to go together. It is likely that this association points to a "virtuous" cycle with enjoyment of reading leading to more reading (both in quantity and sophistication), and more enjoyment as more is gained from reading experiences, all of which (together with some other factors) result in good levels of literacy a little later in life.

The models fitted give a sense of which variables carry the most weight (account for the most of the variability in the outcome variable), and this may indicate some of the best levers for changing outcomes where this is desirable.

We have tried to describe our findings as simply as we can, but what we are investigating is not simple or one-dimensional. This report is not so much the story of a journey along the road to a single destination, but like discovery in an art gallery, with paintings grouped together in each room, each painting in that room offering fresh insight into a similar group of themes.

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[1] A positive correlation between, say, engagement in school and literacy indicates that higher levels of engagement tend to be associated with higher achievement in literacy (and low levels of the one is associated with low levels of the other). A correlation of 1 indicates perfect agreement or association between the two measures; a correlation of about 0.7 indicates good agreement; one of about 0.5 indicates fair agreement (with increasing numbers of exceptions); a correlation of about 0.3 indicates some agreement, but many exceptions, and one of between 0 and less than about 0.3 indicates poor or no agreement. A negative correlation (for example, between number of days absent and number of NCEA credits achieved) indicates that higher levels of one variable (absences) are associated with lower levels of the other (NCEA credits). Again, values of around -1, -0.7, -0.5, and -0.3 indicate perfect, strong, fair, and weak (negative) association between the measures.

The first section of this report describes the study participants' levels of participation in school (using the Ministry of Education term "presence"), achievement, and engagement in school, analysing the factors that seem to have most bearing on these. These factors include a mix of the previous performance levels and experiences that can be thought of as forming the ground on which an individual student might stand in relation to their current learning opportunities, the nature of those current learning opportunities, and the way they are spending their current time—the kinds of activities and friendships that either support them to grow further, turn them away from their established identities, or entrench them further in circular patterns of behaviour and understanding.

We also comment on the students' performance on items that are related to the new key competencies introduced into the revised New Zealand Curriculum, which was launched in late 2007.

Next, we describe differences in these factors between the 16-year-olds who had already moved on from school, and those still at school, to get some further insight into the kinds of learning identities that can make the most of school, and those that find their school experiences lacking, and would rather seek fresh experiences, sometimes to have a different kind of learning, sometimes to feel validated in their preference for activities that are not encouraged by school.

The second section in this report takes a closer look at the kinds of current learning opportunities available to those who remained in school through the sets of courses they took, teaching practices in their classes, and what they and their parents were making of the senior school qualification introduced in 2002, the NCEA. We find through our analyses that approaches to the NCEA are largely influenced by previous patterns and experiences, and current classroom experiences, rather than by the new structure of the senior school qualification, which is based on a more modular structure than the previous set of qualifications.

This section also examines teacher and student descriptions of class practice to see how far they already support the new key competencies.

In the third section, we move away from school to look at what the young people (both school stayers and school leavers) were doing with their friends and families, and with their time, and how these different relationships and experiences interlink. While we can point to some steady patterns over time, we also show that the meaning of a particular activity is not drawn just from the activity, but the way it occurs, and its place in the whole picture of an individual's interconnections.

For example, the support and growth opportunities presented by involvement in organised sport will be quite different for the players who can fit it into a context of friendships that are focused on mutual support, compared with the players who fit it into a context of friendships that take place through risky behaviour.

In the concluding section, we take a closer look at some differences in perceptions and experiences associated with the four social characteristics we focus on in the Competent Children, Competent Learners study (maternal qualification, family income, gender, and ethnicity), before providing some final food for thought by drawing together key themes from the work done for this report.

2. School presence

In this chapter, we report patterns of participation in school, or "presence": attendance, participation in extracurricular activities offered by schools, taking leadership roles within schools, and the amount of time spent doing homework and views of it.

Then we summarise the results of our analyses of the interconnections of attendance with school engagement, competency levels, approach to NCEA and other factors of interest; then the interconnections of attendance with prior engagement, motivation, and competency levels (at age 14), and then with other aspects of school experience (such as student views of their classes) and experience outside school.

Attendance

We asked school management to categorise student attendance for us.[2] Twenty-six percent of the students were judged to have excellent attendance, 23 percent, very good attendance, and 22 percent, good attendance. Attendance was seen as fair for 15 percent, and poor for 11 percent. Three percent had had poor attendance because of illness, and 1 percent for other reasons (mainly participation in sport). Five percent of the parents said they had worked with the school on the student's truancy.

How long would students stay at school?

Most of these Years 11 and 12 students were now committed to staying at school until the end of Year 13 (78 percent). Ten percent thought they would leave at the end of Year 12; 9 percent were unsure how long they would stay at school.

Extracurricular activities

All but 11 percent of the students took part in some extracurricular activities offered by schools. Around a third took part in one or two of the options offered, and another third, in three or four. Twenty percent had taken part in at least five options. Team sports were taken part in by just over two-thirds of the young people. Music and the arts were the other main activities offered. Project-based activities or clubs were less frequent.

[2] In previous years we had asked for actual attendance records, but because there was no common way of recording attendance (some schools recorded absence, some attendance; some recorded whole days, some half days), it was difficult to be sure we were grouping like with like.

Table 2: 16-year-olds' school-based extracurricular activities

Activity	Age 16 (*n* = 421) %
Team sport	69
Sports/outdoor trip	31
Attending arts performances	29
Arts performance other than music	27
Individual sport	26
Music—playing instrument/taking lessons	23
In-schools competition	22
Musical performance	17
Visited art gallery	14
Leadership course	13
Debating team	7
Kapa haka/cultural performance group	7
Theatre sports	6
Took part in practical investigation (e.g., for science fair)	5
Environmental action project	3
Computer club	2
Manu Korero or other speech group	2
Other	2
Photographic/visual arts club	1

Year 12 students were more likely to take part in arts performances (31 percent cf. 21 percent of Year 11 students), or leadership courses (16 percent cf. 8 percent).

Leadership and responsibility within the school

What opportunities did the young people have to take leadership roles within their school? Just under two-thirds (62 percent) had taken one of the 21 roles we asked about. Twenty-nine percent had one leadership role, 14 percent had had two, 8 percent had had three, and 11 percent four or more of these roles. The most frequent leadership roles were linked to extracurricular activities, but some students were also planning and staging school-based social events, talking at assemblies, or providing advice and support to others within the school.

Table 3: 16-year-olds' school leadership roles

Role	Age 16 (*n* = 421) %
Captained sports team	23
Coached sports team	15
Talked in school/year assembly	12
Planned & staged school-based social event	11
Represented school at an inter-schools leadership event	9
Peer support leader/mentor/mediator	8
On school council	8
Community work through the school	8
Worked in library/office/canteen	7
Worked in computer suite	7
Led cultural group/debating team	7
Planned & staged school-based sports event	6
House leader/sports captain	6
ICT guidance & support for staff/other students	5
Youth parliament or similar project	4
Helped put together school magazine/newspaper	3
Student representative for Mäori/Pasifika/other cultural group	2
Whänau/vertical form leader	2
Helped create/edit school Intranet/web pages	1
BoT student representative	1
Prefect	1
Other	1

Year 12 students were more likely to be coaching sports teams (18 percent cf. 11 percent of Year 11 students), providing peer support (12 percent cf. 1 percent), talking at school assemblies (15 percent cf. 7 percent), on the school council (10 percent cf. 4 percent), representing the school in inter-school leadership events (10 percent cf. 6 percent), putting together a school magazine or newspaper (4 percent cf. 1 percent), or being prefects (2 percent cf. none).

Homework

Homework hours had increased somewhat, from an average of 4.7 hours per week for the Year 10 students at age 14 to an average of five hours a week at age 16. The standard deviation (s.d.) continues to be high and, if anything, increased (s.d. 3.5 at 14; s.d. 4.05 at 16). A high standard deviation, relative to the mean, is indicative of a skewed data set, with a clump of results below the mean and a long "tail" spread out above the mean. In this

case, many students were doing only a little homework, but a small number were doing a great deal (8 percent of the sample was doing 12 hours of homework or more each week).

Views on the importance of doing homework continued to decline: when the young people were 12, 49 percent thought it was very important, cf. 31 percent at age 14, and now 23 percent at age 16. Half the students did not like doing homework (a steady rise from the 40 percent at age 14, and the 32 percent at age 12). Thirty-six percent said it was hard to do their homework, and another 32 percent said it was sometimes hard to do it. Why was it hard? Views ranged from simply not wanting to do it (23 percent), and aspects of the homework: there was too much of it (9 percent), it was difficult (6 percent), it was boring (6 percent), the student didn't understand what they had to do (4 percent), to other attractions such as sports (25 percent), friends (23 percent), TV (19 percent), as well as paid work (11 percent), music or performing arts (9 percent), tiredness (8 percent), and family or siblings (6 percent each).

What is related to attendance rates at age 16?

Attendance levels were related to measures of school performance as well as performance on our cognitive competency measures. Students with good or very good attendance records did just as well as those with excellent attendance records in terms of how many Level 1 NCEA credits[3] they gained when in Year 11 or Year 12. Those with good or better attendance gained more Level 1 NCEA credits than those with fair attendance records; and many more than those with poor attendance records. The proportion of these three groups gaining 120 or more Level 1 credits was 53 percent, 36 percent, and 1 percent respectively. There were similar patterns in relation to the proportion of achievement standards gained that were at the merit or excellence levels.[4]

The patterns in cognitive competency levels at age 16 showed the same pattern: similar average levels of performance on our measures for those with good, very good, or excellent attendance, somewhat lower cognitive competency scores for the group with fair attendance, and markedly lower scores for those with poor attendance.

Student attendance levels were also related to teachers' views of students' overall ability, their attitudinal competency levels (including social skills), and their approach to NCEA. Teachers' views were relatively similar for students with good, very good, or excellent attendance. They rated students with fair attendance lower than the first three attendance groups, and students with poor attendance lower again on their attitudes to work, approach to NCEA, and overall ability.

To gain further understanding of how prior and current experiences and approaches were related to attendance rates at age 16, we looked how these age-16 attendance rates were related to: a) age-14 motivation and cognitive and attitudinal competency levels; b) variables that summarised key ways of spending time from ages 8 to 14; c) how students currently felt about school, and the teaching practices they encountered in classes; and d) what was currently happening in their relationships with family and friends, their experience of the wider world, and the way they spent their time outside school.

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3 The attendance record for students in Year 11 at the time the data were gathered was for the same year as they took Level 1 of the NCEA. For students who were in Year 12, the attendance record was for the year after they took most of their Level 1 NCEA courses.

4 The strength of the relationship between attendance and NCEA achievement is shown in the next chapter.

Prior attitudes, competency levels, and experiences

Motivation and competency levels two years earlier had a bearing on current school attendance levels. Low school motivation levels at age 14[5] were reflected in lower attendance levels at age 16: 30 percent of this group had very good or good attendance rates cf. 54 percent of those who had high school motivation at age 14. Age-14 cognitive competency levels were lower for those with poor attendance at age 16, and age-14 attitudinal competency levels were lower both for this group and for those who missed school because of ill health.

Students who had been involved in bullying in at least two of the four periods when we collected data between the ages of 8 to 14 were more likely to have only fair or poor attendance (almost half these students had been cf. almost a third of those with good or better attendance).[6] Students with poor attendance were more likely to have been in the cluster whose out-of-school interests at age 14 were either focused on computer games, or nothing (34 percent of the poor attendance group were from this cluster, cf. 21 percent of those with fair attendance, and 18 percent of those with good or better attendance). But there were no associations between school attendance levels at age 16, and patterns of attitudes to school, reading enjoyment, or amount of time spent watching television between the ages of 8 and 14.

Current school engagement and experiences

Attendance levels were, not unsurprisingly, related to school and class engagement, and to enjoyment of classes. They were also related to the teaching practices in classes, and to satisfaction with subject mix.

Students whose attendance was good or better were more likely than those whose attendance was poor or fair to have higher levels on our *engagement in school* scale. This scale includes items such as enjoying learning, keeping out of trouble, liking teachers; and items that were reverse scored: being restless, bored, wanting to leave school as soon as they could. Students with good or better attendance also had higher scores than those whose attendance was fair or poor on our *affirmed at school* scale, which includes items about feeling safe, feeling that the student belongs, being treated as an individual, the fairness of school discipline and rules. They were also less likely to show *disengagement in learning* when we asked about three specific classes (English, their most enjoyed subject, and their least enjoyed subject). This scale includes items about the student response, such as being able to get away with not doing much work, behaving in a way to annoy the teacher, as well as items about the learning environment, such as the class getting interrupted and the repetition of work without learning anything new.

Students with good or better attendance also had higher scores on our *positive learning environment* scale, which includes items relating to teaching practices that give students clear understandings of the work, meaningful feedback on their work, are pitched to students' particular needs, and which give students an active role in their learning. They also had higher scores on our scale, *satisfied with subject mix* (which asked about both student and parent satisfaction with the current year's subjects, and how well these subjects would help the student to do the subjects they wanted to do the following year).

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5 We found three "school motivation" clusters at age 14; their make-up from a number of items is described in Appendix 1. Those with low motivation levels were in this cluster: "aiming for skilled/unskilled jobs; low conviction about gains from school"; those with medium motivation levels in the cluster "less positive of gains from school and less sure of future goals" (than those with high motivation levels), and those with high motivation levels had "a university/professional orientation, and high faith in gains from school".

6 Thirty-six percent of the students reported some involvement in bullying (as bully, victim, or both) at two or more of the four times we interviewed them between ages 8 to 14. Thirty-five percent reported some involvement in bullying at one of the four times of interview. Thirty percent reported no involvement in bullying on all four occasions.

Current relationships and experiences outside school

There were some marked differences here. Students with excellent attendance were least likely to have experienced adverse events in their life over the past year,[7] to have risky behaviour, [8] and friends with risky behaviour,[9] and their parents gave them a higher rating for their levels of responsibility. At the other end of the attendance scale, we see the reverse: poor levels of school attendance showed most association with experiences of adverse events and experiences related to risk.

Poor school attendance was *not* associated with greater difficulties in family life,[10] or parental perceptions of their child's self-confidence and self-efficacy. This suggests that some students' families were not concerned with their school attendance levels. It also suggests that for some students, high levels of self-confidence and self-efficacy allow them to take risks that can undercut them making the most of school: that it's the *uses* to which these personal skills and understandings are put that matter for young people's learning and wellbeing as much as their levels.

Implications

Age-16 students whose school attendance was reported as poor or only fair showed signs of distancing themselves from school some time earlier: their motivation levels at age 14 had been lower, as had been their (teacher-reported) average attitudinal competency levels. They may have struggled with the work of school, if their lower average cognitive competency levels meant they found it harder than others to do the work, or make progress. Higher involvement in bullying between the ages of 8 to 14 also suggests a turning away from the work of school that began some time earlier as well. Turning away from school for many in this group was not associated with pursuing different paths of learning, but rather continuing patterns from the past: such as those who had been in the age-14 cluster of having few interests, or only computer games; and spending time in pushing boundaries, through risky behaviour, and with friends who offered opportunities for risky behaviour. There were also some in this group who were coping, or probably not coping, with more than their share of adverse events over the past year.

But while we see previous learning identities and habits playing a part in steering students away from school, we also see that experiences of different teaching practices and being able to take subjects that appeal and lead on to the future also play a part. Students who reported positive learning environments and satisfaction with subject mix were much more likely to attend school regularly.

Good or better school attendance was associated with gaining NCEA credits, and with teachers' perceptions of how well students were approaching their work for the NCEA. That, and the patterns showing low school attendance being associated with experiences that were not likely to provide positive learning alternatives, underpin the importance of the current policy emphasis on reducing truancy. Improving the attendance of those with poor or only fair attendance is more important than aiming to have all students always attending school, since there was little difference between those with good, very good, or excellent attendance in terms of their engagement with school, or approach to the NCEA.

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7 The "adverse events" scale variable includes items about having unwanted sex, death of a friend, an accident or injury, shifting to another home, family break-up, and health problems. Full details are in Appendix 1.

8 The "risky behaviour" scale variables includes items such as getting into a physical fight, having sex, having to lie about something someone else did, doing something they regretted while drunk; and the frequency of these over the past 12 months.

9 The "friends with risky behaviour" scale variable includes items such as my friends smoke marijuana, my friends get into trouble, my friends think it is ok to have unsafe sex, when my friends and I party we like to drink alcohol, with the young people asked to give their level of agreement with these statements.

10 The "family pressure" scale variable includes the young person's sense that one or other parent was trying to control them, expected too much from them, worried too much about them, or had problems of their own. Details are in Appendix 1.

3. Achievement

In this chapter, we look at the performance of young people through a range of different lenses. We start with the measures used in this longitudinal study to describe cognitive and attitudinal competencies. Then we look at parent perceptions of their child's behaviour in a different context from school. These parental perceptions can be different from teachers' perceptions. Next we look at achievement in the sense of senior school qualifications, the NCEA, and we also report teacher views of the students' overall ability and likely final educational qualification level.

Since the structure of the NCEA is different from the qualifications it replaced in 2002, we take a look at how the competency measures we have used in the study are related to NCEA achievements. Finally, we look at how other variables, such as engagement in school and relations with friends, relate to the number of Level 1 NCEA credits gained, and the student scores on the competency measures we have used: What kind of experiences and behaviours are associated with higher scores and credits gained?

Competency levels[11]

In the Competent Children, Competent Learners study, we have measured both cognitive performance (in reading, writing, maths, and a nonverbal test, the Ravens Standard Progressive Matrices) and attitudinal performance (these are dimensions related to the new key competencies in the revised New Zealand Curriculum) since we started to follow the study participants at age near-5. At age 16 we moved to a new test for literacy and numeracy, since we had reached a ceiling on the Progressive Achievement Tests (PATs), and we also wanted a shorter test to encourage the young people to stay in the study.

Cognitive competency measures—student assessments

At age 16, we measured literacy and numeracy by asking the students to answer questions in a subset of the International Adult Literacy Survey (IALS) that was drawn for the study by Statistics Canada, based on the pattern of age-16 New Zealand results when the IALS was first undertaken, in 1996. We continued to use the Standard Progressive Matrices to measure logical problem solving.

For analysis purposes, results from each of these three measures (literacy, numeracy and logical problem solving) were converted to 10-point scales, and scores for each scale calculated for each student. The average scores were 6 (s.d. 1.5) for numeracy, 6.4 (s.d. 1.2) for literacy, and 8 (s.d. 1.0) for logical problem solving. While students appeared to show the highest average levels of competency for logical problem solving it should be noted that many had reached a "ceiling" for achievement using these matrices compared to the larger gains they had made between each two-yearly interval when they were younger (Wylie & Hodgen, 2007). The standard deviations suggest there was slightly more variability for numeracy than for the other two competencies.

Attitudinal competency measures—teacher assessments

As in all the previous rounds of the study, we asked the participants' teachers (n = 1,250, up to three teachers for each student) to respond to a range of items about the young people in order to measure their attitudes in school. These items included some we have asked throughout the study, as well as new items that give us further

[11] A fuller picture of the age-16 competency levels, and how they relate to previous competency levels is given in Wylie and Hodgen (2007), with the complete picture in the technical report by Hodgen (2007).

material that is relevant to the key competencies now included in the revised New Zealand Curriculum.In past rounds of the study, we have defined each competency before analysis. In this round, because we were adding new items to provide more insight into the key competencies, we undertook factor analysis to identify competencies. This means that we are using new labels for competencies, other than for social skills.

Four factors were developed from the patterns of responses to these items, which we have labelled *thinking and learning; focused and responsible; social skills;* and *social difficulties*. The individual items that make up the four factors are shown in Figures 2–5. In these figures the patterns of responses are averaged for each student across the three teachers who gave us their views. These were the English teacher (n = 418), those who taught subjects nominated as students' most enjoyed (n = 415), and those who taught subjects nominated as the students' least enjoyed (n = 417). The teachers did not know how the students categorised their subject.

Subjects nominated as the most enjoyed covered a wide range. Mathematics or a science was chosen as least enjoyed subjects by 62 percent of the age-16 students.

Teachers' ratings of the same student did differ. Generally, teachers of the classes students nominated as their most enjoyed gave an individual student higher ratings than did their English teacher, or the teacher of that student's least enjoyed class. The latter tended to give the lowest rating of the three teachers.

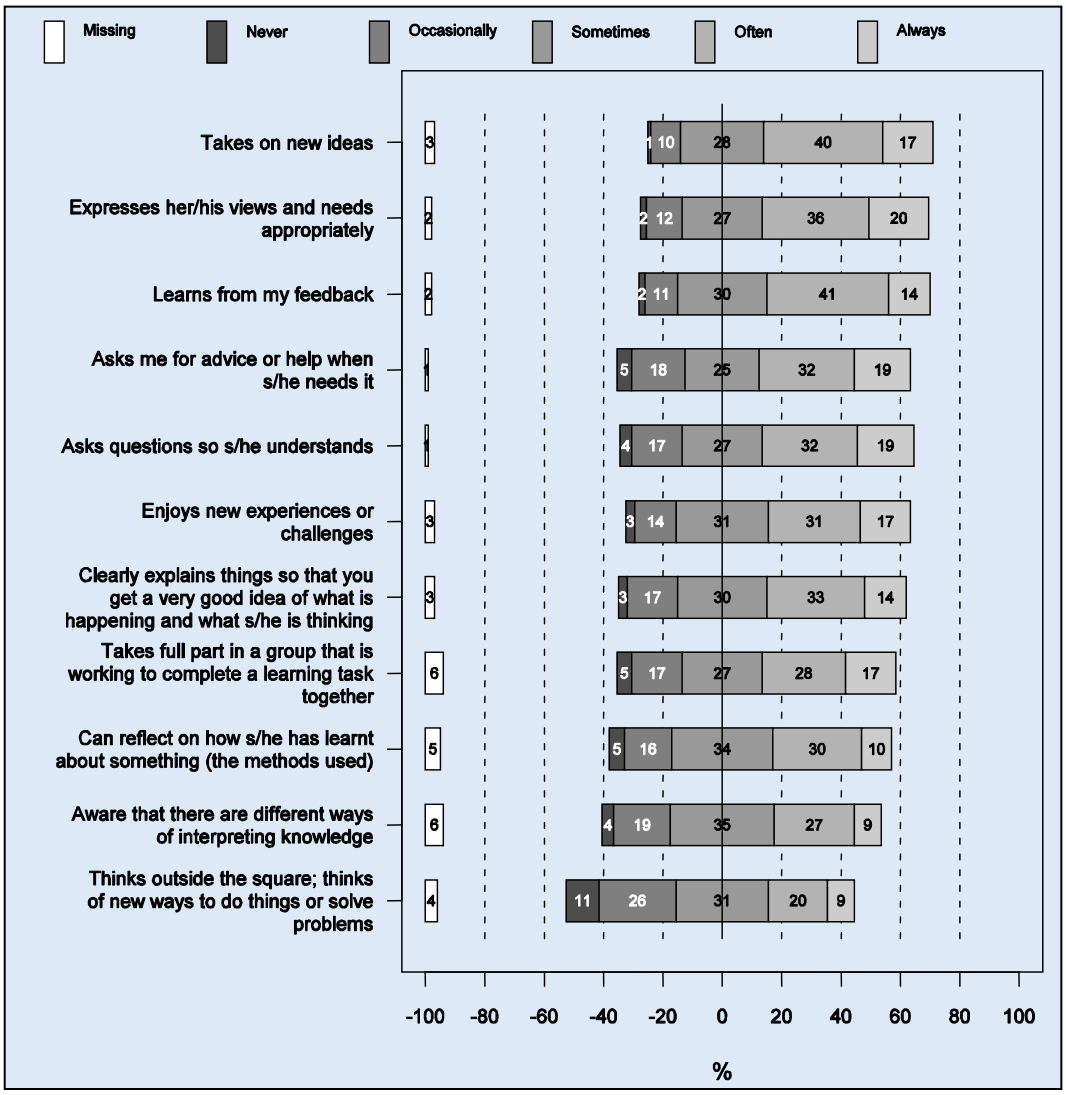
These differences between teachers' perceptions and indications that students act differently in different classes relate to some extent to differences in the opportunities to learn that students experienced in their classes. These differences are explored in Chapter 7.

While each of these four factors was distinct, perhaps not surprisingly there was a very strong correlation between three of the competency factors: *thinking and learning*, and *focused and responsible* (r = 0.85), and between these two and *social skills* (r = 0.80 & 0.73 respectively). In other words, a student who received a high average rating for their *thinking and learning* behaviour was also likely to receive a high rating for their showing *focused and responsible* behaviour, and their *social skills.* However, the correlation between these three factors and the fourth, *social difficulties*, was lower (r = -0.48, -0.65, and -0.52 respectively), though still moderate to strong, indicating that some students with a high score for *thinking and learning* or being *focused and responsible* also experienced some degree of *social difficulties.*

Figure 2 shows the responses across all 1,250 teachers for the *thinking and learning* competency. The percentages refer to the percent of teachers giving a particular rating for one of the items. Seventeen percent of the 1,250 teachers thought that the student they were describing always takes on new ideas, for example. [12] Around half the teachers perceived that the student often or always showed openness to new ideas, an active curiosity, and an active role in ensuring that they understood things.

[12] Because we did not have exactly three teacher responses for each student (the number varied between none and three, with the vast majority having three), it is not quite true to say "Seventeen percent of the *students* are seen by teachers to always take on new ideas", although this will, approximately, be true.

Figure 2: Thinking and learning competency



Responses for the four items ranked lowest on Figure 2 are interesting. These items illustrate metacognitive dimensions of the key competencies as defined in the revised New Zealand Curriculum (Ministry of Education, 2007). For example, reflecting on how one has learnt about something is a dimension of the *thinking* and *managing self* key competencies and has particular salience for lifelong learning. Working in a group together can alert students to the different ways their peers may perceive the question or concept being discussed, while providing opportunities to strengthen competencies in *relating to others* and *participating and contributing*. Being aware that there are different ways of interpreting knowledge potentially sits at an intersection of the key competencies *thinking* and *using language, symbols, and texts*, with the knowledge components of the eight learning areas of the curriculum. It is food for thought that the teachers perceived that students displayed these aspects of competency less often than the more traditional thinking and learning dimensions.

Figure 3 shows the responses across all teachers for the *focused and responsible* factor. On the whole, teachers' views show that the age-16 students were reasonably well organised. More than three-quarters of the teachers reported that the target student often or always turned up to class on time, brought all the equipment they needed, and took responsibility for their own actions. They did not do everything asked of them: just over half

often or always finished all their class work, and just under half, their homework. (Recall that half the students at age 16 said they did not like doing homework, for a range of reasons.) In terms of stretching or challenging themselves, 40 percent assessed their own work and made improvements to it before handing it in, and around a third chose work that allowed them to gain further knowledge or skills. Relatively few students were seen to act often or always without thinking of the consequences.

This factor illustrates many dimensions of the curriculum key competency *managing self.* However, as for *thinking and learning*, those items that illustrate deeper, more transformative "layers" of key competencies tended to be rated as happening less often. For example, persisting in the face of difficulties and choosing work that will be personally extending are both indicators of the dispositional aspects of *managing self* and they highlight intrinsic qualities of importance for lifelong learning. Voluntary self-assessment and improvement of work again points to reflective metacognitive dimensions of *thinking*.

Figure 3: Focused and responsible competency

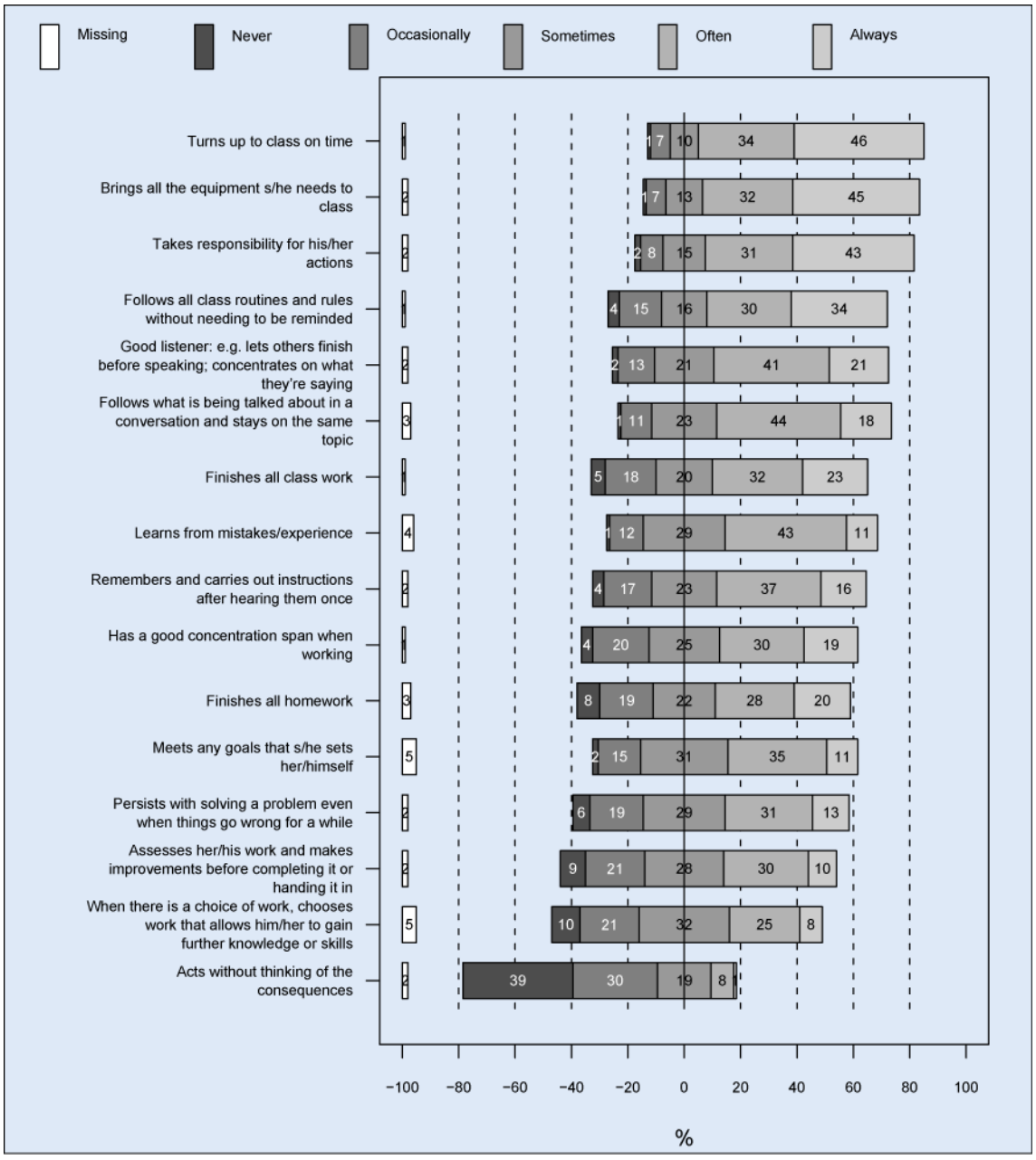


Figure 4 shows the teacher responses across all 1,250 teachers for the *social skills* factor. Here there is a clear link to the curriculum key competency *relating to others*. Two-thirds of the teachers saw their student often or always showed tolerance (respects other points of view or different ways of doing things) but, overall, students were perceived to be less proficient at being able to present their own point of view in an appropriate manner even when there was a disagreement or at resolving any disputes that arose.

Figure 4: Social skills competency

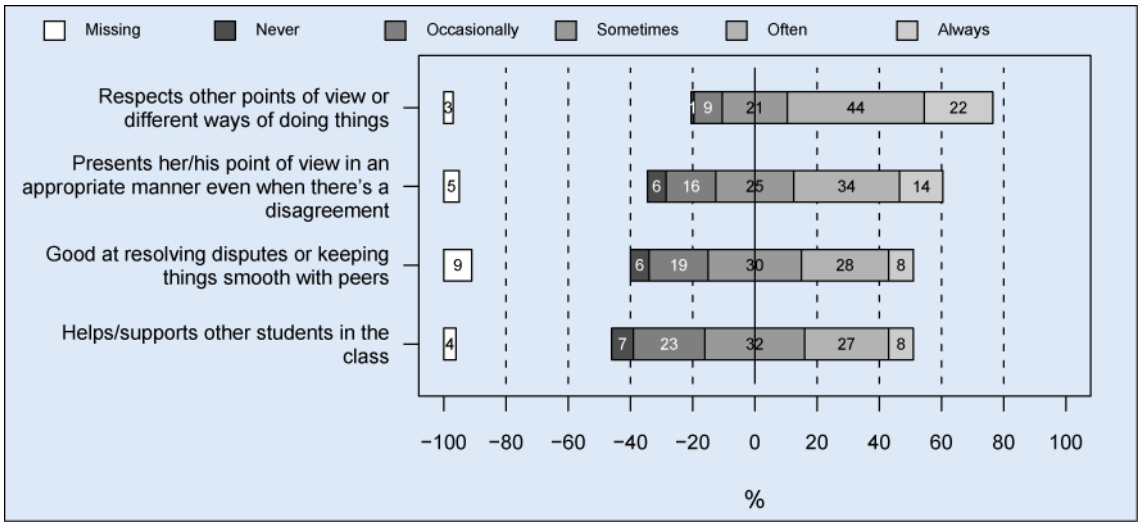
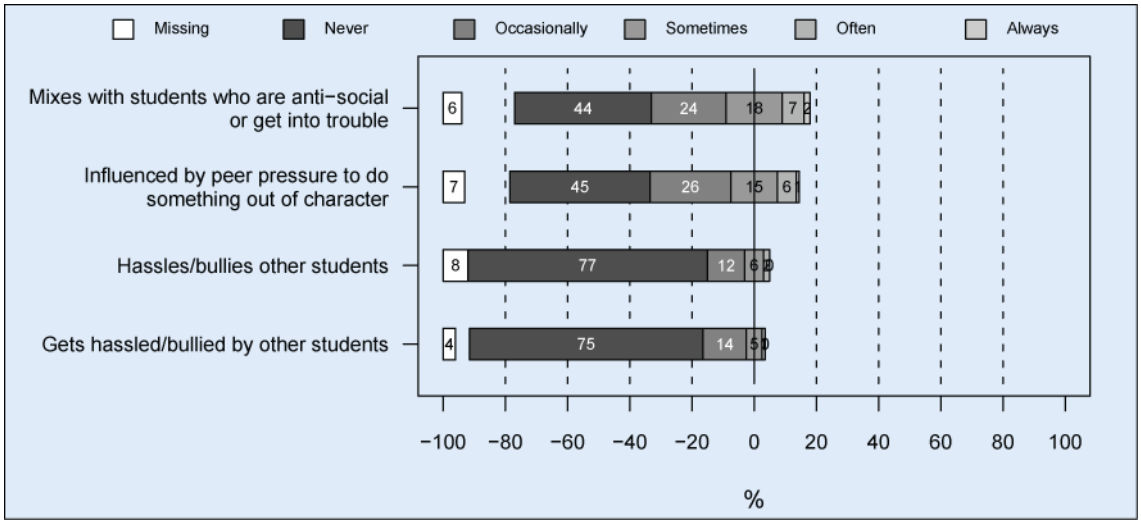


Figure 5 continues the key competency theme of *relating to others* and shows the averaged teacher responses for the *social difficulties* factor. Students who were seen by their teachers to have marked levels of social difficulties were a small minority. Less than 10 percent of the teachers reported a student who often or always mixed with antisocial peers, or were influenced by peer pressure to do something out of character, though this had increased since age 14. Involvement in bullying (that teachers knew about) was also uncommon, and much the same as at age 14.

Figure 5: Social difficulties competency



Teachers' overall judgements of ability and future achievement

We also asked teachers to give a global judgement about the ability of the students, and their view of their likely achievement in NCEA and post-school qualifications. Bear in mind that this sample has an over-representation of students from homes with higher levels of maternal qualification and income, and thus the picture below is likely to be somewhat more optimistic than would be found nationally. The frequencies given below are for all

three teachers of English, most enjoyed subject, and least enjoyed subject (*n* = 1,250). The differences between the views of the three categories of teacher are discussed more fully in Chapter 8.

Overall achievement level in comparison to others in their class: 22 percent of the teachers indicated the student we asked about was performing at a very good/excellent level, 25 percent at a very good level, 28 percent at a medium level, 20 percent below average, and 4 percent at a minimal level.

Around half the teachers thought the student we asked about was likely to have received a Level 3 NCEA or scholarship qualification by the time they left school; this is much higher than the actual proportion of school leavers achieving at this level (36 percent in 2006).

Likely NCEA qualification level by the time they left school:

Scholarship:	5 percent
Level 3:	46 percent
Level 2:	24 percent
Level 1:	15 percent
None:	5 percent

Just under half were also thought likely to go on to university.

Likely post-school qualification level

Postgraduate degree:	14 percent
Undergraduate degree:	35 percent
Tertiary diploma:	19 percent
Trades qualification:	10 percent
No post-school qualification:	1 percent
Don't know:	21 percent

Competencies at home

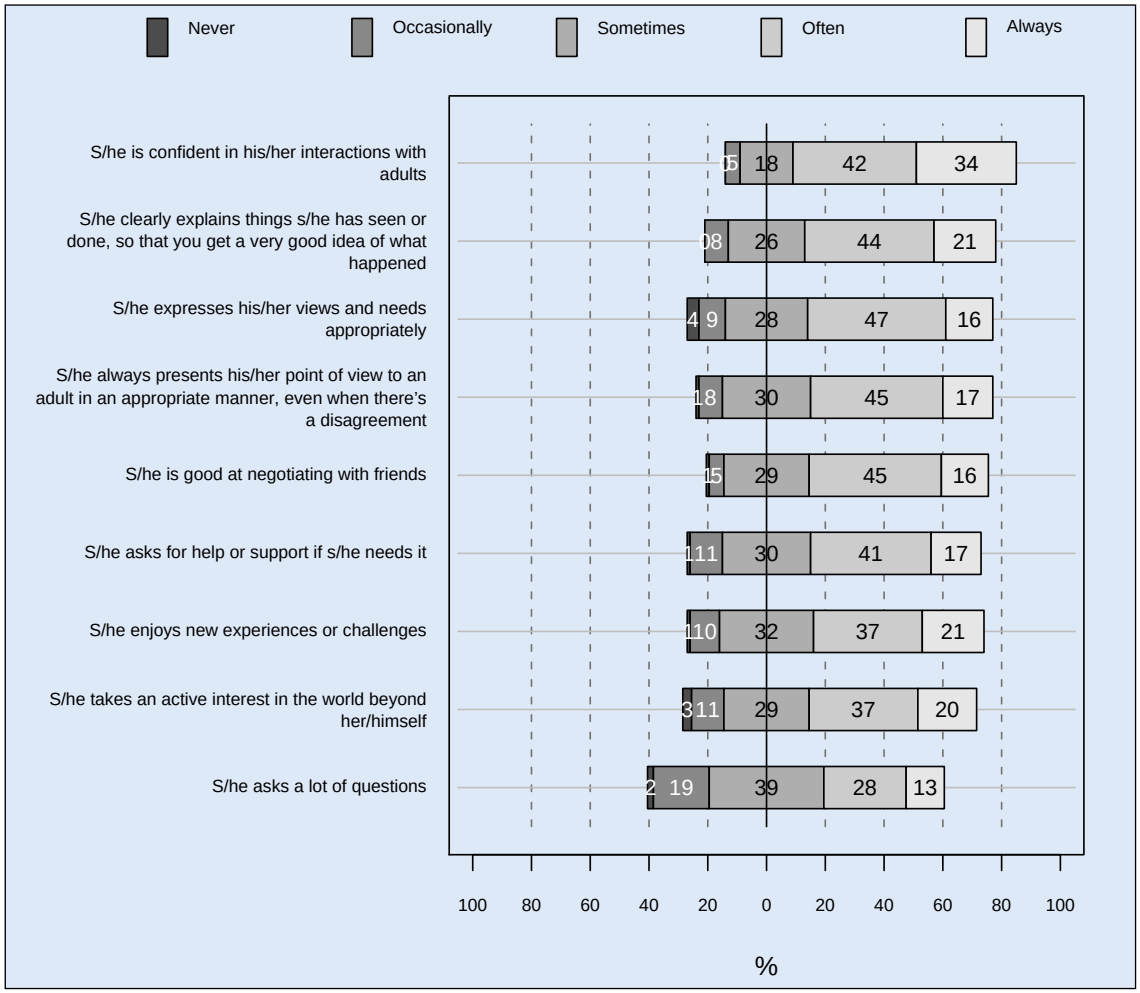
We asked all the parents (*n* = 438) to rate their child's attitudes and behaviour on a slightly smaller range of items that were the same or similar to those asked of the teachers of the school stayers.

The factors that were identified here are different from the factors that were identified for the teacher views, possibly indicating differences in the relationships and contexts in which parents and teachers see behaviour. The three factors identified among parental responses were: *self-confidence, self-efficacy,* and *responsibility*. The 16-year-olds' mean scores were highest for self-confidence, and lowest for self-efficacy.

Self-confidence

Three-quarters of the young people were seen by their parents as often or always confident in their interactions with adults; and over half were often or always clear in their communication, and open to what was happening around them. They were less likely to ask a lot of questions, however.

Figure 6: Parent view of their 16-year-old's self-confidence

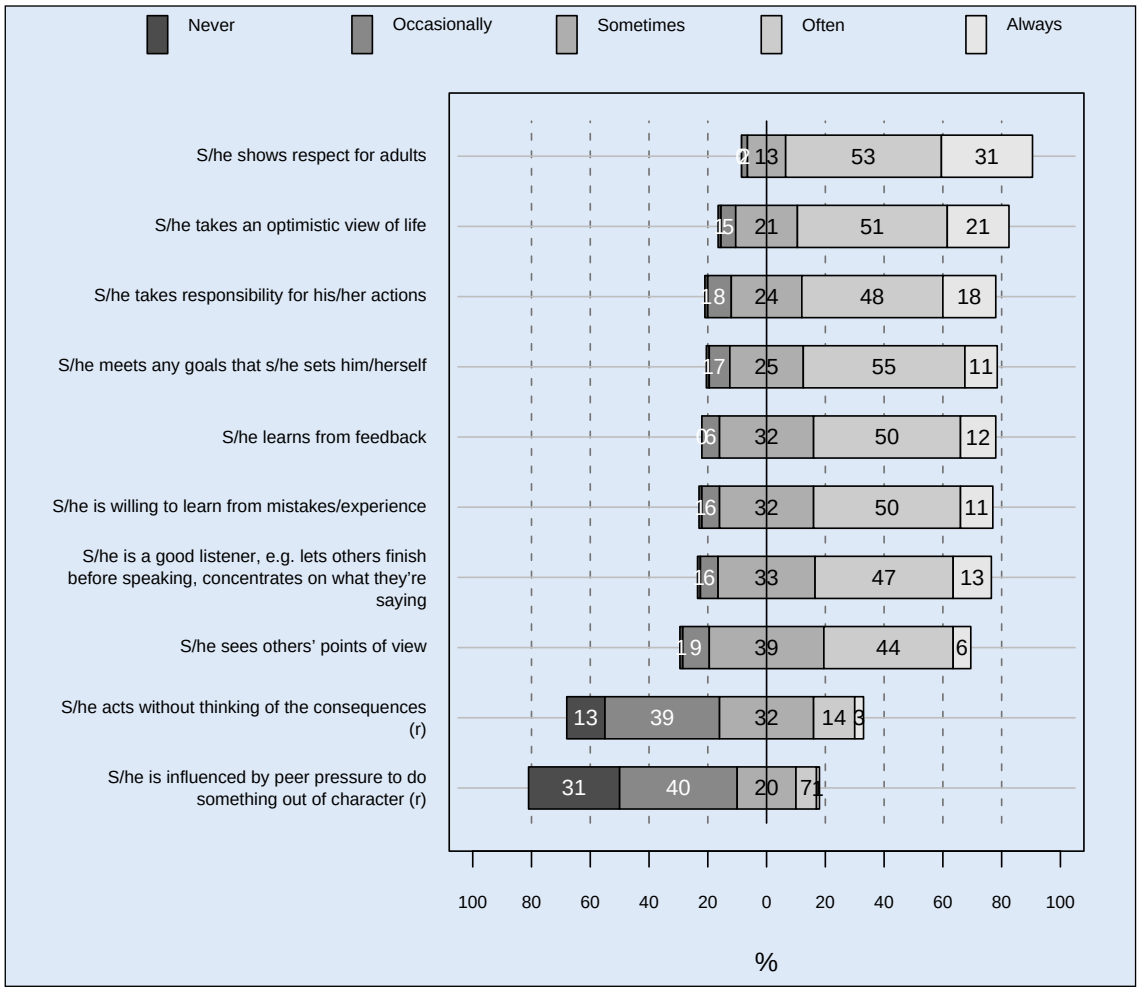


Self-efficacy

Most of the young people's parents thought they often or always showed adults respect. Round two-thirds thought their child met their goals, or were willing to learn from mistakes. Half thought that their child never or only occasionally acted without thinking of the consequences, and somewhat more, that they were not influenced by peer pressure to do things out of character.

In Figure 7, the (r) in the text for bottom two bars indicates that the item score was reversed when the scale measure was calculated.

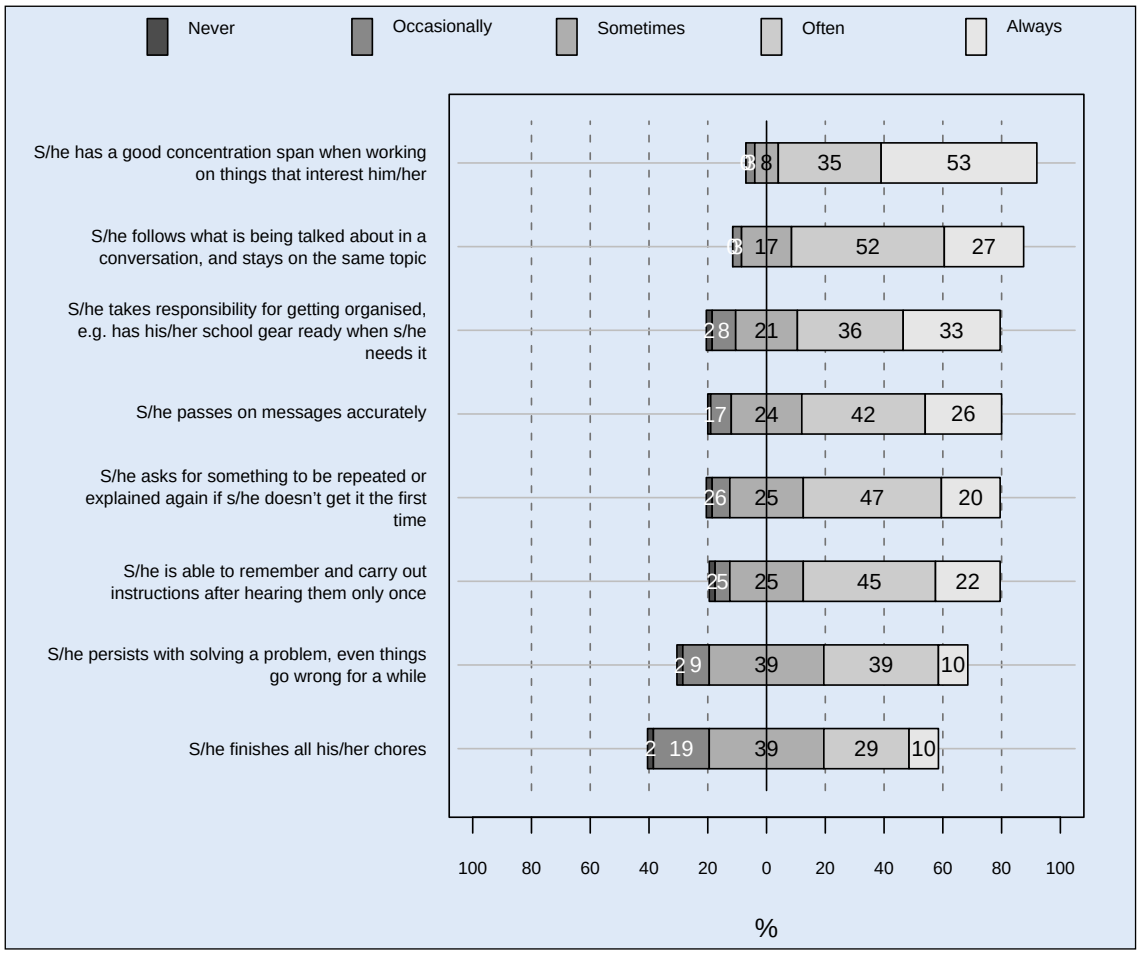
Figure 7: Parental view of student self-efficacy



Responsibility

If they were interested in something, most of the young people had a good concentration span, though only half were seen by their parents to always or often persist with solving a problem, even when things went wrong. They were better at getting organised and passing on messages than finishing all their chores.

Figure 8: Parental view of student responsibility



A few items asked of parents were not sufficiently correlated with any others to make factors, indicating that the behaviours below, such as thinking outside the square, can occur with, for example, different levels of self-efficacy or self-confidence:

- Sixty-one percent of the young people's parents thought they often or always sought information before making a decision
- 57 percent of the young people often or always thought outside the square
- 45 percent often or always organised their time to get things done.

Comparing competencies at home and at school

There was only a moderate to low level of correlation between the views of teachers and parents, i.e., teacher and parent ratings of the same young person were usually not identical, but were also not wildly different. For some young people, the level of agreement between teachers and parents was good; for others it was partial, and for others it was poor. It seems that young people *do* respond differently to home and school environments, some more than others, and that they show different levels of responsibility and self-efficacy in these environments. The difference in these environments may also account for the levels of responsibility and self-efficacy they can show. For example, looking at overall percentages (rather than correlations for individuals), parents were more likely than teachers to think that their child often or always:

- *Had a good concentration span while working:* there was a 37 percentage point difference in teacher/parent responses, but note that the parent question did add the phrase "when working on things that interest him/her". Thus this difference may largely reflect concentration when working on a task freely chosen, compared with concentration on a task determined by someone else—in this case the teacher.
- *Meets any goals that s/he sets her/himself:* 20 percent more parents than teachers said this happened often or always. Again, the difference might relate to students' active engagement in such goals, including their reasons for setting them.
- *Clearly explains things so that you get a very good idea of what is happening and what s/he is thinking:* 18 percentage points difference—the parent version said "clearly explains things he/she has seen and done so you get a good idea of what happened" suggesting this is about discussions of events, whereas in-school explanations are more likely to relate to abstract/conceptual matters, at least some of the time.
- *Follows what is being talked about in a conversation and stays on the same topic*: this item was identical for parents and teachers but, again, there was an 18 percent difference in response frequencies. It is likely that conversations at home will cover a wider range of topics than classroom conversations, and perhaps will be more free-ranging.
- *Remembers and carries out instructions after hearing them once*: here there was a 14 percent difference. Perhaps, again, the salience of the task makes the difference.
- *Presents his or her view in an appropriate manner even when there's a disagreement*: 13 percent more parents agreed this happened always or often. Their item added the qualifier that this was about discussions with an adult. Teachers could have been thinking also about peer-to-peer conversations.

However, there are also likely to be differences in the manner in which teachers and parents arrive at their views of young people's competency levels, and the information they use to "measure" a young person against. Teachers could compare each student with a large number of young people in school settings, while parents might compare their child with a smaller number of young people known to them, or with how they see other young people behave in public settings.

There were no directly and fully comparable items on which the teachers were more likely to rate something happening than were the parents.

NCEA achievements

NCEA began in 2002, and had three years to bed in before students in this study reached Year 11, usually the first year when students undertake assessment for credits linked to one of the three levels of the NCEA.[13] While the NCEA qualification was intended to provide more flexibility, the choice of which credits to work toward, and the number and kind on offer, is largely related to the structure of the courses students take. Chapter 6 outlines four clusters of subject combinations found at both Year 11 and Year 12.[14]

We found some interesting patterns that indicate that quite a number of Year 11 courses are being assessed for both Level 1 and 2 credits, with a somewhat lower number at Year 12 offering assessments for both Level 2 and 3 credits. It was possible for a student to have gained some Level 2 credits, but still be short of the 80 Level 1 credits needed for a Level 1 NCEA qualification. Seventy-two percent of the Year 11 students in this study gained the 80 credits needed for a Level 1 NCEA qualification. Just over half had also gained some Level 2 NCEA credits.

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13 Seven students were taking the Cambridge examination, and did not undertake any NCEA assessments.

14 Reflecting the nature of the subjects in each cluster these were given the names: traditional arts; traditional science; contextual subjects; and traditional vocational. See the appendix for listings of subjects most likely to be taken by students in each cluster.

Most of the age-16 students gained a high proportion of the NCEA credits they attempted, though students taking mainly vocational subjects gained fewer than others. Subject clusters did offer different numbers of credits to students. On average, Year 11 students in the "vocational" and "contextual" subject clusters ended their year just short of the 80 credits needed for a Level 1 qualification; those in the "traditional arts" and "science" subject clusters ended their year with far more than they needed. Close to 90 percent of the Year 11 students in the arts and science clusters gained 80 credits or more, as did 42 percent of those in the "vocational" cluster and 14 percent in the "contextual" cluster. One percent of the Year 11 group (two students, both in the "traditional arts" cluster) had also gained sufficient Level 2 credits for a Level 2 NCEA qualification, with 53 percent gaining some Level 2 credits. Here the subject cluster difference was much less marked: 64 percent of those in the "contextual" cluster had gained some Level 2 NCEA credits, as had 60 percent of those in the "traditional arts" cluster, 49 percent of those in the "traditional science" cluster, and 46 percent of those in the "vocational" cluster. Eight Year 11 students had also gained some Level 3 NCEA credits: two from each subject cluster.

By Year 12 the number of students with sufficient credits for a Level 1 qualification had increased from 72 to 84 percent. All of the traditional arts students, 94 percent of the traditional science students, 78 percent of the "contextual" cluster students, but only 40 percent of the "vocational" cluster students were successful in gaining NCEA Level 1 by the end of Year 12.

Looking at Level 2 NCEA, we find that 98 percent of the students in the "traditional arts" cluster in Year 12 had gained the 60 Level 2 credits needed for this, as had 86 percent of those in the "traditional science" cluster. Fifty-one percent of those in the "contextual" cluster also had this number of credits, as had 21 percent of those in the "vocational" cluster. One student (in the "traditional arts" cluster) had the 60 credits needed for a Level 3 qualification, and 28 percent had some Level 3 credits—with similar proportions here for each cluster.

The two tables below give the total number of NCEA credits gained. They show that, on average, most Year 11 students in the traditional and "contextual" clusters and most Year 12 students gained most of the credits they aimed for; they also show differences in the number of credits on offer related to subject clusters.

Table 4: Year 11 Competent Learners' first year of NCEA credits (n = 156)

Subject cluster	Range of credits attempted	Mean no. credits attempted	Mean no. credits gained	% gained of those attempted
Traditional arts	82–214	147	138	93
Traditional science	74–188	137	121	87
Contextual subjects	57–106	79	71	90
Vocational subjects	23–154	102	79	78

Table 5: Year 12 Competent Learners' cumulative NCEA credits (*n* = 261)

Subject cluster	Range of credits attempted	Mean no. credits attempted	Mean no. credits gained	% gained of those attempted
Traditional arts	219–352	286	267	92
Traditional science	133–365	253	218	85
Contextual subjects	124–298	210	165	78
Vocational subjects	22–306	140	114	83

Although there was considerable within-cluster variability, it is clear that the more academically inclined students—those who are most likely to still be studying at Level 3—are gaining far more than the 80 credits needed at Level 1, when arguably they do not need these for any qualifications purpose. This must represent a considerable amount of assessment activity for them.

The situation is somewhat different for students who do not experience learning success quite so quickly or easily. The NCEA was designed as an award students could work toward progressively. The achievement patterns described do show evidence that most Year 12 students in "contextual" clusters who had not gained a Level 1 award by the end of Year 11 had succeeded in doing so by the end of Year 12. Students in "vocational" clusters were still less likely to have gained a Level 1 NCEA award, even after two years. However, the credit record of these students provides encouraging evidence that they are being given more opportunities than in the past to experience success in gaining qualifications from their learning, even if they take two years to gain an NCEA award. It is of particular interest that the "percentage achieved" success rate of the Year 12 students in the "contextual" and "vocational" clusters is almost as high as for those in the two more traditional academic clusters. This is also encouraging because it was an express intention of the reforms that students be assessed when ready and so come to see themselves as successful learners. This is one of the conditions necessary to encourage the development of "lifelong learning" dispositions, which has been at least an implicit policy intent of the NCEA assessment regime (Hipkins, 2005).

Other research suggests that the enhanced success rate will have been achieved by focusing more on internally assessed standards where teachers can support students to demonstrate their learning, and by limiting less confident students' exposure to external examinations (Hipkins, R., Vaughan, K., Beals, F., Ferral, H., & Gardiner, B., 2005). One study has suggested that low achieving students who have been disengaged in earlier years might be even encouraged to re-engage in learning if they experience success in gaining unit standards credits in a context for which they can see personal relevance and practical value, early in the school year (Boyd, with McDowall & Ferral, 2006).

Consistency of NCEA results and the project competency measures

NCEA is a new way of measuring student achievement, and has proved to be somewhat controversial. We visit some of those controversies in Chapter 9, when we look at whether students are using NCEA to make easy choices, and at their decision making around specific assessments.

One of the issues raised is how well the NCEA measures student ability. The Competent Children, Competent Learners study provided us with an opportunity to see how consistent NCEA results were with competency measures that are more traditional in the sense of describing performance levels in terms of numbers on the

same scale, and in the case of the cognitive composite, on multichoice tasks. We found considerable consistency, indicating that NCEA results are not giving a different picture than the traditional measures.

We looked first at the correlations between our cognitive composite (the average of scores for literacy, numeracy, and logical problem solving), the attitudinal composite (the average of scores for three attitudinal competency factor scores, *focused and responsible*, *thinking and learning*, and *social skills*), the four attitudinal competencies taken separately, and the total number of Level 1 NCEA credits gained (whether unit or achievement standards),[15] the proportion of achievement standards at the excellent level, the proportion of achievement standards at the merit level, and the proportion of achievement standards that were achieved. What we found was that the correlation levels for the cognitive composite, the attitudinal composite, and the *focused and responsible* competency were moderate to strong: between 0.53 to 0.61 for all but the proportion of standards gained at the achievement level, where the correlations were 0.39 to 0.43. Correlations between NCEA achievement and the two social skills measures were lower. Thus a student with a low level on both our cognitive and attitudinal competency composites was also likely (but not always) to achieve fewer Level 1 NCEA credits than a student with a medium or high level on our competency composites. But a student's social skill level as we measured it was unrelated to their NCEA achievement.

Table 6 shows how much the average number of Level 1 NCEA credits can vary dependent on levels of performance on the cognitive composite, on showing *focused and responsible* attitudes, and the student's approach to NCEA. For example, it shows that students in the lowest cognitive competency quartile group[16] gained an average of 78.7 Level 1 NCEA credits, cf. the average of 154.9 credits for those in the top quartile group on the cognitive competency.

Table 6: Mean (and standard deviation) of total number of Level 1 NCEA credits gained by students with different competency levels

Quartile group	Cognitive composite		Focused and responsible		NCEA approach	
	Year 11	Year 12	Year 11	Year 12	Year 11	Year 12
Lowest	78.7 (29.6)	146.2 (51.0)	79.2 (28.9)	142.8 (53.5)	88.7 (35.1)	149.9 (48.4)
Second lowest	111.4 (31.6)	179.9 (63.1)	99.6 (35.8)	186.0 (52.8)	107.4 (28.7)	185.8 (63.3)
Second highest	121.3 (31.4)	210.3 (60.0)	127.4 (29.5)	221.8 (51.9)	121.9 (35.9)	223.8 (51.5)
Highest	154.9 (26.5)	249.5 (60.0)	145.9 (24.7)	270.0 (43.3)	147.5 (27.0)	253.3 (60.3)

Comparing the standard deviations, we see more variability among the credits obtained by Year 12 students than Year 11 (e.g., the standard deviations in relation to cognitive composite scores are between 26.5 and 31.6 for all quartile groups at Year 11, cf. from 51 to 63.1 for all quartile groups at Year 12). But there is no consistent pattern in the variability of the number of credits gained in relation to different quartiles; i.e., there is no greater

[15] We compared the total number of Level 1 NCEA credits gained, rather than the total number of credits, as both Year 11 and Year 12 students had all had the opportunity to attempt Level 1 credits. Also, while both Year 11 and Year 12 students have approximately equal numbers of Level 1 credits (on average, Year 12 students have slightly more), they have very different total numbers of credits.

[16] The different levels of competency used are based on the four quartile groups (the bottom quarter, second-to-bottom quarter, second-to-top quarter, and top quarter of the students) for that competency. Approximately a quarter of the students are in each quartile group (97 to 110 students, depending on how many students had a measure equal to one of the cut-points for a score).

variability in credit numbers for students in the lowest quartile groupings than there is for those in the highest quartile groupings.

We then undertook multivariate statistical modelling[17] to see if we could predict the total number of NCEA credits an age-16 student would get from their competency scores. Both cognitive and attitudinal composite scores proved to be reasonable guides to NCEA success.

A model that included the cognitive composite, *focused & responsible*, and English teachers' views of the student's approach to NCEA (*"NCEA approach"*) accounted for 68 percent of the variability in the total number of Level 1 NCEA credits gained by Year 11 students, and 60 percent of the variability in the total number of Level 1 NCEA credits gained by Year 12 students. So higher numbers of credits gained reflect cognitive composite levels. Higher number of credits were also associated with positive attitudes to work, in particular to work for the NCEA, and the ability to focus on the task in hand and take responsibility—and these attitudinal factors gained more weight at Year 12. The two school engagement factors[18] were also included in this model, but did not show separate contributions to the variance in student scores, probably because of their correlation levels with the other variables, and because the number of Level 1 NCEA credits gained was more strongly correlated with the cognitive and attitudinal competencies than with school engagement.

Associations with the proportion of achieved, merit, and excellence standards

We could also account for a reasonable proportion of the variance in the proportion of standards[19] a student gained that were at the merit level, and the proportion that were judged excellent—but our models were less successful in accounting for the variance in the proportion of standards that were achieved. We could only account for 20 percent of the variability in the latter, with the cognitive and attitudinal composite competencies the only variables remaining in the model.

A possible reason for this is that a student with a relatively high proportion of standards that were "achieved" has a less clear description in terms of their overall performance than does a student with a high proportion of standards that were at the "merit" (or "excellence") level. So a student with 80 percent of their standards "achieved" who achieved "excellence" in the others, would most likely have a somewhat different overall profile from a student with 80 percent of their standards "achieved" who did not achieve the remainder of their standards attempted. Just using the percentage of standards that were achieved cannot differentiate between these two groups.

The model accounting for the proportion of NCEA standards gained at the merit level by a student accounted for 53 percent of the variability between students. In this model, the cognitive composite carried the most weight, followed by the student's level of being *focused and responsible*, their level for their *NCEA approach*, and also on their level on one of the three school engagement factors, *affirmed at school*.

Students with a low level of performance on the cognitive and attitudinal competency measures (in the lowest quartile group) gained merit in just over 10 percent of their NCEA achievement standards, while students with a

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17 For full details, see Chapter 9 in the technical report accompanying this report (Hodgen, 2008).

18 There were two factors related to student engagement evident in student responses about their behaviour at school, and how they felt about school. *Engagement in school* includes items about liking teachers, enjoying learning, and conversely (reverse scored to make the factor score) [not] getting bored, feeling restless, and wanting to leave school. *Affirmed at school* includes items about feeling safe, feeling that the student belongs, being treated as an individual, the fairness of school discipline and rules.

19 As these are proportional measures, the proportions were calculated as, for example, the total number of standards at the merit level (Level 1–3) out of the total number of standards that were achieved at any level (levels 1–3) by the student.

high level on these measures gained merit in over a third of their NCEA standards. The difference was slightly smaller in relation to levels on the *NCEA approach*.

Fifty-two percent of the variance between students in the proportion of the credits gained at the excellent level was accounted for in our model. Again, the cognitive composite carried the most weight, followed by the attitudinal composite, and *NCEA approach*. Students with a low level of performance on the cognitive and attitudinal composites and their approach to the NCEA managed to get excellence in 2 percent of their achievement standards, on average, where students with a high level of performance on the composite and attitudinal composites and their approach to the NCEA managed to get excellence in a fifth to a quarter of their achievement standards.

The gap between the highest quartile of performers on the composite and attitudinal composites and their approach to NCEA, and other students, was most marked in relation to the proportion of excellent standards received.

Factors relating to the competency scores and NCEA Level 1 credits

What differences in competency scores were associated with differences in current experiences, in patterns of some key experiences over time, and in social characteristics? In this section, we describe correlations between competency scores and other variables that are in scale form (e.g., scales relating to friendship, behaviour, school engagement)[20], and the level of variance in student scores accounted for in relation to categorical variables (e.g., values, motivation levels at age 14), for each of the age-16 attitudinal competencies, the cognitive composite, and the number of NCEA Level 1 credits.

Attitudinal factors

Table 7 shows correlations between scores on the four attitudinal measures, and the other scaled factors in the age-16 data. The correlations with other teacher views, of students' overall ability and their approach to NCEA, are very strong. Correlations with age-14 competency levels, and their then teachers' view of their overall ability, are also moderate to strong. Correlations with student reports of their engagement in school are moderate, as are those with their cognitive composite score at age 16. The stronger correlations, according to a somewhat arbitrary cut-point of 0.4 (or -0.4), are shown in **bold** face in the table, and the weakest (between -0.2 and 0.2) by –.

[20] These are described in Appendix 1, and in the chapters that focus on each of these variables in turn.

Table 7: Correlations between the four attitudinal competency measures at age 16 and measures of experiences and perceptions

Measure	Focused and responsible	Thinking and learning	Social skills	Social difficulties
Ability to cope with NCEA	0.91	0.82	0.65	-0.58
Overall ability	0.79	0.79	0.59	-0.45
Attitudinal composite 14	0.65*	0.62*	0.54*	-0.45*
Overall ability 14	0.63	0.61	0.48	-0.46
Engaged at school	0.55	0.46	0.42	-0.36
Cognitive composite 16	0.54	0.54	0.42	-0.43
Cognitive composite 14	0.53*	0.54*	0.41*	-0.44*
Affirmed at school	0.42	0.40	0.38	-0.25
Positive learning environment	0.36	0.34	0.30	-0.20
Attitude to work	0.35	0.39	0.29	-0.22
Parent view of responsibility	0.34	0.34	0.28	-0.24
Internal markers of learning 16	0.33	0.37	0.32	-0.20
Internal markers of learning 14	0.33	0.36	0.35*	–
Absorbed in learning	0.33	0.29	0.26	–
Satisfied with subject mix	0.30	0.28	0.23	–
Parent view of self-efficacy	0.22	0.29	0.29*	-0.23
Parent view of self-confidence	–	0.27*	0.22	–
Adverse events	-0.27	–	–	–
Disengaged in learning	-0.44	-0.30	-0.33	0.32
Friends with risky behaviour	-0.45	-0.31	-0.23	0.29
Risky behaviour	-0.51*	-0.35*	-0.30*	0.34*

* Variable is included in relevant model.

Looking at this table (and also thinking about factors that are *not* correlated at around 0.3 or more, i.e. show little correlation), the following patterns are worth thinking about:

- Risky behaviour and having friends with risky behaviour are the only factors from the friendship and family factors that show correlations of 0.3 or more with the attitudinal competencies. They are correlated more with being *focused and responsible* than they are with *social skills* or *social difficulties*—indicating that risky behaviour and some kinds of friendship warrant attention when it comes to school achievement, and not just in relation to relationships with others.
- Student views of their own school engagement, approaches to learning and their classes show moderate levels of correlation with teacher views of how they see students operating in the class and around school: again, more so for the *thinking and learning* and *focused and responsible* competencies than for the social competencies. This level of correlation between teachers and students, on somewhat different measures, is reasonable: teachers were not making their judgements on irrelevant things.

- Age-14 competency levels, and seeing learning in terms of internal (intrinsic) factors rather than seeing it as something done (just) to gain external recognition, continued to play a part in how student behaviour appeared to their teachers two years later. We return to this after we look at the relationship between the categorical variables and the four measures of competencies.
- The age-14 competency levels shown at school had a stronger association with student behaviour seen at school two years later than did student behaviour in the different context of home.

Other previous patterns are related to age-16 attitudinal competency levels, as we see in the following set of four tables. These tables set out the categorical variables that showed significant relationships with the competencies; the final column gives the proportion of variance in student scores accounted for by the factor, when we undertook single-factor (one-way) ANOVAs that examine each factor separately. These figures allow some comparison of the different weight of different factors; for example, in the next table we see that subject clusters and previous patterns of enjoyment of reading have stronger associations with scores on the *thinking and learning* scale than do gender or previous patterns of TV watching.[21]

[21] The R^2 is for each variable taken individually and since there are overlaps between each of these—e.g., those who had good or better school attendance were also more likely to gain more NCEA credits—this table and others in this format do not show what difference each of these factors might make for student performance if other things were accounted for. For example, if attendance was in the model, accounting for approximately 12 percent of the variability, how much *more* of the variability would the number of Level 1 NCEA credits account for? Probably less than 31 percent, and this was explored in the more complex models, and on 0 the *s indicate that one of the better possible models to predict age-16 levels of *focused and responsible* from age-14 competencies and age-16 attendance and out-of-school variables included the age-14 attitudinal and cognitive competencies, and age-16 parental view of self-confidence and attendance.

Thinking and learning

Table 8: Scores on the thinking and learning scale and categorical variables

Other variable	Pattern found	R^2 (% of variance explained)
Number of Level 1 NCEA credits	The higher the number of credits gained, the higher the scale score	31.0
Subject cluster	Higher scale scores associated with being in either "traditional arts" or science cluster	19.4
Enjoyment of reading ages 8–14	The higher the enjoyment of reading, the higher the scale score	12.7
Attendance at school	Similar levels for good–excellent attendance; lowest scores for those with poor attendance	12.3
Motivation at 14	The higher the motivation at 14, the higher the scale score	10.7
Maternal qualification	The more qualified the mother, the higher the scale score	9.6
School decile 8–14	The higher the decile attended across the years of school, the higher the scale score	7.0
Student values at 16	Students with "satisfying life" values likely to have higher scale scores, and those with "standing out" values to have lower scale scores	6.9
Family income at age 14	The higher the income, the higher the scale score	6.2
Ethnicity	Higher scale scores more likely for Päkehä/Asian students	4.5
Family income at age 5	The higher the income, the higher the scale score	4.3
Student interests at age 14	Creative interests associated with higher scale scores, followed by wide interests, and then sports. Computer games/no interests associated with lowest scale scores	4.0
TV watching ages 8–14	The less time spent watching TV, the higher the scale score	3.4
Family financial situation	The less likelihood of difficulty the higher the scale score	3.3
Gender	Females likely to have higher scale score than males	2.6
Involvement in bullying ages 8–14	The greater the involvement, the lower the scale score	1.2

Of particular interest here are how some previous opportunities, experiences, and attitudes continue to colour attitudes to school work at age 16. Most important of these is the enjoyment of reading—an indication that reading is not hard work, and is seen as being worthwhile, both key aspects of finding the reading necessary for senior secondary schoolwork a channel rather than a barrier. Opportunities to gain enjoyment of reading are linked to ways in which time is spent, which makes sense of the appearance of student interests, and TV watching in this table. Different opportunities are also linked to differences in family resources, including here family income levels before the young people started school, and linked to family income, differences in school social mix (indicated by decile).

Focused and responsible

Much the same set of opportunities, experiences, and attitudes appear linked to how well age-16 students were taking responsibility for themselves in the class setting. Not surprisingly, attendance shows more association with this factor than with *thinking and learning*; as do patterns of TV watching (perhaps indicating a somewhat larger propensity for passivity among heavy watchers).

Table 9: Scores on the focused and responsible scale and categorical variables

Other variable	Pattern found	R^2 (% of variance explained)
Number of Level 1 NCEA credits	The higher the number of credits gained, the higher the scale score	36.3
Subject cluster	Highest scale score associated with being in "traditional arts" cluster; lowest in "vocational" or "contextual" clusters	21.1
Attendance at school	The more frequent the attendance, the higher the scale score	18.8
Enjoyment of reading ages 8–14	The higher the enjoyment of reading, the higher the scale score	16.0
Maternal qualification	The more qualified the mother, the higher the scale score	11.2
Student values at 16	Students with "satisfying life" values likely to have higher scale scores, and those with "standing out" values to have lower scale scores	9.5
Motivation at 14	The higher the motivation, the higher the scale score	9.0
School decile, 8–14	The higher the decile attended across the years of school, the higher the scale score	7.7
TV watching ages 8–14	The less time spent watching TV, the higher the scale score	5.6
Ethnicity	Higher scale scores more likely for Päkehä/Asian students	5.4
Family income at age 14	The higher the income, the higher the scale score	4.4
Family income at age 5	The higher the income, the higher the scale score	3.7
Involvement in bullying ages 8–14	Higher scores for those with no involvement in bullying	3.6
Gender	Females likely to have higher scale score than males	3.5
Student interests at age 14	Creative interests associated with higher scale scores, followed by wide interests, and then sports. Computer games/no interests associated with lowest scale scores	3.0
Family financial situation	The less likelihood of financial difficulty, the higher the scale score	2.3

Social skills

Compared to the *thinking and learning* and *focused and responsible* factors, the *social skills* factor showed less association with subject cluster, school attendance, or the number of NCEA credits gained, and a stronger association with gender.

Table 10: Scores on the social skills scale and categorical variables

Other variable	Pattern found	R^2 (% of variance explained)
Number of Level 1 NCEA credits	The higher the number of credits gained, the higher the scale score	18.7
Enjoyment of reading ages 8–14	The higher the enjoyment of reading, the higher the scale score	13.7
Subject cluster	Lower scale scores associated with being in either "vocational" or "contextual" clusters	10.1
Maternal qualification	Higher scores for those whose mothers had a tertiary/university qualification	9.6
Motivation at 14	The higher the motivation, the higher the scale score	8.4
Attendance at school	Lowest scores for those with poor attendance, followed by those with fair attendance	7.4
School decile, 8–14	The higher the decile attended across the years of school, the higher the scale score	7.0
Student values at 16	Lowest scores for those with "standing out" values	6.2
Family income at age 14	Lower scores among those with family incomes less than $60,000	6.2
Gender	Females likely to have higher scale score than males	4.9
Family income at age 5	Lowest scores among the low-income group	4.3
Family financial situation	The less likelihood of difficulty, the higher the scale score	3.3
Student interests at age 14	Creative interests and wide interests clusters have higher scores than sports or computer games/no interests clusters	3.2
TV watching ages 8–14	The less time spent watching TV, the higher the scale score*	2.1

* Association is at the indicative level ($0.01 < p < 0.05$)

Social difficulties

The pattern of relationships seen here is similar on the whole to the pattern for the *social skills* factor, but the strength of the associations with age-14 motivation and the previous pattern of school social mix is lower, and the strength of association with gender stronger; involvement in bullying also appears here. The pattern here may point to some different trajectories: for some young people, higher scores than others for *social difficulties* at age 16 show a deepening of paths cut some time before; for others, higher scores may indicate current reactions to new events and experiences.

Table 11: Scores on the social difficulties scale and categorical variables

Other variable	Pattern found	R^2 (% of variance explained)
Number of Level 1 NCEA credits	The higher the number of credits gained, the lower the scale score	19.4
Enjoyment of reading ages 8–14	The higher the enjoyment of reading, the lower the scale score	10.1
Subject cluster	Higher scale scores associated with being in either "vocational" or "contextual" clusters	9.7
Maternal qualification	The more qualified the mother, the lower the scale score	9.6
Attendance at school	Highest scores for those with poor attendance, followed by those with fair or good attendance	7.7
Gender	Males likely to have higher scale score than females	6.1
School decile, 8–14	The higher the decile attended across the years of school, the lower the scale score	5.5
Student values at 16	Students with "satisfying life" values likely to have lower scale scores, and those with "standing out" values to have higher scale scores	4.6
Motivation at 14	Highest scores for those with low motivation at 14	4.5
Family income at age 5	The higher the income, the lower the scale score	4.3
Involvement in bullying ages 8–14	The greater the involvement the higher the scale score	2.3
TV watching ages 8–14	The more time spent watching TV, the higher the scale score*	1.8

* Association is at the indicative level ($0.01 < p < 0.05$)

Intrinsic and extrinsic motivation

There were reasonable correlation levels between three of these four competency measures and our measure *internal markers of achievement.* In this study, we have tracked whether students are seeing learning in terms of effort and internal markers of achievement, supporting intrinsic motivation and habits of thinking and application that will support ongoing learning, or whether they are more reliant on extrinsic motivation: how well they are doing in comparison to others. We have found that many students find motivation in *both* intrinsic and extrinsic markers.

Internal markers of achievement

At least two-thirds of the students usually or always saw doing well at school as working really hard, solving problems by working hard—and also that learning gave new ideas, and made them think about things.

Table 12: Internal markers of achievement (n = 421)

Internal markers of achievement	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
I do my very best	35	37	20	6	1
What I learn really makes sense	35	35	26	5	< 1
I solve a problem by working hard	32	42	20	4	1
I work really hard	31	45	20	3	1
I catch on quickly	24	47	21	7	1
Something I learn makes me think about things	23	53	19	4	1
I learn something interesting	22	50	21	6	1
I get a new idea about how things work	19	48	27	4	< 1

External markers of achievement

While many students thought they got good marks, they were not so sanguine about not having to try hard to get those marks; and they did not think that to do well at school necessarily meant one had done better than others.

Table 13: External markers of achievement (n = 421)

External markers of achievement	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
I get good marks/results	48	31	17	4	< 1
I'm the only one who can answer questions	14	27	25	26	8
I know more than other people	11	27	30	24	8
Others get things wrong and I don't	8	23	31	29	8
I don't have to try hard	6	18	32	36	8
I don't have anything hard to do	6	19	27	37	10

Intrinsic motivation

Because intrinsic motivation showed correlations with three of the four competency measures, and because it is related to the ability to keep learning (after school years), we examined its associations with other variables. The table below shows those associations—and the comparative lack of associations for our variable *external markers of progress*. What's particularly interesting here is the moderate to strong correlation with having a positive learning environment in current classes, as well as the moderate correlations with age-14 experiences, indicating that intrinsic motivation is both built up over time as well as supported with current experiences. It is also interesting to see how intrinsic motivation is related to aspects of family life and friendship that emphasise communication.

But developing an intrinsic sense of motivation is unrelated to other factors that we have seen related to three of the competencies, and that also thread their way through the patterns of achievement and engagement we describe next: those with risky behaviour or friends with risky behaviour are as likely to have developed intrinsic motivation in relation to learning as others.

Table 14: Correlations between internal and external markers of progress age 16 and measures of experiences and perceptions

Measure	Internal markers of progress	External markers of progress
External markers of progress	**0.52**	
Absorbed in learning	**0.51**	–
Positive learning environment	**0.48**	–
Internal markers 14	**0.41**	–
Attitude to work	0.39	–
Overall ability 14	0.35	0.28
Ability to cope with NCEA	0.33	–
Overall ability	0.33	–
Cognitive composite 14	0.33	0.28
Family communicates well	0.32	–
Absorbed in learning 14	0.31	–
Extending friendships	0.29	–
Cognitive composite	0.28	0.25
Inclusive family	0.28	–
Attitudinal composite 14	0.28	–
Confident at school 14	0.27	–
Praise & achievement	0.26	–
Parent view of responsibility	0.26	–
External markers 14	–	0.39
Disengaged in learning	-0.28	–

Correlations of over 0.4 are shown in **bold** face, those between -0.2 and 0.2 are shown as –.

The associations with language and communication that were evident in some of the correlations above also come through the associations that emerge when we analysed the categorical variables: time and effort put into activities that involve the use of language seem positively associated with building a sense that one's own effort makes a difference, and that doing well is a matter of gaining understanding as well as gaining marks. It is worth noting, however, that variations in young people's levels of intrinsic motivation are less likely than the competencies to be related to variations in achievement, as measured by the number of Level 1 NCEA credits, and they are less related to differences in subject cluster. We can see this positively, as an indication that what is a useful long-term learning attitude may not be dependent on external results, or subject hierarchies. It also

helps our understanding of learning and achievement—in negative as well as positive spheres—in some of those whose achievements in later life are such that one would be surprised to learn they had left school without qualifications, or had passed through school unremarked by peers or teachers.

Table 15: Intrinsic motivation and categorical variables

Other variable	Pattern found	R^2 (% of variance explained)
Number of Level 1 NCEA credits	The higher the number of credits gained, the higher the intrinsic motivation level	7.7
Subject cluster	Higher intrinsic motivation associated with being in "traditional arts" or science clusters	6.4
Motivation at age 14	Intrinsic motivation levels increased with age-14 school motivation levels	4.6
Enjoyment of reading ages 8–14	Intrinsic motivation levels increased with level of reading enjoyment	4.3
Maternal qualification	Highest intrinsic motivation levels for students with a university qualified mother; lowest for those whose mother had no qualification	3.4
Student values at 16	Students with "standing out" values had lower levels of intrinsic motivation	3.1
Age-5 family income	Lowest levels of intrinsic motivation for those from low-income families*	3.0
School decile, 8–14	Lower levels of intrinsic motivation for those who attended mainly decile 1–2 schools*	2.5
Student interests age 14	Highest intrinsic motivation levels among those in the creative or all-round interest clusters*	2.1
TV watching ages 8–14	The less time spent watching TV the higher the level of intrinsic motivation at 16*	1.9
Parent interests at 14	Highest intrinsic motivation levels for students whose parents were in the "literate-involved" cluster*	1.9
Involvement in bullying ages 8–14	Higher levels of intrinsic motivation among those with no bullying involvement*	1.8
Gender	Females had higher levels of intrinsic motivation	1.7

* Association is at the indicative level ($0.01 < p < 0.05$)

Associations with cognitive composite and Level 1 NCEA credits

Table 16 below gives the correlations that are likely to have non-neglible associations,[22] that we found between the number of Level 1 NCEA credits and the age-16 cognitive competency measure, with the factors relating to school and out-of-school views and relationships. There was a moderate correlation between our cognitive

[22] We have included all those of 0.2 and above (in absolute value), and have paid particular attention to those that have higher correlation levels than 0.4.

composite measure (the average of the students' scores for literacy, numeracy, and logical problem solving), and their achievement of Level 1 NCEA credits in a wider range of standards, indicating that a student who did well on our assessments would also be likely to do well on their NCEA assessments, and that literacy and numeracy levels are important to qualification success. But there was also a similar level of correlation with their performance on our attitudinal composite measure, indicating that these dispositions—key competencies—are also important to NCEA success. Age-14 levels on our cognitive and attitudinal measures showed much the same correlation with NCEA Level 1 success as age-16 levels, indicating the importance of previous experiences and habits.

What else might have a bearing on success with Level 1 NCEA? Teacher views of how students approach it, as we have already discussed; but not far behind that are student views of their level of school engagement (0.57). School engagement levels were more strongly correlated with Level 1 NCEA success than were feeling affirmed at school. Current school engagement levels (0.57) were much more strongly related with Level 1 NCEA success as age-14 levels of school engagement (0.30).

Risky behaviour played a part, as did having friends with risky behaviour, at a low to moderate level. These two variables showed a similar degree of association with the cognitive composite. But the cognitive composite has a much lower association with school engagement and feeling affirmed at school.

Table 16: Correlations between the number of Level 1 NCEA credits and age-16 cognitive composite, with measures of experiences and perceptions

Measure	No. of Level 1 NCEA credits	Age-16 cognitive composite
Cognitive composite 16	0.57	
Approach to NCEA	**0.64**	**0.50**
Overall ability	**0.64**	**0.64**
Attitudinal composite 16	**0.62**	**0.54**
Cognitive composite 14	**0.61**	**0.88**
Attitudinal composite 14	**0.59**	**0.58**
Engaged at school	**0.57**	0.32
Affirmed at school	0.36	0.22
Parent view of responsibility	0.34	0.39
Attitude to work	0.30	0.35
Engaged at school 14	0.30	0.31
Affirmed at school 14	0.29	0.21
Parent view of self-efficacy	0.28	0.26
Friends with risky behaviour	-0.32	-0.27
Risky behaviour	-0.35	-0.30

Correlations of over 0.4 are shown in **bold** face.

The next two tables give the results of our single-factor or one-way ANOVA analyses of the associations between categorical variables and first, the number of Level 1 NCEA credits, and second, scores on the cognitive composite measure. The variables that show the strongest associations are the subject cluster, and for NCEA credit totals, attendance, and for the cognitive composite, enjoyment of reading ages 8–14.

Besides the subject cluster, what are the similarities—the factors that account for similar proportions of variance in scores? Some of these are to do with opportunities, such as the current family financial situation, current family income, and family income at age 5. Some are to do with ways that students have spent time—such as their level of TV watching between ages 8 to 14, and their current values. School decile patterns between ages 8 to 14 also show similar levels of association for both the NCEA qualification totals, and the cognitive composite.

One difference is likely to relate to differences in the focus of the assessments. Enjoyment of reading between ages 8 to 14 plays more of a part in the cognitive composite (a third of which comes from a literacy test) than in Level 1 NCEA totals (which covers a range of subjects). Motivation levels at age 14 and maternal qualification levels also played a somewhat stronger part in the variability of the cognitive composite scores than they did in Level 1 NCEA totals.

But attendance and involvement in bullying between ages 8 to 14 (whether as victim, bully, or both) had much stronger associations with the total number of Level 1 NCEA credits than with the cognitive composite. Subject clusters also had a somewhat stronger association, and previous attitudes to school between ages 8 to 12 showed an association that was not apparent in relation to the cognitive composite. These differences might shed some light on how some entrepreneurs and others whose school records are patchy go on to do very well as adults in spheres that are of more importance or interest to them than school was, and where they are more prepared to use their knowledge, skills, and attitudes.

Table 17: Number of Level 1 NCEA credits and categorical variables

Other variable	Pattern found	R^2 (% of variance explained)
Subject cluster	Highest number of Level 1 NCEA credits for students in the "traditional arts" cluster; lowest in the "vocational" cluster	33.0
Attendance at school	Lowest number of Level 1 NCEA credits for those with poor attendance or attendance difficulties because of ill health	16.0
School decile 8–14	The higher the decile, the higher the number of Level 1 NCEA credits	13.8
Maternal qualification	The higher the level of maternal qualification, the higher the number of Level 1 NCEA credits	13.3
Enjoyment of reading ages 8–14	The higher the enjoyment of reading, the higher the number of Level 1 NCEA credits	10.8
Family income at age 5	The higher the family income at age 5, the higher the number of Level 1 NCEA credits	10.6
Motivation at 14	Lowest number of Level 1 NCEA credits for those with low motivation levels at age 14	9.9
Student values at 16	Highest number of Level 1 NCEA credits for students with "satisfying life" values; lowest for those with "standing out" values	7.8
Family financial situation 14	Highest number of Level 1 NCEA credits for those whose families were in comfortable financial situations at 14; lowest for those whose families were in difficult financial situations	7.8
Family income 16	The higher the current family income, the higher the number of Level 1 NCEA credits	7.8
Involvement in bullying ages 8–14	Lower number of Level 1 NCEA credits for those who were involved in bullying in at least two of the four study phases from ages 8–14	7.3
Ethnicity	Higher number of Level 1 NCEA credits for Päkehä/Asian students	4.1
TV watching 8–14	Highest number of Level 1 NCEA credits for those who had a low level of TV watching 8–14; lowest for those who had a high level	3.5
Attitude to school 8–12	Lower number of Level 1 NCEA credits for those who had been unhappy at school in at least one of the three study phases from 8–12	3.1
Student interests 14	Lowest number of Level 1 NCEA credits for those in the computer games/no interests cluster at 14*	1.9
Gender	Higher number of Level 1 NCEA credits for females*	1.1

* Association is at the indicative level ($0.01 < p < 0.05$)

Table 18: Scores on the age-16 cognitive composite scale and categorical variables

Other variable	Pattern found	R^2 (% of variance explained)
Subject cluster	Highest scores associated with being in "traditional arts" cluster; lowest in "vocational" and "contextual" clusters	25.2
Enjoyment of reading ages 8–14	The higher the enjoyment of reading, the higher the scale score	23.0
Maternal qualification	The more qualified the mother, the higher the cognitive composite score	18.1
Motivation at 14	The higher the motivation level at age 14, the higher the scale score	13.7
School decile 8–14	The higher the decile attended across the years of school, the higher the scale score	12.3
Student values at 16	Students with "satisfying life" values likely to have higher scale scores, and those with "standing out" values to have lower scale scores	8.7
Family income at 5	The higher the family income at age 5, the higher the composite score	8.7
Family income at 16	The higher the current family income, the higher the cognitive composite score	7.9
Family financial situation 14	Higher scores for those whose families were in comfortable financial situations	7.2
Attendance at school	No difference between good, very good, or excellent attendance, or those with poor attendance because of ill health or participation in sports/arts; lower scores for those with fair attendance, and lower still for those with poor attendance	4.8
Involvement in bullying ages 8–14	The greater the involvement, the lower the scale score	4.4
Ethnicity	Higher cognitive composite scores for Päkehä/Asian students	3.7
TV watching aged 8–14	The less time spent watching TV, the higher the scale score	3.7

Further insights from multivariate analysis

We used the correlations and associations reported in the tables above to form models to see how much of the variance in student scores we could account for, and which of the factors and categorical variables were the strongest—which would remain in the model, and make a separate contribution to it. In these models, we find that age-14 competency scores account for most of the variance, and as it were "soak up" other related factors. Some of the factors that remained in the model are not the ones that show the strongest associations when analysed as single factors; so it may be that they remain because they account for some unique part of the variability.

As an example, risky behaviour appears in these models for the cognitive competency and all the attitudinal competencies; and attendance in the teacher-rated competencies related to attitudes to class work (*focused and responsible*, *thinking and learning*), but not in the model for the number of Level 1 NCEA credits. However,

factors that show some association with risky behaviour (attendance and previous involvement in bullying) do appear in this model.

These models where performance or attitude levels two years earlier play such a strong role do account for a reasonable level of the variance in student scores at age 16—but not all of it. That tells us two things. First, that when it comes to the years when students encounter qualification assessments, their reaction to what they are offered does draw from the habits and attitudes and knowledge they have developed previously, in what we can think of as a "learning identity". But these models also show that prior performance levels are not the only thing that determines how students act in class, how they respond to the learning opportunities they are offered there, and how well they do on qualification assessments.

Table 19: Results of multivariate models to predict age-16 competency and Level 1 NCEA credits using age-14 and age-16 factors

Competency/NCEA	Pattern found	R^2 (% of variance explained)
Cognitive composite	Dominant factor: cognitive composite age 14, followed by attitudinal composite 14; and then risky behaviour	78.0
Thinking & learning	Strongest factors: attitudinal & cognitive composites age 14; followed by parent perception of self-confidence; risky behaviour; attendance	50.0
Focused & responsible	Strongest factors: attitudinal composite age 14, risky behaviour; followed by cognitive composite age 14, attendance; family communicates well	58.0
Social skills	Strongest factor: attitudinal composite age 14; followed by cognitive composite age 14, risky behaviour, student values, praise & achievement, parent perception of self-efficacy, internal markers of progress at age 14	36.0
Social difficulties	Strongest factors: age 14 attitudinal & cognitive composites; followed by risky behaviour	30.0
Level 1 NCEA credits	Strongest factors: cognitive & attitudinal composites age 14; followed by attendance, family income age 14, involvement in bullying 8–14; then family communicates well, parent perception of responsibility, students working alone in English class, year level	56.0

We also undertook a multivariate model that ignored current (age-16) experiences but started with age-8 competency levels and added social characteristics with some of the key indicators (from the models that are reported in the next chapter on school engagement) of how a learning identity has formed before students tackled senior secondary school. These key indicators were: enjoyment of reading, age-14 motivation levels, and school decile-pattern from age 8 to age 14. The purpose of this model was to see just what changes are possible over schooling, and whether these might occur differently for students with different social characteristics: or, to put it another way, what weight does school experience have between age 8 and age 16, and, therefore, how important is it for students to keep engaging with school and learning after their first three years of school?

The importance of performance levels before students reach school, and of their gains in the first three years of school has become more and more evident with each phase of this study. Of those who were in the lowest

quartile of performance for each of the relevant competency measures at age 5, only 11 percent scored at the median or above at age 14 for mathematics, 29 percent for reading, and 42 percent for the attitudinal composite. The window of opportunity to make gains by age 14 is even narrower after age 8: 9 percent of those whose scores put them in the lowest quartile at age 8 improved their scores to reach the median or above in mathematics, 15 percent in reading, and 23 percent on the attitudinal composite.

However, the next table shows that although age-8 performance levels can account for a reasonable level of the variance in age-16 performance on NCEA, and even more of the variance in scores on the cognitive composite, they also leave much of this variance unaccounted for. A model that includes age-8 cognitive composite scores (the average of the age-8 numeracy, reading, writing, logical problem solving scores) can account for 65 percent of the variance in the age-16 cognitive composite scores, leaving 35 percent of the variance unaccounted for. Thus, what happens in between age 8 and age 16—at school, at home, and in activities and friendships—*does* matter.

The social characteristics that have a bearing on what happens in these years are maternal qualification (in relation to the cognitive composite score), and family income (in relation to Level 1 NCEA credits). Linked to family income through housing or the affordance of different levels of voluntary donations (state schools) or school fees (integrated and private schools) we see that decile history is relevant to both: an indication too of the role of peers in the development of learning identities. The other variables that remain also point to differences in ways that individual students have spent time, and in what has become important to them.

Table 20: Results of multivariate models to predict age-16 cognitive competency level and number of Level 1 NCEA credits from age–8 competency levels

Age-16 performance	Pattern found	R^2 (% of variance explained)
Cognitive composite	Dominant factor: age-8 cognitive composite; followed by maternal qualification, school decile 8–14, enjoyment of reading 8–14, age-14 motivation; then year level	65.0
Number of Level 1 NCEA credits	Strongest factor: age-8 cognitive composite; followed by school decile pattern 8–14, involvement in bullying 8–14, & family income at 14; then age-14 motivation levels, age-14 values; and then the attitudinal composite at age 8	41.0

Some implications in relation to policy

What are the main implications of the analyses we have summarised in this chapter? There are four main messages that we draw from our findings, in relation to the current policy environment, particularly the introduction of the NCEA as a major departure from the previous senior school qualification system, and the coming introduction of the New Zealand Curriculum.

1. In this chapter, we traversed a range of different perspectives on 16-year-olds' performance. These perspectives included multiple-choice assessments of numeracy and literacy, teachers' judgements of student approaches and behaviour based on what they had seen in their classes, parents' judgements of student approaches and behaviour based on what they had seen at home and on shared occasions, and achievement of NCEA credits, some internally assessed, and some assessed through examinations. We showed that, while there was considerable consistency between these different perspectives, they did not

always give the same picture. For example, while a high-scoring student on our study's measures for the cognitive and attitudinal competencies was also likely to get high numbers of NCEA credits, that was not always the case. Another example of how differences in judgement can differ: parents saw their children operate in different contexts than did their teachers, contexts that were likely to be more individualised, and more fluid than class settings, so their ratings of their children's attitudes were likely to be somewhat higher than teachers'—but not always. These differences in perspectives underline the importance of considering context when making judgements or decisions based on individual performance; they also underline the value of seeking additional information about individuals if we are concerned with lapses from previous performance or wanting to improve performance.

2. However, it was unusual to get a completely different picture of an individual 16-year-old from the different information we had on their performance. Our comparison of the results of our competency assessments with NCEA performance should reassure those who have wondered if the new qualification was too lenient, or softer than its predecessors: those who struggled with our more traditional assessments were also more likely than not to struggle to achieve sufficient numbers of NCEA credits to gain useful qualifications.
3. Our models indicate that student attitudes and behaviour are as important to school success in NCEA as cognitive levels, underlining the importance of integrating development of the key competencies with development of what we have thought of as "academic" knowledge and skills if we are to improve student qualification levels, and reduce achievement gaps.
4. As well as giving us insight into individual students' approaches to their learning, teacher assessments also gave us some useful information on the prevalence of the skills, knowledge, and dispositions emphasised in the new key competencies now included in the New Zealand Curriculum. Many of the dimensions represented by the key competencies are not widespread among this sample, even though the study sample has an over-representation of young people from homes with high levels of parental education and income, i.e., those who are more likely to have had opportunities to develop these dimensions. Chapters 7 and 8 in this report take a closer look at the key competency dimensions in terms of teaching practice and opportunities to learn. Both sources of information, on the opportunities for learning and the existing levels shown by students, indicate that the key competencies will need considerable support if we are to make the most of their inclusion in the New Zealand Curriculum.
5. We found that differences in both the number of NCEA credits attempted and gained reflected differences in subject clusters, with more on offer and gained in the "traditional" arts and science clusters than "vocational" clusters, or those we termed "contextual" subject clusters. Thus some of the differentiation occurring with the previous system of senior school qualifications has continued with the new system. This raises some questions about what more might be needed to improve opportunities to learn and to gain useful qualifications. Chapter 9 looks at these questions in more detail, and explores the question of one unintended consequence of the NCEA, a focus on credit accumulation.

Entrenched or open?

When we consider the patterns we see over time, we can also sketch some implications, of a broader nature.

By age 16, when the young people in this study were undertaking assessments for senior school qualifications as part of their ongoing courses as well as in end-of-year examinations, much of their learning identities was already shaped. So how they responded to these assessments, as well as to their classes, *did* carry much of what they had gained from their previous experiences: the attitudes they took to school and learning, previous success at school (both attitudes and success reflecting the kinds of opportunities they had had to learn). To succeed and make the most of secondary school years generally requires successful primary school years, and before that, rich early learning opportunities.

Most of the information we have at a national level about achievement gaps reports them in terms of social characteristics, particularly gender and ethnicity. Our analyses show other factors playing a larger part in accounting for differences in student performance. We look in Chapter 14 at differences related to social characteristics that might account for what we see in the national reports, and related to the factors that come through more strongly in this study, such as risky behaviour or other ways of spending time, developing habits and identities.

Some of the young people's responses also reflected the regrettable fact that they had started to establish themselves as young people who gained a sense of themselves through risky behaviour and having friends who also made meaning of their lives through such behaviour, at the expense of making the most of what school could offer. Our analyses certainly point to risky behaviour in early and mid-adolescence as a key indicator of low performance, both in senior school qualifications and on our measures of cognitive and attiudinal competencies. Some of those who seemed to identify themselves as this kind of risk taker (as opposed to taking risks in new learning) had built up this identity over years; others seemed to have been attracted to this identity more recently, in early adolescence.

But the 16-year-olds' performance was not just the sum of their previous experiences or their current ways of spending time out of school. We also found that current levels of engagement with school had some part in student success on senior school qualifications. In the next chapter, we focus on school engagement, and analyse the associations it has with different experiences, in and out of school, to see what we could be doing to improve engagement levels, and thus student success.

4. Engagement in school

We have seen that school attendance, NCEA achievement, and teachers' perceptions of student behaviour and attitudes at age 16 are linked to how well students feel they are engaged with school. In this chapter, we first describe student ratings of their levels of engagement in school and feeling affirmed in school. Then we describe parents' perspectives on their children's school experience, as well as their own feelings about their child's school. Finally in this chapter, we report findings from our analyses as to how student engagement is related to other aspects of the students' experiences, both in and out of school.

Levels of school engagement

Six percent of the young people had already left school, as soon as they legally could, indicating that remaining at school held little attraction for them. We look at what they were doing, and some differences in their experiences, past and current, in relation to those who remained at school, in the following chapter. These differences include lower levels of school engagement at age 14.

Close to a fifth of those still at school said they would like to leave as soon as they could, and 36 percent said they were usually or always bored.

We asked the 16-year-olds at school to give us their view on 26 items about school. Most of these items were also used at age 14, and some at age 12. It is interesting to compare the changes between age 12 and age 14, with those between age 14 and age 16.

Age-12 levels of engagement with school were higher than age-14 levels, when the study participants had moved to secondary level. At age 12, the participants reported less boredom, less restlessness, and less getting tired of trying. They were also less likely to get into trouble—but no more (or less) likely to think the school rules were fair; or to think they got all the help they needed.

With the exception of some increase in the proportion who felt restless at school, we did not see the same marked change in school engagement levels between ages 14 and 16. It is heartening that for many of these items, age - 14 and age -16 students' views were similar: students who stay in secondary school do not get progressively disengaged with school as they encounter qualification assessments and NCEA.

But nor do we see student levels of engagement improving as they continue with secondary school. The overall levels show that for a sizeable minority, secondary school is not as engaging as it could—and should—be. It is not that students do not feel safe, or that they do not belong: almost all the students indicated that they were usually comfortable in this respect, and they certainly understood that school was a place where they should try to do their best. It seems as if something is lost in the ways through which they were asked to do that.

Two factors were identified among the 26 items we asked the students to give us their view on, *engaged in school*, and *affirmed at school*.

Engaged in school

Around two-thirds to three-quarters of the age-16 students usually or always liked their teachers, enjoyed learning, and kept out of trouble. Although around a quarter felt restless (an increase since age 14), and a fifth got tired of trying, very few said they made a habit of skipping classes. Given teacher views of attendance levels described in Chapter 2, it seems more likely that students stay away from school for a day rather than pick and choose classes when they were there.

Table 21: Engagement in school (n = 421)

Engaged in school	Almost/ always %	Usually %	Occasionally %	Rarely/ never %
I keep out of trouble	33	48	17	2
I enjoy learning	20	50	25	4
I like my teachers	14	57	24	4
I get bored (r)	11	25	55	8
I want to leave school as soon as I can (r)	8	10	34	48
I feel restless (r)	5	20	52	23
I get tired of trying (r)	4	14	54	27
I skip classes (r)	1	3	24	72

Items shown as (r) are reverse scored when they are included in the factor, so that the scoring for all the items is consistent. For example, a rarely/never restless score would be assigned the top score with reverse scoring, to be consistent with the almost/always scores for the positively worded items such as "I enjoy learning".

Affirmed at school

Around 90 percent of the age-16 students usually or always felt safe at school, felt they belonged, and thought it important to do their best. Eighty percent thought they were usually or always treated as an individual. More than half also thought they were treated as an adult, as well as getting all the help they needed. They were more likely to see opportunities to take leadership roles than that their views on how to improve their classes or school were actively solicited.

Table 22: Affirmed at school (*n* = 421)

Affirmed at school	Almost/ always %	Usually %	Occasionally %	Rarely/ never %
It's important to do my best	52	36	10	< 1
I feel safe	50	40	7	1
I feel I belong	41	45	11	3
I am treated like an individual	32	48	14	4
I can take leadership roles if I want to	28	36	29	6
The discipline and rules are fair	16	50	26	7
I learn most things pretty quickly	16	48	31	3
I get all the help I need	15	54	27	3
Students have a say in how our school runs	10	33	40	16
I am treated like an adult	9	50	34	6
Teachers ask for our views about how to make the school and our class better	3	17	50	29

Other aspects of engagement

Some of the items we asked about did not fit into either of the *engaged at school* or the *affirmed at school* factors. These are given in the table below. Few age-16 students found school a constant site of loneliness, sadness, or rejection of their key beliefs. Most had good friends at school. And while more than half thought that they could improve the quality of their work if they made more effort, they did not feel that the amount of work they had to do was to blame.

Table 23: Student views of other aspects of school engagement (*n* = 421)

Other aspects	Almost/ always %	Usually %	Occasionally %	Rarely/ never %
I have good friends	76	18	4	1
I could do better work if I tried	21	36	36	5
I get too much work to do	5	21	62	11
I feel sad	2	3	28	67
I feel lonely	2	3	22	72
I get teased about the things I believe	< 1	5	16	77

Parent perspectives

Parent reports show that levels of enjoyment of school continued to slide down over time. It is interesting that the drop of 10 percent between ages 14 and 16 is the same as the drop between ages 12 and 14, indicating that the framework of end-of-school qualifications (NCEA) lessens enjoyment no more (or less) than experiences as 12-year-olds cross into the adolescent world and experience more lively possibilities outside school, and outside their families. As far as parents could tell, just over half the 16-year-olds at school generally enjoyed being there.

Table 24: Parent reports of their child's feelings about school, ages 12–16

Feelings	Parents, child age 12 (*n* = 496) %	Parents, child age 14 (*n* = 476) %	Parents, child age 16 (*n* = 412) %
Enjoyment	75	65	55
Mixed feelings (up and down)	6	10	16
Unhappy	4	6	11
Matter of fact/accepts as part of daily routine	11	16	10
Bored	1	2	4
Took a while to settle, ok now	3	2	3

Consistent with differences in patterns evident in student views of their most enjoyed and least enjoyed subjects (see Chapter 7), parents reported that while many students liked most (55 percent) or all (11 percent) of their teachers, 30 percent liked only some of them, and two students, none. Parent views of the support their child had from their current teachers were as positive as they had been two years earlier: 51 percent rated the support these teachers gave for their child's learning as 4 or 5 on a 5-point scale, and 31 percent did so for teachers' support for their child's emotional wellbeing. Ten percent thought their child had no or very little support for their learning, and 19 percent, for their emotional wellbeing.

Fifty-nine percent of the parents were satisfied with their child's progress at school, much the same as for the students at Year 10 when they were aged 14, and somewhat lower than the 69 percent at Year 9 or at age 12, when they were in Years 7 or 8. Twenty-two percent expressed mixed views, and 19 percent were not at all satisfied. As in earlier phases of this project, the main reasons for mixed views or dissatisfaction were that the student was not making good progress (27 percent), was bored or repeating work (10 percent), the quality of teachers (4 percent), and the student lacking confidence or being unhappy at school (4 percent).

Most parents felt welcome in their child's secondary school (84 percent). Five percent did not, and 2 percent had never been to this school. Seventy-one percent had taken part in teacher–parent interviews; 30 percent said they had very little contact with the school. Just over half (52 percent) had worked with someone at the school to sort out a problem: 22 percent of these were related to student progress (or lack of it), 13 percent to social problems, including bullying, 7 percent because the student had broken a school rule, 6 percent because a teacher had been unfair to the student, 5 percent were related to the student's health, and a few mentioned homework completion, timetable clashes, or substance abuse. Two-thirds of the problems that had brought parents and school together were resolved; most of the rest were in the process of being resolved, or were monitored. However, the problem remained unresolved for 13 percent.

What influences school engagement at age 16?

In this section, we describe correlations between school engagement scores and other variables that are in scale form (e.g., scales relating to classroom experiences, teacher views of student approaches, home relations, friendships, and out-of-school experiences), and the level of variance in school engagement scores accounted for in relation to categorical variables (e.g., values, motivation levels at age 14).

Engaged in school and affirmed at school—associations with other variables

Table 25 gives the correlations for our measures of *engaged in school* and *affirmed at school*. Our measure of engaged in school shows much stronger correlations with NCEA achievement than does the measure of feeling affirmed at school (a feeling one belongs).

Other patterns of particular interest in the table are:

- Levels of engagement in school, and feeling affirmed at school have moderate to strong correlations with each other, yet they remain distinct. While it is likely that a student who feels comfortable and safe will also feel engaged in (the work of) school, it does not always follow—and vice versa. Thus we need to pay attention to both dimensions. Both factors have similar levels of association with student reports of positive classroom learning activities and relations with their teachers; their being absorbed in learning and their attitude to work, with reasonably similar levels between student and teacher views. This pattern suggests that both school engagement and feeling affirmed at school are related to what students experience in their classes, and that they also provide an indication of student openness to their learning opportunities, and willingness to make an effort.

- There is a reasonable degree of continuity between age-14 and age-16 levels of these two variables, indicating the value of ensuring that levels of these are high in the first years of students' secondary school experience.
- Risky behaviour, risky friends, and to a lesser extent, experiences of adverse events are more strongly associated—negatively—with school engagement than with feeling affirmed at school. This may be because school offers opportunities for social reinforcement for negative as well as positive behaviours (as well as its primary purpose, learning).
- Risky behaviour and friends carry more weight than the quality of family relations in relation to school engagement. Family relationships carry more weight when it comes to levels of feeling affirmed at school, suggesting that students who have positive experiences in one setting have them in another—and that may be because they have become accustomed to expecting support or inclusion, and are open to making the most of opportunities for it.

Table 25: Correlations between the age-16 school engagement and affirmation factors and other age-16 factors

Measure	Engaged in school at 16	Affirmed at school at 16
Affirmed at school at 16	0.58	
Number of Level 1 NCEA credits	0.57	0.36
Focused & responsible	0.55	0.42
NCEA approach	0.50	0.43
Thinking & learning	0.46	0.40
Engaged at school 14	0.45	0.33
Positive about teachers[23]	0.44	0.48
Positive about classes	0.43	0.51
Absorbed in learning	0.43	0.46
Attitude to work	0.43	0.42
Attitudinal composite 14	0.43	0.37
Social skills	0.42	0.38
Internal markers of success	0.38	0.45
Cognitive composite age 16	0.32	0.22
Cognitive composite 14	0.30	0.24
Family communicates well	0.27	0.34
Parent view of responsibility	0.27	0.22
Affirmed at school 14	0.27	0.42
Inclusive family	0.25	0.33
Supportive family	0.21	0.31
Extending friendships	–	0.35
Praise and achievement	–	0.27
Family pressure	-0.28	-0.18
Adverse events	-0.28	–
Social difficulties	-0.35	-0.26
Friends with risky behaviour	-0.41	-0.27
Risky behaviour	-0.53	-0.24
Disengaged in learning	-0.55	-0.35

Correlations stronger than ± 0.4 are shown in **bold** face and those between -0.2 and 0.2 by –.

[23] "Positive about teachers" and "positive about classes" were so highly correlated (see Chapter 7) that in later analyses, we used all the items to make one factor, "positive learning environment".

Engagement in school and categorical variables

The same variables that showed continuing relationships with Level 1 NCEA credit totals and the cognitive composite at age 16 also show up, not surprisingly, in the table below that summarises the associations of our categorical variables to engagement in school at age 16. It underlines how the work of school is less attractive for 16-year-olds who have not been able to find purpose in the written word, or in interests that challenge them previously. Often this includes those who have had fewer opportunities at an early age that encourage language and symbol use. However, the associations are not as strong—the proportions of variance accounted for in different levels of engagement in school are much lower than they were for the two achievement measures. This indicates that current experiences of classes and school also contribute to levels of engagement in school at age 16.

Table 26: School engagement and categorical variables

Other variable	Pattern found	R^2 (% of variance explained)
Number of Level 1 NCEA credits	The higher the number of credits gained, the higher the school engagement	15.2
Subject cluster	Highest school engagement associated with being in "traditional arts" cluster; lowest in "vocational" & "contextual" clusters	12.8
Enjoyment of reading ages 8–14	The higher the enjoyment of reading, the higher the engagement in school	8.6
Motivation at age 14	The higher the motivation level at age 14, the higher the level of school engagement at 16	7.0
Maternal qualification	Highest school engagement levels for students with a university qualified mother; lowest for those whose mother had no qualification or a trades qualification	6.3
Attendance at school	No difference between good, very good, or excellent attendance, or those with poor attendance because of participation in sports/arts; lower scores for those with fair attendance, and lower still for those with poor attendance or attendance problems because of ill health	4.6
Family income at age 14	Higher school engagement for those with high or very high family incomes	3.8
Student values at 16	Students with "standing out" values had lower scores for school engagement	3.6
Involvement in bullying ages 8–14	Lower school engagement at 16 for those involved in bullying at two or more of the study phases	3.6
Ethnicity	Higher school engagement for Päkehä/Asian students	3.2
School decile 8–14	The higher the decile attended across the years of school, the higher the level of school engagement	3.0
TV watching ages 8–14	The less time spent watching TV, the higher the level of school engagement at 16	3.0
Student interests age 14	Lower scores for those in the electronic games/no interests cluster*	2.1

* Association is at the indicative level ($01 < p < 0.05$).

Affirmed at school and previous experiences and family resources

The *affirmed at school* factor covers student views of belonging, having a voice, mattering as an individual, and being treated fairly. While the pattern of variables that have a bearing on levels of affirmation is similar to the pattern for the *engaged in school* factor, which focused more on the "work" of school, there are some interesting differences. School attendance carries more weight (indicating that students who do not feel they belong or are treated fairly are less likely to attend school, which has, as we have seen, associations with their achievement). There are more traces of previous experiences colouring age-16 responses, particularly in relation to involvement in bullying, previous motivation levels, and parental reports of their enthusiasm about school from age 8 to age 14. Subject clusters carry less weight than for engagement in school, but they still carry some, indicating that subject hierarchies also have associations with student feelings of belonging to the school. Ethnicity was unrelated to differences in feeling affirmed at school for this sample, though it was related to differences in *engaged in school* levels, which may indicate that in addressing ethnic gaps in achievement, the teacher–student relationships and ways learning is framed may be more important to focus on than global feelings of belonging or safety.

Table 27: Affirmed at school and categorical variables

Other variable	Pattern found	R^2 (% of variance explained)
Number of Level 1 NCEA credits	The higher the number of credits gained, the higher the school affirmation level	11.2
Motivation at age 14	Lower levels of school affirmation at age 16 for those with low motivation levels at age 14	11.2
Enjoyment of reading ages 8–14	Higher school affirmation levels for those who always enjoyed reading	7.5
Attendance at school	No difference between good, very good, or excellent attendance, or those with poor attendance because of participation in sports/arts; lower school affirmation levels for those with fair or poor attendance and lowest for those with attendance problems because of ill health	7.5
Subject cluster	Highest school affirmation associated with being in "traditional arts" cluster; lowest in "vocational" & "contextual" clusters	6.9
Involvement in bullying ages 8–14	The more involvement in bullying, the lower the school affirmation level	5.6
Student values at 16	Students with "standing out" values had lower levels of school affirmation	4.8
Enthusiasm about school 8–14	School affirmation levels increase with degree of enthusiasm shown towards school	4.0
Maternal qualification	Highest school affirmation levels for students with a university qualified mother; lowest for those whose mother had no qualification or a trades qualification	3.6
Family income at age 14	School affirmation increases as family income increases*	2.7
Age-5 family income	Lowest levels of affirmed at school for those from low-income families*	2.4
TV watching ages 8–14	The less time spent watching TV, the higher the level of school affirmation at 16	2.2
Student interests age 14	Lower scores for those in the electronic games/no interests cluster*	2.1
Parent interests at 14	Highest levels of school affirmation levels for students whose parents read widely, had interests that involved	1.9
Family financial situation	Lower school affirmation for students from families in difficult financial situation*	1.8
Gender	Females had higher levels of being affirmed at school*	1.2

* Association is at the indicative level ($01 < p < 0.05$).

Further insights from multivariate models

The multivariate models summarised below included demographic variables, and age-14 competency scores, yet these did not show significant relationships with school engagement at 16. When we have data that allow us to get insight into young people's own attitudes and practices—the things that accumulate into different learning identities—we can gain some understanding of what it is about, say, ethnicity, that underlies differences in school engagement.[24]

The factors that remained in the multivariate models are those related to student attitudes, and their previous levels of engagement or affirmation: the degree to which their learning identity is focused on school, the degree to which they have developed some intrinsic motivation, and their view of the learning opportunities in their current classes. Those current learning opportunities also play a role in levels of feeling affirmed at school; as do aspects of learning identity—but also experiences of support and recognition with family and friends, and safe challenge within friendships.

Table 28: Results of multivariate models to predict age-16 school engagement and affirmation levels

Factor	Pattern found	R^2 (% of variance explained)
Engaged in school	Strongest factors: risky behaviour, disengaged in learning;[25] followed by *focused and responsible* (teacher view), age-14 school engagement level, attitude to work;[26] then internal markers of progress, positive about classes.	57
Affirmed at school	Strongest factors: age-14 affirmed at school level, positive about classes, internal markers of progress, *focused & responsible;* followed by attitude to work, extending friendships; then by supportive family, praise & achievement.[27]	48

Some implications

Our findings that there are links between student feelings of being engaged in school, their attendance, their NCEA credit totals, and their competency levels are not surprising. If we think of these links, the Ministry of Education's current push to increase student attendance by reducing truancy, and the Government's proposal to raise the school leaving age to 17 at the same time as we think of the significant minority—even in this comparatively advantaged sample—who showed low levels of engagement in school, and to a lesser extent, feeling affirmed in school, we see a sizeable challenge. It will not be enough to have students at school if they are not also engaged in the work of school.

Our models show that experiences beyond school play their part—but they are not the whole story. Positive learning environments also show links, as does having developed an intrinsic motivation. Thus one of the levers

[24] Differences related to social characteristics that we found in relation to school participation, achievement, engagement, and our other variables, are described in Chapter 14.

[25] This factor is discussed with other factors drawn from students' views of their classes in Chapter 8. It includes items such as "I muck around" but also items related to the class, such as "We keep doing the same things without learning anything new".

[26] This factor is also discussed in Chapter 8. It includes items such as "I'm confident I can master the skills being taught", "The NCEA credits are easy to get", and "I don't know how to do the work" (reverse scored to make the factor).

[27] These factors are described in Chapters 11 and 12.

for increasing student engagement with learning is to support teachers to provide positive learning environments. We return to this in Chapters 7 and 8.

Before doing so, we focus in the next chapter on those who had already left school to see what we can learn from them about the kinds of experiences that make school an undesirable pathway, the things that can turn a young person away from either developing a positive learning identity, or a learning identity that does not see school as providing positive experiences, or the kinds of particular learning experiences that are sought. Again, we see both factors in and out of school playing a part, and therefore suggesting some ways in which educators can act and be supported to better engage students.

5. The school leavers

We have data from 27 school leavers, and 28 parents of school leavers (one parent agreed to an interview, but their child did not). Fifty-four percent of the school leavers were male, and 46 percent, female: the same proportions for male and female as among the school stayers. Forty-four percent of the school leavers came from sole-parent families, cf. 14 percent of the school stayers (the proportions of those from blended families was similar for both groups). A third of the school leavers identified themselves as Mäori (including some who also identified as NZ European), cf. 12 percent of the school stayers. Four-fifths were still living at home with their parent(s).

The young people were: in employment (44 percent), studying (41 percent), looking for work (22 percent), looking after their own child (4 percent), or doing nothing (7 percent).

Parent and young persons' views of the reasons for leaving school at age 16 are given below. The reasons are more "push" (from school) than "pull" (toward a definite alternative). Note also that parents may not always know that their child had got into trouble at school.

Table 29: Reasons for leaving school at age 16

Reason	Young person (*n* = 27) %	Parent (*n* = 28) %
To take up a specific job/apprenticeship	15	11
To do a specific education/training course	11	14
Did not get qualification desired	4	0
Was bored/not learning anything/no challenge	48	46
Could not study what wanted to at school	7	11
Didn't like teachers	33	43
Got into trouble at school	30	14
Moved to another town	4	7
Other	36	19

Other reasons given by ex-students included moving schools (11 percent), personal reasons, and being unhappy at school. Parents mentioned that their child had found schoolwork too hard (11 percent), or had been depressed (14 percent); friends, contesting parental authority, and wagging school were also mentioned.

Three-quarters of the young people were happy with what they were doing; 19 percent were sometimes happy, and 4 percent were unhappy. What they liked best about what they were doing was having freedom, earning money, learning, taking on more responsibility, but not having homework or school. What they didn't like was in some ways the reverse: they missed learning, got bored or lonely, worried about money and friendships, or didn't like some aspects of their work. When we asked them if they agreed with a series of statements about the best things for them about leaving school, the item they most strongly agreed with (48 percent) was "not having teachers hassle me". Other aspects that they strongly agreed with were earning money, having more freedom to

choose what to do, making their own decisions about life, getting a job or studying what they wanted, learning things that seemed relevant and real life. Thirty-seven percent wished they were doing something different from what they were currently doing, not wanting to be unemployed, wanting a different job—but only one wished they had stayed at school to gain qualifications in that environment. Most of the young people were optimistic that they could change what they no longer liked.

However, when we asked them what might stop them having the kind of life they wanted, two-thirds mentioned not having qualifications, or lack of relevant work experience; 59 percent also mentioned not having the necessary skills.

Sixty-four percent of the school leavers' parents thought they were enjoying what they were doing. A quarter thought they had mixed feelings, and 4 percent that they were missing school. A third thought their child wished they were doing something different from what they were now doing, and 18 percent did not know whether that was so. Thirty-nine percent rated their child's ability to cope with life after school as a 4 or 5 on a 5-point scale. Two-thirds of the parents also wished their child was doing something different from what they were doing: half of these wished their child had stayed at school. In general, parents' ratings of their child's levels of responsibility, self-efficacy, and to a lesser extent, self-confidence, were lower for the school leavers than for the school stayers.

Already disengaged: are school leavers' experiences and values different from those who stay at school after age 16?

Two years earlier, when they were 14, those who had left school by age 16 had lower average levels of school engagement and motivation: 67 percent had low motivation levels cf. 30 percent of the school stayers. These differences probably stem from consistently lower scores on our mathematics and literacy measures, starting at age 5, before they reached school (see Hodgen, 2007 for the details). The difference in average scores for literacy also widened after age 8. Scores on the attitudinal measures (other than, interestingly, social skills with adults) did not start to be lower than those who stayed at school at age 16 until age 6: after the first year of school, and, probably, struggles with the core school work of literacy and mathematics started to dent confidence in the school environment. The difference in attitudinal scores remained much the same for the school stayers and leavers up to age 10: but it then grew much larger at ages 12 and 14. This change starting before they started secondary school may be because of the cumulative difficulties of school work, greater awareness of how they were doing compared with others, and also as they started to be able to do more with friends, to experience other worlds where school work could matter less.

At age 16, money and wearing the right clothes or looking cool mattered more to those who had already left school than those who remained. Not surprisingly, they were less concerned with doing well at school. But they were also less concerned about sport (an indication perhaps that even though secondary school offers more ready opportunities to take part in sport, this does not offer enough of an incentive to some students to remain). The other differences apparent in 0 below are not statistically significant, during to the small number of school leavers in this sample.

Table 30: Values for school leavers and school stayers

Most important things	Left school (*n* = 27) %	Still at school (*n* = 421) %
Enjoying the things I do	52	55
Doing well at school	33	56
Being with family/ whänau /fono	44	32
Money to spend	74	29
Having lots of friends	26	26
Being helpful or kind	15	23
Doing well at sport	7	22
Good sense of humour	15	22
Doing well at an interest outside school	0	10
Wearing the right clothes/looking cool	22	9
Going to church	0	6
Good looking	7	5
Having the latest things	4	2

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. There are fewer differences between school leavers and stayers when it comes to thinking of the future. The school leavers did think that having lots of money would be important to them (56 percent cf. 25 percent of school stayers), and were less interested in a good education (11 percent cf. 30 percent).

Just under half the school leavers wished they had had more guidance on the subjects or options they took at secondary school, and a further 15 percent were unsure: a total of 59 percent cf. 27 percent of school stayers. A third said that better guidance would have led them to take subjects that let them do something different now, or kept pathways open; a fifth did not like what they chose, 15 percent had not liked their teachers, and 7 percent were sceptical about the value of more guidance, since there had not been enough subject choice at their school.

What would they like to have been different about school? They would like:

- More choice of subjects (37 percent)
- To have behaved differently, have a different attitude (37 percent)
- To have better teachers (26 percent)
- Changes in a particular subject (22 percent)
- More freedom (19 percent).

But 15 percent said nothing would make school better for them: they thought it was a waste of time.

Interests

School-leavers were more likely than those still at school to report friendships as one of their main interests (82 percent cf. 51 percent), cars/machinery (22 percent cf. 9 percent), and alcohol (19 percent cf. 2 percent). They were less likely to report organised sport (15 percent cf. 55 percent), computer activities or digital games (11 percent cf. 31 percent), or performing arts (4 percent cf. 25 percent) as among their main interests.

On average, they spent similar amounts of time watching television a day (both groups had a median time of two hours a day), and the TV programmes they enjoyed were similar.

They were more likely to come from homes with less than 100 books (52 percent cf. 20 percent of school stayers), less likely to use a public library (22 percent cf. 60 percent), or to enjoy reading (22 percent cf. 52 percent of school stayers). School-stayers were more likely to use the library to get books for their own interest (41 percent cf. 15 percent of school leavers)—but also used it to get books for schoolwork (46 percent) or to study (27 percent). Sixty-three percent of the school leavers did not enjoy writing, cf. 43 percent of the school stayers.

Most still lived at home, and were just as likely as the school stayers to have rules about their use of time, phones, ICT, driving, dress, language, and where they met their friends. They were somewhat more likely to have more latitude around the time they should be home, when they went to bed, and their use of alcohol. If they broke their parental rules, they were less likely than the school stayers to face consequences other than being told off.

They did much the same things with their friends with four notable differences: they were much less likely to go out to entertainment (19 percent cf. 60 percent of school stayers), or participate in organised sport (4 percent cf. 26 percent); and much more likely to go out with no fixed agenda (57 percent cf. 28 percent), and drink alcohol (37 percent cf. 5 percent). They were more likely to value friendships because they were longlasting (30 percent cf. 13 percent); and to mention as a drawback that there could be competition with their friends (15 percent cf. 5 percent). They were less likely to refrain from doing something their friends wanted them to do, but their parents did not (22 percent cf. 45 percent).

Seventy-one percent still saw their friends from school; and these friendships were just as likely to be as solid or extending as the school stayers': where they differed was that their friends were more likely to be getting into trouble, and involved in activities with some risk: alcohol and drug use, smoking cigarettes, unsafe sex; and they were somewhat less likely to trust their friends.

They were more likely to fall in love, have sex, break up with a romantic partner than the school stayers, experience family breakup, change where they were living, experience health problems, drink alcohol, get hassled or bullied, get into physical fights, get into trouble, including with the police, lose control of their temper, and be hassled about their sexuality. The latter may indicate a higher proportion of gay and lesbian young people who left school early. If so, it would be consistent with reports about negative school experiences for this group. It is of concern that they continued to feel hassled about their sexuality beyond school, particularly if that was a reason for leaving school early.

Parents of school leavers were less likely to think they were generally happy (39 percent cf. 86 percent of school stayers' parents), and more likely to think they were unsettled by something (61 percent cf. 44 percent of school stayers' parents) They showed more concerns: 32 percent were concerned about five or more of the 14 areas we asked about, cf. 4 percent of the school stayers. Only 29 percent had no concerns at all, cf. 59 percent of the parents of school stayers. Their level of concern was higher for every area we asked about, other than school behaviour. Just under half thought their child had left school before they were ready to do so; and a third were worried about their child's life choices or choice of work/study. Some aspects where parents of school leavers were three or four times more likely to note a particular concern were around their child having unsuitable

friends, or loneliness, a lack of interests, or unsuitable interests, getting into trouble, having relationships that included sex, being reckless, and using illegal substances. They were twice as likely to contest parental authority. Yet parental concern about their child being disengaged in interests or giving up was much the same for the school stayers and school leavers.

The school leavers' views of their relationships with their parents were generally similar to the views of those who were still at school, but they were less likely to trust their father (almost half were in sole-parent families) or feel their father would know if they were upset, and somewhat more likely to think that their family checked that they were doing what they needed to do.

If they had younger siblings, they were less likely to teach them about something, or take them out; but they were more likely than school stayers to do things with their siblings, share interests, and play games together.

They were more likely than the school stayers to mention employment, taking care of themselves, or a skills-related achievement as things they were proud they had done over the past year, and less likely than the school stayers to mention academic, sports, or arts achievements.

Thus, on the whole, we see a different kind of learning identity among the school leavers. Some young people felt a positive pull from learning opportunities that they could not have at school, raising questions about whether schools should and could offer more, or whether we should think more broadly about how we could support young adult students in a range of different educational settings.

Others had started to disengage from school some years before, seeking to jump-start adulthood, often because school, which is where we locate children and young people, was not for them a site of success or affirmation.

One of the themes of the next set of chapters is how schools structure the range of courses that students can take, and how different approaches to classes can provide students with different learning opportunities, some more engaging than others, and some seemingly more conducive to the development of positive learning identities. The contents of these chapters may shed more light on how we can lessen the number of students who leave because of "push" factors.

6. School practices and student choices

A specific intention of the NCEA was to open up multiple pathways through the senior secondary school, providing more flexibility in the subject combinations available to students with different learning needs and different beyond-school pathways in mind. This has been contentious for a number of reasons (see, for example, Dobric, 2006) and it is important that we gain a clearer picture of students' actual experiences within the context of the school's overall organisation and ethos. In this chapter we look at whether greater flexibility of subject combinations is indeed being realised for the students in our Competent Learners sample.

School structures and learning pathways

When the Competent Learners students were interviewed at age 14, their subject choices were constrained by the proportion of the lower secondary curriculum that was compulsory (Wylie & Hipkins, 2006), and no clear patterns of preferences emerged from the analysis of their optional choices. Is this situation different at age 16?

As the next table shows, most students in Year 11 are still required to study English and mathematics. In many schools, science and some combination of PE/health also remain compulsory. The overall number of Year 11 subjects that were compulsory in any one school ranged from two to six, with three the modal (most common) number (in 41 percent of these schools). Accordingly, for the 16-year-olds in Year 11, other subject choices remained somewhat constrained. However, as we describe, there were some distinct clusters evident for Year 11 students as well as those in Year 12.

Table 31: Compulsory subjects in Year 11

Subject	Percentage of schools where subject compulsory in Year 11 (n = 44)
English	98
Mathematics	98
Science	68
PE	32
Health and PE	18
Other (e.g., religious education)	27

NCEA and choice flexibility

An early finding from the Learning Curves study was that flexibility to meet different learning needs had indeed been created post-NCEA implementation by the provision of different *types* of English, mathematics, and science within the overall year level. Such *within-subject* options have existed to some degree for many years, but NCEA has provided the means of gaining qualification credits for learning which is more supported and often more practical than that offered to most students, because teachers can now select different combinations of unit and achievement standards with which to assess learning progress. Previously, any assessment in such courses was "alternative" to the mainstream secondary school qualification, School Certificate, and hence would be widely

seen as of less value. A caveat to this good news of increased flexibility is that for most Learning Curves students the course of study actually differed very little from the previous "traditional discipline" versions of English and mathematics offered in preparation for assessment via School Certificate examinations (Hipkins, Vaughan, Beals, & Ferral, 2004). Other types of course have remained "alternative" and are regarded with suspicion by some critics of NCEA, notwithstanding the policy intention to credential many types of learning experiences and pathways. The Learning Curves researchers reported that this new flexibility, in the absence of wider conversations about purposes for learning, had consolidated rather than broken down perceptions of an academic/vocational value difference in learning (Hipkins et al., 2005).

Nevertheless, some students do now have other types of learning pathways available. Just two of the 44 schools attended by Year 11 Competent Learner students said they did not offer different versions of their compulsory subjects, as did seven of the 61 schools attended by the Year 12 students in the study. As the next table shows, offering different versions is now widespread at both Year 11 and Year 12, especially for core curriculum subjects. In Year 12, different versions of technology subjects are likely to account for the increase in the "other" category, with many schools offering some more academically-oriented versions assessed with achievement standards as well as some more practical versions assessed with unit standards. Thus, differences between versions are evident in the choice of assessment standard, and retain some of the past differentiation patterns.

Table 32: Years 11and 12 subjects for which several different versions are available

Subject	% of schools offering more than one version	
	Year 11 (*n* = 44)	Year 12 (*n* = 61)
English	83	92
Mathematics	90	94
Science*	71	60*
PE/health	32	50
Other (e.g., religious education)	10	30

* Science options here are in addition to the traditionally offered options of biology, chemistry, and physics.

When the Competent Learner students were 14 we reported that some schools accommodated an over-full timetable by offering part-year courses. This was more common for Year 9, with "taster"courses, when 29 percent of schools offered half-year courses. Just 10 percent of the schools offered part-year courses at Year 10, and 14 percent when these students reached Year 11 or Year 12.

Another means by which schools can increase flexibility in students' choices is to create a timetable structure which is less strictly demarcated by year levels. During the three years of NCEA implementation (2002–2004) several Learning Curves schools had already begun to create a multilevel timetable where students could be studying at different levels in different subjects. In 2005, 97 percent of schools attended by Year 12 Competent Learners said these students could share classes with students at other year levels, suggesting that this practice is now very widespread. In 84 percent of schools with Year 11 students, teachers said the students could potentially share classes with Year 12 students, suggesting that multilevelling can take students back a year level. This provides a means of meeting learning needs if students have yet to achieve at the level below their peers in a specific subject. The next table confirms this pattern, but also shows that schools can have other reasons for

providing this timetable flexibility, including extending students if they are achieving at a more advanced level than their peers: and as we saw in Chapter 3, a sizeable minority of students are achieving credits at more than one NCEA level over the same calendar year.

Table 33: Reasons for providing multilevel classes

Reason	% of schools giving this reason (*n* = 105)
Year 12 students need Level 1 NCEA credits before moving on	66
Student needs for a bridging class/additional learning support	52
Student need for acceleration to higher level	48
Small numbers of students so classes combined	33
Other	20

Most responses in the "other" category were associated with the accommodation of Year 12 students who needed to repeat Level 1 courses, in particular, mathematics or English, thus ensuring literacy and numeracy credit targets could be reached. One person mentioned Year 12 students who were picking up a subject at Level 1 for the first time and one school said lack of staff had necessitated the multilevel arrangement.

Combining classes where there are lower student numbers draws attention to the challenge of providing a full range of courses in smaller schools. However, a majority of schools (74 percent) in this predominantly urban sample said that the range of subjects available did not constrain their ability to meet students' learning needs, or did so "very little". Twenty-two percent of schools saw this as a constraint "to some extent" and just 2 percent said it impacted on them "a lot".

Determining eligibility for a higher level class

The most commonly reported reason for multilevelling draws attention to the question of criteria for advancement, and school practices that might restrict students from entering a course at a higher level. It is important to explore this issue, because individual students may find pathways closed to them if they fail to make the progress seen as necessary or if they do not make good choices. To what extent are schools using NCEA data as they make these determinations and what else do they consider?

The table shows that Year 11 NCEA results are indeed very influential when determining Year 12 courses. This may be a key factor in schools' widespread reluctance to ameliorate assessment pressures by not offering Level 1 NCEA to students who will still be at school in Years 12 and 13 (Hipkins, 2007). Previous behaviour or attitude also counted, more so for Year 11 than for Year 12.

Table 34: Criteria for eligibility to enter a course at the next level

Criterion	% of schools that use this (*n* = 105)	
	Year 11 entry	Year 12 entry
Previous year's results in the subject	93	98
Previous year's behaviour/attitude	88	65
Other achievement data (e.g. standardised tests)	20	9
Other	12	19

Responses in the other category were related to consultation with parents and responses to their requests, consideration of requirements for a career of interest to the student, and the ability to cope with the English language requirements of a subject.

Impact of the timetable structure and school guidance practices on subject combinations

Three-quarters of the schools said information on students' motivation and attitudes was provided by year level deans as well as by subject teachers. The Learning Curves research reported that deans tend to have conservative views about which types of subjects are accessible and relevant to certain types of learners (Hipkins et al., 2004). This created frustrations for teachers in some subject areas, particularly in the arts and technology learning areas, when students with no interest in a subject course were nevertheless allocated to a class on the grounds that it was the only suitable option for them on that line of the timetable. The converse also occurred—students seen as more able were likely to be discouraged from taking those same subject courses on the grounds that they would be more appropriately seen as extracurricular interests for them. The faculty leaders of these subjects saw this as an out-of-date view of what the subject could offer a learner in the twenty-first century, which simply added to their frustration.

The next table confirms this picture of the importance of school deans in subject choice. It also shows that students were more likely to get advice on their subject choice from the school dean than from their form teacher in form time, or from a careers evening or expo.[28]

Table 35: Nature of advice available when making subject choices

Source of advice	% schools that provided this	
	Year 11 (*n* = 44)	Year 12 (*n* = 61)
Course information booklet	93	100
Parent evening	80	70
Individual appointment with dean	57	72
Form teacher advice given during form time	43	57
Careers evening or expo	36	53
Short careers course	25	31

[28] None of the year level differences in frequency of provision of advice are statistically significant.

Schools go to considerable lengths to group subjects on timetable lines in such a way that they accommodate as many combinations as are likely to be requested. But obviously unlimited permutations are simply not possible, and in the end, more able students tend to have a range of choices in any one timetable line, while students who need alternatives to these subjects are likely to have fewer choices (see Hipkins & Vaughan, 2002 for a more detailed discussion of this). The next table provides indications that this dilemma is widespread. It reports on aspects of curriculum and achievement that the school managers in the Competent Learners study saw as their strengths. Note the difference in numbers between those who believed they were strong in offering academic choices and those who saw vocational choices as a specific strength of their school.

Table 36: Schools' self-reported strengths in curriculum and achievement

Aspect of curriculum/achievement	% of schools identifying this as a strength (*n* = 61)
Offering academic subjects	77
Offering a broad range of subject choices	62
Raising achievement	56
High number of students passing qualifications	55
Offering vocational subjects	49
NCEA leadership	40
Curriculum innovation	28
ICT/videoconferencing initiatives	25

Together, advice and timetable practices in the Learning Curves schools appeared to lead to a clustering of students' subject combinations in clearly distinguishable patterns.[29] A particularly concerning finding was that Mäori and Pacific students in the six *Learning Curves* schools were more likely to be taking subject combinations that could close down their pathway options later. Such combinations in Year 11 were likely to include alternative versions of English, mathematics, and science with "practical" versions of technology and IT, vocational subjects, PE, and so on, (Hipkins et al., 2005). For some students, these types of combinations could lead to experiences of learning success where otherwise they might have experienced only failure, but the pattern we found also provoked questions about whether some students were constrained in their later choices and chances by limiting expectations at this critical stage of their learning careers.

Competent Learners' subject choice combinations

The Competent Learners study gave us an opportunity to investigate the issue of individual subject combinations with the advantage of having a more comprehensive knowledge of each individual participant. It also provided the opportunity to gauge both students' and parents' thoughts about subject choices and learning success more generally. The views of both these groups are reported in Chapters 8 and 10.

[29] Parent and student expectations of suitable learning will also contribute, and it was not possible to disentangle these effects in the Learning Curves study.

To begin, we report the results of a cluster analysis similar to that first used in the Learning Curves research.[30] This analysis yielded four broad subject clusters at both Years 11 and 12, as shown in the next two tables. As in any cluster analysis, membership of a particular cluster signals the *likelihood* that students will be taking similar subject combinations, but considerable within- cluster variability is also to be expected.

Table 37: Subject clusters found for Year 11 students

Name given to cluster	Subjects likely to be combined in a cluster	
	50% or more of cluster take subject	Other subjects associated with cluster
Traditional arts	History Traditional mathematics Traditional English	Geography Separate sciences Graphics and/or visual arts Languages Accounting and/or economics Design and/or fabric technology Health
Traditional science	Traditional mathematics Traditional English Science (single subject) PE	Economics Graphics and/or visual arts
Contextual	Alternative version of mathematics Alternative version of English PE Dance/drama	A food-related course (e.g. home economics) Outdoor sport Various technology subjects Mäori/Samoan Humanities subject Text and information management Life skills subjects Hospitality/tourism
Vocational	Alternative version of mathematics PE	A food-related course Outdoor sport A science subject Visual art Various technology subjects Computers Life skills subjects Alternative version of English

The two "traditional" clusters include subjects that are likely to be assessed with achievement standards, and offer pathways leading directly to tertiary study. All the within-subject mathematics or English courses described as "traditional" are likely to be assessed with a full or near full subject-suite of achievement standards (see the analysis reported in Hipkins, 2004; Hipkins et al., 2004), and to closely resemble pre-NCEA courses, as are other more "academic" subjects such as history and the separate science disciplines at Year 12.

[30] In this study, similar subjects from different schools were grouped before clustering. This was a necessary first step because so many different variations on subject themes are possible.

The other two clusters offer subjects that appear more related to particular occupations or current interests; and the "alternative" versions of mathematics and English they offer are more likely to focus on practical presentations and uses. On the one hand, these clusters include courses that may be relatively easily linked to students' current lives and interests; and may therefore encourage their interest and hard work in them. If these subjects are indeed seen this way by the teachers, they are perhaps less likely to offer "content for content's sake" or for sorting purposes, and students may well have their eye on some pathway other than university. On the other hand, students choosing this type of subject combination may be aiming to keep both university pathways and other options open (for a discussion of the prevalence of such thinking, see Vaughan, Roberts, & Gardiner, 2006). It is perfectly possible to keep many pathways open where a subject is being mainly assessed with achievement standards, although in some teachers' words, such subjects may be seen as "intellectualised" and hence problematic (Hipkins & Vaughan, 2002). However, it is not so easy to do so when a subject is being mainly assessed with unit standards, which were more in use in the "contextual" and "vocational" clusters.

The "vocational" cluster is suggestive of the sorts of subjects which deans encourage "more practical" students to take, and closely matches one cluster we found in the Learning Curves schools. Such combinations may well prepare students for specific work-related pathways beyond school if they know what they want to do. However, we have already noted that some students may experience some of these subjects as a place where they are placed against their will—much to their and the teacher's dissatisfaction. In such cases, motivation is likely to be just as much an issue as it would be if they were doing more academic subjects.

As the following table shows, very similar clusters can also be found in Year 12 and we have given them the same names. The "contextual" cluster is more distinct from the "vocational" cluster at Year 12, and more likely to offer traditional versions of English and mathematics, allowing the tertiary pathway.

Similar to findings in the Learning Curves study (Hipkins et al., 2005) Mäori and Pacific students were more likely than Päkehä and Asian students to be taking subjects in a "contextual" or "vocational" cluster and were less likely to be taking academic subjects. Males were also more likely than females to be taking contextual or vocational subject combinations while females were more likely to be taking a traditional academic science combination. Other social characteristics are difficult to disentangle from those already reported. Students from low-income homes, particularly low income at age 5, and from low-decile schools were more likely to be taking a contextual or vocational subject combination. Most students whose mothers were university educated were taking either a traditional academic arts or science combination. Details can be found in the technical report accompanying this report (Hodgen, 2008).

That four such similar clusters can be formed at two year levels when the students are drawn from so many different schools (44 schools at Year 11, 61 schools at Year 12) attests to the closeness with which schools have adhered to traditional subject timetabling practices, notwithstanding the new flexibility potentially available to them with the NCEA.[31] Table 36 above also supports this picture, with only a quarter of schools seeing curriculum innovation as one of their strengths.

[31] However, bear in mind that in this sample, there was an over-representation of decile 9–10 secondary schools compared with the national profile, and these schools are more likely to offer "traditional" subjects that lead or allow university-oriented pathways.

Table 38: Subject clusters found for Year 12 students

Name given to cluster	Subjects likely to be combined in a cluster	
	50% or more of cluster take subject	Other subjects associated with cluster
Traditional arts	Traditional mathematics Traditional English	Food-related subject An alternative science subject Dance/drama Accounting and/or economics Textile technology Languages Geography History Computing
Traditional science	Traditional mathematics Traditional English Biology Chemistry Physics	Health Design technology Languages
Contextual	Mix of traditional and alternative mathematics Traditional English PE	Health Visual arts Dance/drama Various technology subjects Graphics Mäori/Samoan Humanities subject Text and information management Life skills subjects Hospitality/tourism
Vocational	Alternative version of mathematics Alternative version of English	Food-related subject Outdoor sport Other science subject Hard materials or other technology Mäori/Samoan Text and information management Life skills subjects Hospitality/tourism

Links between subject clusters and competencies

At age 14, the subject clusters we found were not as distinctive as the ones we found at age 16, because of the larger role played by compulsory subjects. However, we did find that students with lower competency levels were more likely to be in clusters that included subjects that were in the age-16 "contextual" or "vocational" clusters, and that students whose options on top of the compulsory subjects were focused on technology, arts, and Mäori showed more disengagement with learning, and experienced more disruption in their classes. What is the situation at age 16?

Students in the "vocational" and "contextual" subject clusters at age 16 had lower average scores on many of our variables, whether it was their own reports of school engagement, teacher reports of their attitudes and approaches, or, to a lesser extent, their reports of their relationships with family, and parent views of their attitudes. However, they were as likely to be absorbed in their learning as others, as positive about their learning

environments, and as satisfied with their subject mix as others. These two clusters were more likely to include students whose school motivation at age 14 had been low, and who had not enjoyed reading. The "contextual" cluster was most likely to include students whose age-14 interests fell into the electronic games/no interests cluster; the vocational to include students who had been involved in bullying in at least two of the four previous Competent Learners study phases, and least likely to include students who had always been enthusiastic about school over that time. The "vocational" cluster had the highest level of poor attendance (30 percent), followed by the "contextual" cluster (20 percent).

The pattern of differentially grouping certain "types" of students that was indicated at age 14 is apparent in the subject clusters at age 16. Sorting students into different versions of compulsory subjects in the lower secondary school seemed to represent a type of streaming, albeit less obvious than such practices in the past. When reporting these findings we noted:

> 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 streaming practices outlined above. Reinforcing this possibility, the students in Cluster 1 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. (Wylie & Hipkins, 2006, p. 123)

At age 16, it was the students in the "contextual" and "vocational" subject clusters who were thought by their deans to be more likely to experience hindrances to learning from other students. Thus while students may think of choosing subjects, those choices also lead to different learning contexts within the same school.

How students experienced the process of choosing subjects

Subject clusters paint a picture of constrained choices for students, but were the students themselves aware of this? The next table shows responses to the items that made up the factor *satisfied with subject mix*. Clearly, most students and parents were happy with their choices. *Satisfied with subject mix* was not significantly correlated with subject clusters so it seems that the subject mixes students could choose were mostly seen as meeting their learning needs.

Table 39: Satisfied with subject mix

Statement	% students who agreed or strongly agreed (n = 421)
I am happy with my subjects this year	78
My parents are happy with my subjects this year	80
The subjects I am doing will help me do the subjects I want to do next year	75

Satisfaction with subject mix was moderately correlated with levels of *engagement in school* (0.50), and *feeling affirmed at school* (0.45), and reasonably correlated with *student approach to NCEA* (0.31).

A quarter of the students said they wished they had had more guidance with their subject choice. The main reason was that choices they had made had closed pathways for them (13 percent). Some students were now more aware of career prerequisites or pathways (9 percent) or of university prerequisites (3 percent) or simply now had more idea of what they wanted to do (3 percent).

On what basis do students choose subjects?

The next table compares reasons students gave for their current subject choices with reasons they gave for dropping subjects they had taken the previous year (76 percent said they had done this). Where an item is basically the same but was expressed differently as a negative choice (i.e., as a reason to drop a subject) the alternative wording is shown in brackets.

As they did at age 14, the majority of students continued to choose subjects they thought would be interesting for them, or lead to a career. The main reasons for dropping a subject were because they did not enjoy it or had found it difficult. Other reasons for taking a subject that were given by around a quarter of the students were continuing one already taken, taking it because the student was good at it, and because of family advice. So subject choice includes both consideration of current interests and performance level, and an eye to the future (however that is understood and conceived). A fifth of the students dropped a subject to try something new.

Students in the "traditional arts" cluster were more likely to say they chose a subject because "I'm good at it". Students in the "traditional science" and "vocational" clusters were more likely to say they dropped a subject because the work was difficult or they did not enjoy it.

Family advice remained more important to students than advice provided by the school (or their friends). However, once choices had been made, it seems parental opinion was seldom a reason for a student to drop a subject between years—and neither was advice from teachers or friends.

Table 40: Influences on choices to take or drop subjects

Influence on subject decision	% mentioning this factor (*n* = 421)	
	Decision to take subject	Decision to drop subject
Own interests/career (needed different subject for tertiary study)	82	5
Took subjects that continued on from last year (not offered this year)	29	6
Took subjects I'm good at (didn't enjoy/difficult)	23	44
Family advice	23	1
Sounded fun	12	
Teacher's advice	8	
Discussion with friends	8	
Had no real choice/had to prioritise	7	10
Wanted to try something new	5	20
Sounded easy (didn't like workload/homework)	5	5
Information from school, e.g. course booklet	4	
Teacher reputation	3	7

The Learning Curves study reported that not many students chose a subject on the basis of the teacher they were likely to have and we also see this here. The expectation of poor teaching influenced just 7 percent of students to

drop a subject between years and even fewer selected a subject in the expectation of good teaching. Given the strong influence of teachers on the way students experience a subject, this is very interesting. It may be that schools do not attach teacher names to specific classes until after the timetable has been settled, so that this factor does not distort choices and result in under- and oversubscribed classes.

In view of the ways school timetable structures and advice processes may channel certain students into a certain type of course combination it is interesting that just 7 percent of students said they had "no real choice" or had to prioritise when making subject choices and 10 percent said they had had to drop a subject because of timetable clashes. Students taking "traditional arts" combinations were more likely to say they had limits imposed on the number of subjects they could choose. This could be because there are so many choices available to students with interests in this area, but some subjects such as languages typically have smaller classes and so may only be offered on one timetable line. Congruent with this, "traditional arts" students were also more likely to say that timetable clashes had influenced their choices.

Presenting a somewhat different picture, in another question just over half the students (53 percent) said there was something they wanted to do at school but could not. While responses could include extracurricular activities, students did mainly have specific subjects in mind. A wide range of subjects and two types of extracurricular activities were mentioned as choices that were not met. Humanities subjects (9 percent) were most likely to be mentioned, followed by graphics or photography (6 percent); PE/health/outdoor education (6 percent) or a science subject (6 percent).

Some of the subjects students felt they had missed out on are resource intensive and might offer only a limited number of places. However, just 6 percent of students said they did not have the course prerequisite and another 2 percent of students said they had not been able to take up a choice because they were not selected. As might be expected from the above discussion, the main reasons were timetable clashes (15 percent) and having to prioritise amongst too many choices (13 percent). Six percent said the subject they wanted to do was not offered at their school.

In the Learning Curves study very few students said they chose subjects because they expected them to yield "easy NCEA credits" (Hipkins et al., 2004) and we also see this here. In the "other" category, just 2 percent of students mentioned the prospect of NCEA credits as having influenced their choice of subjects and not one student said they had dropped a subject because it did not yield sufficient credits. Similarly, just 5 percent chose a subject as an easy choice, and the same number dropped a subject if the workload or homework was too great. Students did drop subjects if they did not enjoy them or they found the work too difficult, but the overall picture does not square with one of the most common criticisms of NCEA—that it encourages students to select subjects in anticipation of the easiest possible pathway through school in terms of credit accumulation.

Some implications

Of more concern in relation to the policy goals of increasing student participation and achievement are the questions that arise in looking at how schools are trying to cater for a wider range of student interests and anticipation of their future. There are signs in our data that while schools are seeing different needs, the ways in which they meet these needs through the subject courses they offer, the ways they are timetabled, and the ways in which they are assessed, continue the uneasy divide between the "academic" and the "vocational" or "practical". Students in the latter two cluster groups were more likely to attend less, and show less engagement with school, with the unintended outcome of sometimes making these classes more difficult for fellow students to learn in at the same time. Around a quarter of all students wished they had had more guidance on their courses, and just under a quarter were not happy with their subjects for the year. While just over half the students could think of a course they would like to have taken but could not, the dominant reason for dropping

courses is lack of enjoyment or finding the work too difficult. This points to the importance of how teachers can engage students in learning as much as the topic itself. We explore this more in the next chapter, as we look at some differences apparent between the classes students enjoyed most, and those they enjoyed least.

7. Opportunities to learn

Teachers' reports of the learning environment in their class provide indications of the types of opportunities to learn they are likely to provide. For example, if they value interactions between students in which ideas are shared and compared, they are more likely to say they design curriculum materials and facilitate group work that allows this. We found that maths and science teachers painted a somewhat different picture of the learning environment they provided compared with others; and that there are also some striking differences between student descriptions of practices in their most enjoyed compared with their least enjoyed subject classes. These differences do not seem to be subject-related, since students' most enjoyed subjects are spread right across the curriculum, but rather about the way learning happens in the class. These differences raise some interesting questions about how to engage senior secondary students in learning.

The overall picture of teaching practices given in this chapter also gives some useful information in relation to how ready secondary teachers might be to teach the key competencies now threaded through the revised New Zealand Curriculum (Ministry of Education, 2007).

The chapter begins by reporting on students' most enjoyed and least enjoyed subject classes now they are in the senior secondary school. Following that we describe and discuss the responses of the teachers of the students' most enjoyed and least enjoyed classes, and English. These teacher responses are reported for three factors that identify potential learning opportunities for students to: work interactively (*involved and active*); learn from feedback given in a supportive environment (*feedback and support*); and reflect on their learning (*reflective learning practices*); and one factor that is about more traditional approaches (*students working alone)*.

Students responded to a larger range of items about their learning environment, including some similar but not usually directly matching items, and how they responded to it. Their answers formed eight factors, five of which are described and discussed in this chapter, and three which are covered in the following chapter since they are more focused on individual responses.

Finally we describe some differences between teacher and student perspectives. Caution is needed here in comparing teacher and student perspectives, because each teacher described their practice with a whole class, of which the matching student was only one member, and while items asked of the students captured the essence of the teacher items, they were not identical.

Students' most enjoyed and least enjoyed subjects

The first table in this chapter compares the students' most enjoyed subjects in Years 11 or 12 with responses when the students were in Years 9 or 10. There is a much wider range of choices available at Year 11, and especially at Year 12, when only English is likely to remain compulsory in many schools. To show patterns more clearly, subjects from the same curriculum learning area have been grouped. For example, "science" includes biology, chemistry, physics, human biology, science, and horticulture. "Vocational" subjects include some very different subjects with links to likely employment opportunities (e.g., electronics, automotive, hospitality/catering, tourism) and more general transition courses.

Table 41: Subjects reported as most enjoyed

Subject	Most enjoyed subject in Years 11 or 12 (*n* = 421) %	Most enjoyed subject in Years 9 or 10 (*n* = 475) %
Arts	19	16
Health/PE	17	20
Sciences	13	6
Technology	10	8
Social sciences	10	9 (social studies)
Vocational subjects*	9	NA
Mathematics	6	9
Graphics	4	6
Computer studies**	4	NA
Languages	3	8
Accounting, business studies, economics	3	2 (economics, consumer studies, financial literacy)
English***	8	9

* Vocational and applied courses tend to be offered only in the senior secondary school.

** Computing-related courses were counted as technology in Years 9/10.

*** Where English was nominated as the most enjoyed subject, the student gave a second-most-enjoyed subject. These two choices have both been counted in the table, so the percentages add to more than 100.

It is interesting that learning areas where subjects are likely to have a strong practical component continued to top the list of most enjoyed subjects, as they did in Years 9 and 10. A preference for the arts in general is now translated into the separate subjects of visual arts (8 percent) and drama (6 percent). Science and mathematics both continued as most enjoyed subjects for some students, and chemistry also appeared (6 percent).

It is clear that most enjoyed subjects were widely distributed across the curriculum. This supports the view that the nature of the subject does not constrain the more interactive, purposeful, and connected learning associated with the practice of most enjoyed subjects that is discernible in teacher responses, but more strongly evident in student responses.

In the next table, subjects (grouped into learning areas) that students reported as their least enjoyed in Years 11 or 12 are compared with subjects students reported as their least enjoyed in Years 9 or 10. Again, it is clear that there is a wide range of subjects that are least enjoyed, but unlike those that are most enjoyed, there is a predominance of one curriculum area, mathematics and sciences (62 percent in total at Years 11 or 12). Between Years 9 or 10 and Years 11 or 12, there is a large increase in those who nominated mathematics. The second-largest increase is in English. We see that, as for most enjoyed subjects, the relative proportion of students who did not like a subject in many other learning areas is relatively unchanged from Years 9 and 10.

Table 42: Subjects reported as least enjoyed

Subject	Least enjoyed subject in Years 11 or 12 (*n* = 421) %	Least enjoyed subject Years 9 or 10 (*n* = 475) %
Mathematics	37	20
Sciences	25	20
English***	22	10
Social sciences	11	10 (social studies)
Accounting, business studies, economics	6	-
Technology	4	3
Health/PE	4	4
Computer studies**	4	NA
Vocational subjects*	4	NA
Languages	3	4
Arts	2	3
Graphics	1	< 1

* Vocational and applied courses tend to be offered only in the senior secondary school.

** Computing-related courses were counted as technology in Years 9/10.

*** Where English was nominated as the least enjoyed subject, the student gave a second-least-enjoyed subject. These two choices have both been counted in the table, so the percentages add to more than 100.

How teachers describe the learning environment in their class

We asked teachers a set of items related to the kind of learning opportunities in their class. In these responses, we identified four factors. For some items in the *feedback and support* factor, and one item in the *students working alone* factor, the difference between students' most enjoyed and least enjoyed classes is marked.

One item did not fit any of the four factors. Students were least likely to "mainly learn facts" in English classes (5 percent); with similar levels for most enjoyed (26 percent) and least enjoyed (31 percent) classes.

Students involved and active

The next table shows the eight items that formed a factor related to the extent to which students actively contribute to the overall learning environment of their class. The pattern revealed is one where some more interactive types of learning opportunities, linked to aspects of life beyond school, are not particularly common in any type of class. They are, however, comparatively less likely to be offered in students' least enjoyed classes. Teachers of most enjoyed classes were much more likely to also report a lot of fun occurring in these classes, and students interacting with people outside school as part of their school work..

Table 43: Students involved and active (teacher descriptions of their classes)

Aspect of practice	% teachers agree/strongly agree		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
Students can work out problems together	74	62	**78**
We have a lot of fun	**72**	43	46
Students do a lot of group activities and discussions	54	**62**	37
Students have the opportunity to act on issues that concern them	**50**	44	33
When students work in groups they solve their own conflicts	42	35	**41**
Students are encouraged to assess others' work and give them feedback	39	**46**	30
Students are encouraged to lead group projects/class activities	37	**37**	25
Students interact with people outside school as part of their school work	**43**	12	23

The largest percentages in each line are shown in **bold**.

Mathematics and science teachers were less likely than teachers of other subjects to identify any of the following as features of their class, even when their subject was nominated as a most enjoyed:

- We have a lot of fun.
- Students do a lot of group activities and discussions.
- Students have the opportunity to act on issues that concern them.
- Students are encouraged to assess others' work and give them feedback.
- Students are encouraged to lead group projects/class activities.
- Students interact with people outside school as part of their school work.

The patterns described here are particularly interesting in light of the intention to introduce key competencies into the very heart of the New Zealand Curriculum (Ministry of Education, 2007). Aspects of "participating and contributing", "thinking", and "relating to others" are evident when students connect learning to their lives and learn together. Aspects of "managing self" are evident in classes where students take responsibility for learning decisions and actions (Hipkins, 2006). We might expect to see an increased incidence in these types of learning opportunities as teachers get to grips with the intent of the key competencies but the data here suggest teachers need support as they are challenged to try new types of learning strategies and activities.

Feedback and support

The patterns described above for *students involved and active* provide a focus on the teacher's role in supporting student engagement and motivation. Teachers clearly have a substantial role to play in providing for types of learning that more fully involve students and that give them more power over their own learning decisions. For the items described in the factor *students involved and active* this can be a somewhat different role and use of

their expertise than that which prevailed in the past. What is the situation with respect to the sorts of teacher activities and decision making more likely to be associated with traditional views of teaching?

The next table shows the items that form the factor *feedback and support.* The more traditional teacher actions grouped here are much more commonly reported than those for *students involved and active,* and so there are fewer differences between teachers of students' most enjoyed, least enjoyed, and English teachers' actions. Teachers of most enjoyed classes were somewhat more likely to say they used different approaches for different students, and they and English teachers were somewhat ahead of those teaching least enjoyed subjects in the formative assessment practice of indicating "next learning steps". These trends may be because of the high proportion of mathematics and science teachers in the least enjoyed subject group, since they were less likely to provide feedback on next steps than teachers of other subjects.

Table 44: Feedback and support (teacher descriptions of their classes)

Aspect of practice	% teachers agree/strongly agree (*n* = 415)		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
I encourage students to ask for assistance or support	**97**	95	**97**
I encourage students to discuss things with me	**96**	95	94
I model the skills and attitudes I would like students to develop	93	**96**	91
Students can make mistakes and learn from them without getting into trouble	**92**	**92**	**92**
Feedback I give students shows them their strengths	**88**	82	83
Feedback I give students shows them their next steps	84	**91**	75
Most of my time in class is spent helping students learn	**86**	80	81
Feedback I give students shows them their weaknesses	76	**83**	69
I use different approaches for different students	**76**	66	67

The largest percentages in each line are shown in **bold**.

Reflective learning

Developing an awareness of one's personal strengths and challenges as a learner is integral to the key competency "managing self" and highlights the metacognitive components of that competency (Hipkins, 2006). The four items that make up the factor *reflective learning* are related to opportunities to develop such awareness. Slightly over half the teachers reported that they provided such opportunities in their class. Teachers of students' most enjoyed classes were somewhat more likely to say they provided these opportunities, though only the largest differences are statistically significant.

Table 45: Reflective learning (teacher descriptions of their classes)

Aspect of practice	% teachers agree/strongly agree		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
Students are given time to reflect on their learning	**65**	62	57
Students give input into the context and direction of learning activities	**64**	57	51
Students have the opportunity to set their own learning goals	**55**	52	51
I encourage students to think and talk about how they are learning (the methods they are using)	**57**	51	52

The largest percentages in each line are shown in **bold**.

Teachers of mathematics and science classes were less likely to be including opportunities for their students to reflect on their learning, to give input into the context and direction of learning activities, or to have the opportunity to set their own learning goals.

Secondary teachers, particularly in mathematics and science, face challenges here. If these "managing self" metacognitive practices are to become more widespread, and the aim of supporting students to become lifelong learners is to be achieved, teachers may need models of how to go about encouraging greater student reflection and input into their learning goals. However, if they do not value this as an outcome of learning, no amount of modelling is likely to make a difference. Wider conversations about the purposes for learning in different curriculum areas will also be needed.

Students working alone

Practical activities were a marked feature of the students' most enjoyed classes; and in these classes they tended to do somewhat less note-taking and fewer written activities.

Table 46: Students working alone (teacher descriptions of their classes)

Aspect of practice	% teachers agree/strongly agree (n = 415)		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
Students do a lot of practical activities (r)	**72**	23	38
Students do a lot of written activities by themselves	50	**77**	60
Students take a lot of notes	34	**46**	40

(r) = reverse scored in measure

The largest percentages in each line are shown in **bold**

Practical activities were least likely to be reported for mathematics and science classes (33 percent cf. 70 percent for other subjects). Students in these subjects were more likely to be doing a lot of written activities by themselves (64 percent cf. 49 percent for other subjects), and taking a lot of notes (45 percent cf. 31 percent). They were also more likely to be mainly learning facts (34 percent cf. 24 percent).

How students see their opportunities to learn

We asked the students to tell us about aspects of their learning in the three classes, using the same set of 58 items for each class. These items were drawn from research on effective schools and on opportunities to learn related to the development of key competencies, some of which we had used in other NZCER projects.

Nine factors were identifiable among these 58 items; two of these (being positive about the class and about the teacher) were so highly correlated that we combined them into one, *positive learning environment*. This factor contained the largest number of items, 19. The seven other factors remaining we termed *relevant learning opportunities*, *self and peer formative assessment*, *a comparative learning environment, a disrupted learning environment, disengaged in learning environment, attitude to work,* and *absorbed in learning*. The last three factors had more items about individual student responses than the others, so we have included a description and discussion of them in the next chapter, which focuses on student approaches to learning. In this chapter, we describe and discuss the first five factors named above.

Positive learning environment

We started with two separate factors, one focused on the student's relationship with the teacher, and one on the teaching process. These were strongly correlated ($0.8 < r < 0.9$), which means that, while they do measure slightly different aspects of the class situation for the student (at least in theory), only one could be used in a linear model at a time. The strength of the correlations is indicative of the extent to which, at age 16, students' attitudes to their teacher and class are not separated. Not surprisingly, students tend to like a class in which they have an effective teacher who provides engaging and relevant learning opportunities, and who responds positively to their learning needs. Here the differences between students' most enjoyed and least enjoyed classes are wide: positive practices were seen in most enjoyed classes at around double the rate they were seen in least enjoyed classes; and English classes were in between.

Table 47: Aspects that help comprise a positive learning environment

Aspect of classroom environment	% agree or strongly agree		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
My teacher treats me fairly	**89**	75	49
I can count on the teacher for help when I need it	**87**	68	47
I understand my teacher's attitudes and rules	**87**	76	55
My teacher gives clear instructions	**87**	73	42
I like the teacher	**86**	62	32
The teacher gives useful feedback on my work that helps me see what I need to do next and how to do it	**86**	75	40
My teacher is interested in my ideas	**85**	60	27
The teacher is happy to explain things more than once	**85**	64	45
The teacher gives us clear expectations of what we are to do	**84**	71	47
I can make mistakes and learn from them without getting into trouble	**84**	72	50
I gain knowledge that will be useful for my future	**83**	62	46
The teacher spends most of their time helping us to learn	**81**	63	47
I can try out new ideas/ways of doing things	**81**	57	35
The teacher uses examples that are relevant to my experience	**77**	52	27
My teacher keeps teaching till we understand	**73**	56	35
My teacher knows what interests us	**72**	36	20
I get to think about ideas and problems in new ways	**67**	46	30
We discuss different ways of looking at things/interpretations	**65**	53	27
The teacher really understands how I feel about things	**61**	30	16

The largest percentages in each line are shown in **bold**.

In their least enjoyed classes, students were far less likely to feel they were treated fairly, or that the teacher was interested in them as a person or interested in their learning. This pattern is congruent with the greater difficulty that teachers of individual students' least enjoyed classes had in providing information about those students' approaches to learning in their class. The next chapter suggests there is a different quality of teacher–student interpersonal interactions when students are more involved and active in the class. Students and teachers are

more likely to get to know each other better when there is greater interaction, and genuine two-way interaction, between them. It is not surprising then, that only a third of the students liked the teacher of their least enjoyed class. There are implications here for the development of the key competency "relating to others".

Students thought they were much less likely to be actively involved in relevant learning in least enjoyed subjects, or that they could try out new ideas and ways of working; e.g., using examples relevant to their experience was likely to happen in nearly three-quarters of most enjoyed subjects compared to just one-quarter of least enjoyed subjects.

In mathematics and science classes, the students were also less likely to think that teachers were interested in their ideas, knew what interested them, or understood how they felt about things. They were also less likely to say that the teacher used examples that were relevant to their experience—or that they discussed different ways of looking at things (though they were just as likely to say that they could safely express differing views).

Relevant learning opportunities

The factor *relevant learning opportunities* includes some items with similarities to the teacher factor *students involved and active*. Just as teachers of most enjoyed subjects were somewhat more likely to say they provided some more interactive and relevant learning opportunities, so students said most enjoyed subjects (classes) provided more connection with the world outside school.

Table 48: Relevant learning opportunities

Aspect of relevant learning opportunities	% agree or strongly agree		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
I see connections with other things outside school	**73**	41	36
We have a lot of hands-on/practical activities	**73**	9	24
We do projects about real things/issues	**54**	36	25
We learn things outside the classroom, e.g. on fieldtrips	**41**	11	14
We can choose the topics we want to do	**28**	17	10
I can choose which assessments I want to do for NCEA	**17**	10	14

The largest percentages in each line are shown in **bold**.

In mathematics or science classes, students were less likely to say they had relevant learning opportunities: fewer hands-on experiences, projects about real things or issues, choice of topic, and learning outside the classroom; and they were less likely to see connections with things outside school in these classes.

The issue of choosing NCEA assessments is more fully discussed in Chapter 9. What is of interest here is how few students say they have this chance in any subject, whether most enjoyed or not. Early research on the impact of NCEA on classroom practice found that teachers rated involving students in making assessment decisions lower than any of the other pedagogical practices listed in the survey they were given (Hipkins, Conner, & Neill, 2006; Hipkins & Neill, 2006). Teachers in these two Shifting Balances projects saw it as their responsibility to exercise assessment decisions on behalf of their students. The key competencies' challenge here is to help teachers see

that students need practice in making such decisions for themselves, even in-high stakes settings, if they are to become lifelong learners.

Self-assessment and awareness of progress

The next two factors derived from student views of their classes contrast aspects of learning experiences that give students pointers as to how well they are doing. Developing self-awareness of learning strengths and needs is seen as important for supporting and enhancing "lifelong learning" dispositions. Again, this is an aspect of the key competencies in the draft curriculum, particularly "managing self".

The first of these two factors, *comparative learning environment*, arguably does *not* contribute to developing ability to manage one's own learning. When students rely on the teacher to tell them how well they are doing, they are not learning to judge for themselves. Furthermore, simply being compared with other students is unlikely to give useful formative feedback that could lead the student to see where they need to go next. Encouragingly, then, relatively few students said teachers compared students with each other. This was no more likely to happen in least enjoyed than in most enjoyed classes; and did not happen more often in mathematics or science classes. Publicly rating students against one another does not seem to be a hallmark of New Zealand secondary schools.

Table 49: Student view of a comparative learning environment

Aspect of comparison	% agree or strongly agree		
	Most enjoyed class (n = 418)	English class (n = 415)	Least enjoyed class (n = 417)
The teacher tells us how we compare with other students	22	16	20
The teacher tells us who has the highest and lowest marks for their work	10	8	**13**

The largest percentages in each line are shown in **bold** face.

Advocacy for the use of assessment methods that promote lifelong learning emphasises the importance of self and peer assessment (see, for example, Aikenhead, 1997). These opportunities to learn were most likely to happen in most enjoyed subjects. However, even here, time for reflection on learning and encouragement to self-assess was not universal.

Table 50: Self and peer formative assessment

Aspect of formative assessment	% agree or strongly agree		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
The teacher encourages me to assess my work and see what I need to improve	**65**	54	34
I get time to think and talk about how I'm learning	**62**	23	17
We assess each other's work and give feedback	**47**	34	20

The largest percentages in each line are shown in **bold**.

Students who gave mathematics or science classes as their most enjoyed classes were less likely than those who gave other subject classes as their most enjoyed to say they assessed each others' work and gave feedback.

Students' views of class behaviours

How students come to see themselves as learners can be influenced by what is happening around them in the class. In challenging situations a collective sense that "we are the kids who …" can develop. In the *disrupted learning environment* factor, we sense how students and their teacher can contribute to continuing challenges for learning. Such environments were relatively infrequent in most enjoyed classes; but could occur in between a third and half of least enjoyed classes.

Table 51: Disrupted learning environment

Aspect that potentially could be negative	% agree or strongly agree		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
Students don't listen to what the teacher says	14	25	**43**
The teacher spends most of the time telling us what to do	25	28	**46**
The teacher spends most of the time telling us how to behave	10	22	**38**
Other students are distracting	24	47	**49**
The class gets interrupted (e.g. by external events, messages)	20	30	**34**

The largest percentages in each line are shown in **bold**.

Differing teacher and student perspectives

To what extent do teacher and student views agree (or not)? We checked this by cross-tabulating teacher and student responses for similar items in the three types of subjects. This is a broad-brush approach: we are looking at overall levels rather than comparing individual student views matched with the individual teacher of that particular class. In all we checked 28 potential matches for English and then did the same again for most enjoyed and least enjoyed subject. While some matches were not as close as others, it is interesting that so few meaningful differences were found. Teacher and student views were rather similar overall, particularly for English classes. Below we report the few differences in views between teachers and students.

Table 52: Differences between students' and teachers' views of what happens in English classes

Statements about opportunities to learn		Pattern of difference found
T:	Most of my time is spent controlling the class.	Students were more likely to think this than teachers.
S:	The teacher spends most of the time telling us how to behave.	

Students saw more opportunities for practical activities and interaction with each other than did teachers in their most enjoyed classes, but teachers thought there was more opportunity for interaction with people outside school. That more teachers than students thought they had to work hard to control most enjoyed classes is interesting, particularly as it is the reverse of the pattern for both English and least enjoyed subject. It may be that the more interactive learning experiences these teachers tend to offer do create a sense that they have to work extra hard to keep learning on track.

Table 54: Differences between students' and teachers' views of what happens in most enjoyed classes

Statements about opportunities to learn		Pattern of difference found
T:	Students interact with people outside school as part of their school work.	Teachers were somewhat more likely to say this happened.
S:	We learn things outside the classroom, e.g. on fieldtrips.	
T:	Most of my time is spent controlling the class.	The reverse of the pattern in English—teachers were somewhat more likely to think they had to do this.
S:	The teacher spends most of the time telling us how to behave.	
T:	Students do a lot of practical activities.	Students were somewhat more likely to say this happened.
S:	We have a lot of hands-on/practical activities.	
S:	I work with other students on group tasks.	In both cases students were more likely to say this happened. For working on problems together the difference was in how emphatic the response was—students were more likely to "totally agree".
T1:	Students do a lot of group activities and discussions.	
T2:	Students work out problems together.	
T:	When students work in groups they solve their own conflicts.	Students were twice as likely as teachers to say they could do this.
S:	Students can safely express differing views.	

In least enjoyed classes, teachers saw more opportunity for practical activities and interaction than did their students. They also thought they gave more useful feedback, which suggests that teachers' perceptions of what feedback is useful for student learning do not always match their students', and that such mismatches contribute to students not enjoying learning as well as they might.

Table 55: Differences between students' and teachers' views of what happens in least enjoyed classes

Statements about opportunities to learn		Pattern of difference found
T:	Students do a lot of practical activities.	Teachers were more likely than students to say this happened.
S:	We have a lot of hands-on/practical activities.	
T:	Students interact with people outside school as part of their school work.	Teachers were more likely than students to say this happened.
S:	We learn things outside the classroom, e.g. on fieldtrips.	
S:	The teacher gives me useful feedback on my work.	In both cases around two-thirds of teachers but only a third of students saw this as a feature of their class.
T1:	Feedback I give students shows them their weaknesses.	
T2:	Feedback I give students shows them their strengths.	
T:	Students do a lot of group activities and discussions.	Students were more likely to say this happened—half the students but only a third of the teachers saw this as a feature of these classes.
S:	I work with other students on group tasks.	
T:	Most of my time is spent controlling the class.	Students were three times as likely to think this as teachers.
S:	The teacher spends most of the time telling us how to behave.	

Aspects of interactions when working in groups were more likely to be seen by students as happening in both most enjoyed and least enjoyed classes, perhaps because they are the ones doing the interacting. Conversely, interacting with people outside school was more likely to be seen as happening by teachers in both most enjoyed and least enjoyed classes. In this case the difference might lie in the frequency of these events—one field trip in a year would allow the teacher to say this was part of their class, whereas students might wish to see this happening more often before they would agree it was a feature of the class.

Implications

Taken as a whole, the responses outlined in this chapter provide evidence that students appreciate the kinds of learning activities that are potentially supportive of strengthening their key competencies, and that their feelings about different classes—and the teachers of those classes—are grounded in at least tacit discrimination between the types of learning opportunities their classes offer. These learning activities that strengthen key competencies can be offered in any subject, though it seemed as if they were less likely to occur in mathematics and science classes.

While students were positive about the support they got in their most enjoyed classes, such as getting useful feedback, having examples that were relevant to their experience, they were slightly less likely to perceive even in these classes the opportunity to see things afresh, or to discuss different interpretations, and even less likely to be given responsibility that would build skills of managing their own learning. These opportunities were even less

likely to be offered in their least enjoyed classes. Thus we gain from student perspectives particularly a picture of the challenges for teachers and schools of moving to practices that make learning more enjoyable, while developing the key competencies. We also see how variable practice can be within schools, so that students are experiencing quite different learning opportunities as they move between teachers.

One of the aims of lifelong learning, with strong links to the key competency "managing self", concerns the strengthening of students' autonomy as learners. If teachers are also seen as learners in the context of rapid curriculum change, then they too need to be helped to reflect on the relationship between what they do in their classroom and the strengthening of their own and their students' autonomy and intrinsic motivation as learners. It could be that a shared teacher–students dialogue that made opportunities to learn in the class an *explicit* focus of discussion would help achieve this ambitious aim. It seems to us that schools would find this dialogue to be a very productive way to develop how they are to include key competencies in the learning opportunities they offer students. It is vital that work on how to include the key competencies in learning precedes work on how to assess them, since we do not yet know what progression in the key competencies looks like, and thus we risk distorting the intention of the revised New Zealand Curriculum.

8. Student approaches to learning

We have seen that students see themselves as having quite different learning opportunities in different classes, in the same school. Now we explore how teachers' assessments of students' attitudinal competencies, reported at the overall level in Chapter 3, and student reports of their attitudes to work and learning also show some differences related to differences in class contexts. We also link these attitudes to the key competencies.

Three factors paint a picture of students' attitudinal competencies from the teachers' perspectives. The first of these factors is *thinking and learning.* Here we see indications of the way teachers see students' dispositions to actively think, make links, and generally challenge themselves in their learning. There are strong links here to the key competencies "managing self" (particularly in relation to strengthening personal autonomy in learning) and "thinking". Linking to different, and perhaps more traditionally understood aspects of "managing self", is the factor we have titled *focused and responsible*. Many of the items in this factor require students to fit in and do as directed, but a few items are for aspects that could strengthen autonomy (for example, evaluating progress against personal learning goals). The third factor is called *social skills*. The four items in this factor align most closely with the key competency "relating to others".

Students' views of themselves as learners are also discussed. We look at their *attitude to work*, whether or not they become *absorbed in learning,* and whether they are *disengaged in learning.* Dispositional aspects of the key competency "managing self' are to the fore in the items that make up these factors.

The chapter concludes with a comparison of student and teacher views. Although these are similar more often than not, we did find a few more differences between teacher and student views of student approaches to learning, than we found when we looked at the two groups' views of opportunities for learning. We discuss challenges that arise when teachers need to infer aspects of students' dispositions to learn from the behaviour they are able to show in their class, particularly when they appear to see more positive signs of students' attitudes to learning than students themselves report.

Teachers' views of students as learners

When responses were being entered into our database it quickly became apparent that the teacher of an individual student's most enjoyed subject was much more likely to fully answer the questions about that student than was the teacher of that student's least enjoyed subject. The latter sometimes commented that they could not be expected to know when they had so many students to teach. Partly, this could have resulted from the length of the relationship. Teachers of most enjoyed subjects were more likely to have taught a student for one year or more. By contrast, English teachers were more likely to have taught a student for six months or less, and teachers of least enjoyed subjects tended to fall between these two positions. However, length of contact cannot be the only factor impacting on responses since teachers of least enjoyed subjects, rather than of English, were more likely to give "don't know" responses. Rather, the patterns described in the previous chapter on *Opportunities to learn* suggest that the types of learning interactions that seemed to prevail in least enjoyed subjects gave teachers fewer opportunities to observe individual students' approaches to learning.

Only seven of the 30 questions asking teachers to rate aspects of individual students' approaches to learning did not show significant differences between teachers of the most enjoyed and least enjoyed subjects, with responses from teachers of English likely to be somewhere in the middle.

Most items where there were no significant differences between teachers of most enjoyed and least enjoyed subjects were for behavioural issues: items such as acts without thinking of the consequences; gets

hassled/bullied by other students; hassles/bullies other students; influenced by peer pressure to do something out of character; and mixes with students who are antisocial or get into trouble. The other two items where there were no significant differences between teachers related to ways of interacting with other students (presents point of view appropriately, even if there is disagreement; respects other points of view/different ways of doing things).

Thinking and learning

Nine of the 11 aspects of student attitudes were more likely to be seen in a positive light by teachers of most enjoyed classes than by English teachers or teachers of least enjoyed classes. The only non significant differences were for the items "learns from my feedback" and "takes on new ideas", both of which are integral to a traditional teaching role. However, even in most enjoyed subjects less than half the teachers thought that the study participants could often or always self-reflect, had an awareness of different ways of interpreting knowledge, or could think outside the square.

Table 56: Thinking and learning competency: differences between teachers' views

Aspect of student behaviour	% teachers saying this happened often or always		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
Takes on new ideas	69	53	48
Expresses his/her views and needs appropriately	63	56	48
Learns from my feedback	69	49	46
Asks me for advice or help when s/he needs it	64	49	41
Asks questions so s/he understands	63	49	41
Enjoys new experiences or challenges	68	40	36
Clearly explains things so you get a very good idea of what is happening and what s/he is thinking	60	43	37
Takes full part in a group that is working to complete a learning task together	58	43	36
Can reflect on how s/he has learnt about something (the methods used)	50	38	32
Aware that there are different ways of interpreting knowledge	42	37	30
Thinks outside the square. Thinks of new ways to do things or solve problems	40	28	20

The largest percentages in each line are shown in **bold**.

Teachers of least enjoyed subjects were more likely than teachers of English or most enjoyed subjects to say they did not know whether a student could or would:

- Take on new ideas.
- Express his/her views and needs appropriately.
- Enjoy new experiences or challenges.
- Clearly explain things so you get a very good idea of what is happening and what s/he is thinking.
- Take full part in a group that is working to complete a learning task together.
- Show awareness that there are different ways of interpreting knowledge.
- Think outside the square.

In contrast to the teacher views related to opportunities to learn, there were few overall differences between mathematics and science teachers' views of their students' attitudes to learning, and the views of teachers of other subjects. However, compared with other teachers of most enjoyed subjects, mathematics and science teachers where these classes were the most enjoyed were less likely to know if the student could reflect on how s/he had learned. Compared with other teachers of least enjoyed subjects, mathematics and science teachers whose classes were the least enjoyed were less likely to know if the student could think outside the square. We have already noted that teachers can only infer both these behaviours if they do not structure interactions that allow the behaviours to become an explicit focus of learning.

For all the items where a good student–teacher relationship is important, mathematics and science teachers' responses did not differ overall from those of their colleagues in other subjects. The same is true of the items in the next factor—*focused and responsible.*

Focused and responsible

Comparative patterns of teacher responses for the 16 items that make up the attitudinal competency *focused and responsible* are summarised in the next table. Once again we see that teachers of least enjoyed classes, along with teachers of English in some cases, were less likely to hold positive views of their students' likely behaviour (13 of the 16 items). For other items, teachers of English were positioned somewhere in the middle, or closer to the responses of the teachers of the most enjoyed class.

There were no differences for these items: learns from mistakes/experiences; remembers and carries out instructions after hearing them once; and acts without thinking of the consequences.

Table 57: Focused and responsible competency: differences between teachers' views

Aspect of student behaviour	% teachers saying this happened often or always		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
Turns up to class on time	**86**	78	77
Brings all the equipment to class s/he needs	**83**	79	71
Takes responsibility for his/her actions	**82**	72	69
Follows all class rules and routines without needing to be reminded	**72**	62	57
Follows what is being talked about in a conversation and stays on same topic	**69**	62	54
Good listener; e.g., lets others finish before speaking, concentrates on what they are saying	**67**	63	54
Finishes all class work	**70**	51	45
Learns from mistakes/experience	**65**	49	47
Remembers and carries out instructions after hearing them once	**62**	51	47
Has a good concentration span when working	**59**	48	40
Finishes all homework	**58**	46	38
Meets any goals s/he sets her/himself	**57**	43	39
Persists with solving a problem even when things go wrong for a while	**55**	42	35
Assesses his/her work and makes improvements before completing or handing in	**47**	41	31
Where there is a choice, chooses work that allows him/her to gain further knowledge and skills	**44**	30	27
Acts without thinking of the consequences	8	9	**12**

The largest percentages in each line are shown in **bold**.

Again, teachers in least enjoyed classes were less likely to be aware of several aspects of student behaviour (whether a student follows a conversation, and whether he or she remembers and carries out instructions after hearing them once), perhaps because opportunities to demonstrate these aspects were not provided in their classes.

Teachers of mathematics and science classes that were named as students' most enjoyed classes were less likely than teachers of other most enjoyed classes to say that students often or always chose work that allowed them to gain further knowledge and skills. Paradoxically, when these classes were least enjoyed, teachers were more likely to say students did this. The students' responses for these subjects will be discussed shortly. They give indications that there can be something different about mathematics and science as least enjoyed subjects, compared with all other least enjoyed subjects. The Staying in Science research suggests that students who

struggle with sciences or mathematics will persist if they see these subjects as strategic for their futures, even if they are not enjoying them or feeling successful (Hipkins, Roberts, Bolstad, & Ferral, 2006).

The overall picture here is not particularly rosy in terms of deeper aspects of the key competency "managing self". Most of the higher frequency responses are for items where a *behavioural* type of response will suffice—turn up on time, bring your gear etc. While obviously necessary to enable learning, this is not *sufficient* to allow deeper aspects of "managing self", such as strengthening personal autonomy in learning, to be supported. Aspects in this factor that arguably could support the dispositional aspects of learning (e.g., persistence, concentration span, work completion, choosing more challenging work) or the development of greater autonomy (e.g., setting and monitoring personal goals, self-assessment) are only reported as happening often or always for around half the students of the teachers of most enjoyed subjects and a third of the students of teachers of least enjoyed subjects.

Nevertheless, the finding that these deeper aspects of "managing self" are more likely to be associated with classes that students enjoy could be food for thought for teachers as they debate the implementation of the key competencies.

Social skills

This factor clusters together four aspects of students' social skills, as demonstrated in class.

Table 58: Social skills competency: differences between teachers' views

Aspect of student behaviour	% teachers saying this happened often or always		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
Respects other points of view or different ways of doing things	71	67	60
Presents his/her point of view in an appropriate manner, even when there is a disagreement	52	51	41
Helps/supports other student in class	47	31	28
Good at resolving disputes or keeping things smooth with peers	41	35	32

The largest percentages in each line are shown in **bold**.

Two aspects of student attitudes that are more likely to be demonstrated in more interactive learning settings (resolving disputes, supporting others) were again more likely to be reported as happening often or always by teachers of students' most enjoyed classes, although even here fewer than half the teachers said these happened often or always. There are challenges here if students are to be supported to strengthen their competencies in "relating to others".

Teachers of mathematics and science classes named as most enjoyed were more likely than teachers of other most enjoyed classes to say they didn't know if students were good at resolving disputes with their peers.

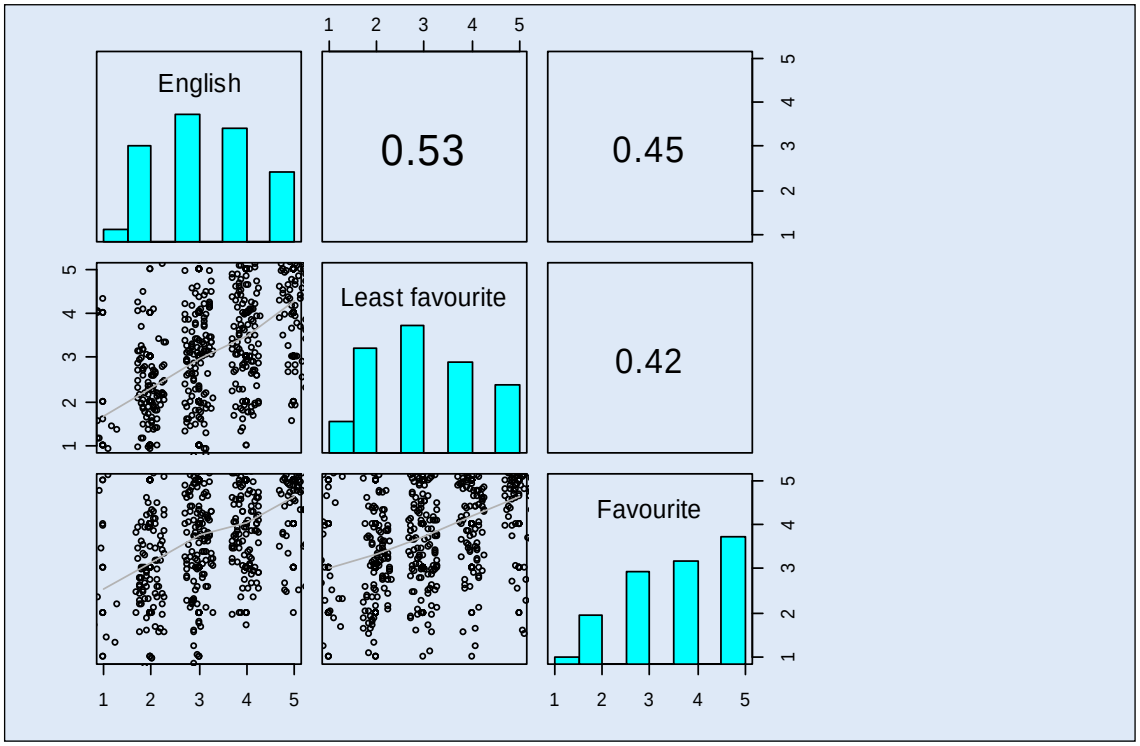
Teachers' predictions of students' future learning success

As well as asking about observable behaviours, we asked teachers to rate students' overall ability and to predict their likely learning success in the future. The patterns reported above led us to question whether the differing views of any one student's most enjoyed and least enjoyed subject teachers would mean they predicted a different level of future success for this student.

With the exception of students seen as performing overall at a "very good/excellent" level, the teacher of their most enjoyed subject was likely to be more optimistic about a student's overall ability than the teacher of their least enjoyed subject. Differences of perceptions varied the most for students who were rated as minimal or very low ability by teachers of their least enjoyed subjects. It could be argued that such differences do reflect a real differential in learning success, since students are likely to do better in subjects they enjoy and to enjoy subjects in which they experience greater achievement success. Providing a counter to this argument, we found that teachers of most enjoyed subjects were also likely to hold more positive expectations about a student's success in terms of the overall qualification they would gain by the end of school, and of any post-school qualification they might gain. For example, where the teacher of an individual student's least enjoyed subject expected that student to gain no qualifications, the teacher of the same student's most enjoyed subject was more likely to see that student gaining Level 1 or 2, or even Level 3 of NCEA. Where the teacher of a least enjoyed subject saw a trade qualification as the best a student might achieve post-school, the teacher of that student's most enjoyed subject might see a tertiary diploma. The only category on which both teachers were more likely to agree than disagree was where students were seen as having postgraduate potential.

These differences in views of students' likely performance are summed up in the moderate correlation patterns of Figure 9. In this diagram, the levels of achievement marked 1 to 5 correspond to achievement being: minimal/very low (1); slow/below average(2); average/medium(3); average, very good in some (4); and very good/excellent (5).

Figure 9: Teacher overall description of achievement



How students saw themselves as learners

Student responses to items about their learning also showed differences related to how much they enjoyed the class. Here we look at the three factors that were evident among these items.

Attitude to work

There are marked differences here between students' attitudes to their most enjoyed and least enjoyed subjects; with English sitting in between. Differences in subject preferences certainly seem to be related to anticipated success. Most students were confident of doing well and mastering the skills being taught in their most enjoyed subject, but only a third of them expected to do well in their least enjoyed subject.

There is an interesting difference between the proportion of students who thought they would get a lot of NCEA credits in their most enjoyed subject (71 percent) and the proportion who thought these credits would be easy to get (53 percent). The Learning Curves study identified challenging learning as an important aspect of student enjoyment of subjects (Hipkins et al., 2004) and here we see that, while students were confident in their most enjoyed classes, they still expected to have to work to succeed in their assessments.

Table 59: Attitude to work

Aspect of attitude to work	% agree or strongly agree		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
I do well	**89**	54	35
I'm confident I can master the skills being taught	**86**	53	37
I will get a lot of NCEA credits in this class	**71**	35	32
The NCEA credits are easy to get	**52**	24	24
I don't know how to do the work (r)	5	11	**35**
I plan to drop the subject as soon as I can (r)	1	25	**43**

The largest percentages in each line are shown in **bold**.

(r) The item response was reversed when the factor was constructed.

Mathematics and science students were less likely than other students in least enjoyed classes to say they planned to drop this subject as soon as they could. This aligns with our earlier comments that these subjects may be taken "under sufferance", for strategic reasons.

Absorbed in learning

This factor indicated the weight that students put on their learning, and whether they could reflect on that learning. Here we see the same pattern as for the *attitude to work* factor: much higher levels of activities that support learning in most enjoyed subjects than in either English, or the least enjoyed subjects. Note that even in most enjoyed subjects, homework is not universally enjoyed.

Reflecting on how learning occurs is one kind of metacognitive thinking called for in the key competencies "thinking" and "managing self" in the revised New Zealand Curriculum, but this is not a widespread practice, even in most enjoyed subjects.

Table 60: Absorbed in learning

Aspect of learning	% students who agree or strongly agree		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
When I'm doing something, I think about whether I understand what I'm doing	74	65	47
When I finish my work, I check and make changes if needed before handing it in	68	50	29
I organise my time so that I get things done	64	36	24
I meet any goals that I set myself	64	42	27
I enjoy doing the homework I get	50	15	9
I like to reflect on how I've learnt something (the method I used)	44	27	21

The largest percentages in each line are shown in **bold**.

There was a correlation of 0.45 between an individual student's *attitude to work* and their level of being *absorbed in learning*. Higher levels of being absorbed in learning were also moderately correlated with higher levels of having relevant learning opportunities in classes (0.35), underpinning the gains that can come from providing such opportunities. Both these factors were also moderately correlated with levels of *engagement in school*, and *feeling affirmed at school*. Levels of being *absorbed in learning* were more correlated with having internal markers of success—internal motivation—than with the attitude to work.

Table 61: Correlations between absorbed in learning, attitude to work, and other variables

Measure	Absorbed in learning	Attitude to work
Internal markers of success	**0.51**	0.39
Affirmed at school	**0.46**	**0.42**
Engaged at school	**0.43**	**0.43**
Family communicates well	0.39	–
Absorbed in learning 14	0.38	–
Relevant learning experiences	0.35	–
Extending friendships	0.27	–
Cognitive composite 16	–	0.35
Cognitive composite 14	–	0.34
Attitudinal composite 14	–	0.29

Correlations of 0.4 or more are shown in **bold** face, those between -0.2 and 0.2 as –.

Not surprisingly, young people who were absorbed in learning at 16 were likely to have shown similar tendencies at age 14. They were also more likely to have higher levels of intrinsic motivation. What is heartening about this table is that being absorbed in learning is not related to cognitive competency levels: it is not just an experience limited to those who do well. This is important if we want to support lifelong learning for all.

Disengaged in learning

Very few students said they mucked around or tried to annoy the teacher in most enjoyed classes. By contrast they were likely to say they mucked around in about half their least enjoyed classes and know they annoyed the teacher in about a fifth of these. Since the same students responded in each case, we see here a pattern of behaving differently in different classes. They were least likely to feel they could get away with not doing much work in their most enjoyed class, consistent with the pattern we reported in relation to *attitude to work*, that students do accept hard work and challenge, but will feel more positive about it in environments that are also supportive of their learning.

Table 62: Disengaged in learning

Aspect of disengagement in learning	% agree or strongly agree		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
I muck around	16	26	43
I can get away with not doing much work	16	31	42
I behave in a way which annoys the teacher	5	9	21
We keep doing the same things without learning anything new	5	12	18

The largest percentages in each line are shown in **bold** face.

Differing teacher and student perspectives

We cross-tabulated teacher and student responses for similar items from the factors reported here—a total of 47 potential matches were checked. The next three tables describe patterns of differences we found. As for the learning environment, there were relatively few differences compared to the total count of potential matches.

Table 63: Differences in views of the students' behaviour in English classes

Statements about student		Pattern of difference found
S:	I get totally absorbed in my work.	Teachers were twice as likely as students to identify these indicators of absorption in learning.
T1:	Persists with solving a problem, even if things go wrong.	
T2:	Has a good concentration span when working.	
S:	I behave in a way which annoys the teacher .	A third of the students said they deliberately set out to annoy the teacher. Teachers were more generous—or it may be that they did not see actions as designed to annoy them.
T1:	Follows all class rules and routines without needing a reminder.	
T2:	Brings all the equipment to class s/he needs.	
T3:	Takes responsibility for his/her actions.	
T:	Assesses his/her work and makes improvements before completing or handing in.	Students were somewhat more likely to say they did this than teachers.
S:	When I finish my work I check and make changes if needed before handing it in.	
T:	Meets any goals that s/he sets her/himself.	Somewhat more students thought this than teachers.
S:	I meet any goals I set myself.	
T:	Learns from mistakes/experience.	More students thought this than teachers.
S:	I learn from my mistakes.	

The first two rows on the table describe *observable* aspects of behaviour. Here teachers were more likely than students to agree or strongly agree with the items being compared. The last three rows describe student behaviours where the teacher is arguably more likely to have to make an *inference* from observable behaviours so it is interesting that students are much more likely to agree they do these things.

Students tended to also be more positive than teachers about the aspects of learning that teachers would need to infer in their most enjoyed classes.

Table 64: Differences in views of the students' behaviour in most enjoyed classes

Statements about student		Pattern of difference found
S:	I get totally absorbed in my work.	More students said this than their teachers.
T1:	Persists with solving a problem, even if things go wrong.	
T2:	Has a good concentration span when working.	
T:	Assesses his/her work and makes improvements before completing or handing in.	More students said they did this than teachers.
S:	When I finish my work I check and make changes if needed before handing it in.	
T:	Meets any goals that s/he sets her/himself	Somewhat more students thought this than teachers.
S:	I meet any goals I set myself.	
T:	Learns from mistakes/experience.	More students thought this than teachers.
S:	I learn from my mistakes.	
T:	Asks questions so s/he understands.	More students had confidence in their teachers here, compared to just under two-thirds of teachers who saw students as actively seeking their help.
S1:	I can count on the teacher for help when I need it.	
S2:	The teacher is happy to explain things more than once.	
T:	Takes full part in a group working together.	More students thought this than teachers.
S1:	I work with other students on group tasks.	
S2:	Students can safely express differing views.	
S:	Other students are distracting.	Almost no teachers thought these things happened. A quarter of students said they were distracted, but this could have been more minor than these items imply.
T1:	Gets hassled, bullied by other students.	
T2:	Influenced by peer pressure to do something out of character.	

The pattern is reversed when we compare responses of teachers and students in students' least enjoyed classes: teachers are more positive than are the students, indicating that they may not be picking up the signs that students are not engaging or showing evidence of attitudes that support learning.

Table 65: Differences in views of the students' behaviour in least enjoyed classes

Statements about student		Pattern of difference found
S:	I get totally absorbed in my work.	Teachers saw this more than did students.
T1:	Persists with solving a problem, even if things go wrong.	
T2:	Has a good concentration span when working.	
T:	Follows all class rules and routines without needing a reminder.	Twice as many teachers said students followed routines as students saw themselves as organised in class.
S:	I organise my time so I get things done.	
T:	Assesses his/her work and makes improvements before completing or handing in.	A majority of teachers said students didn't do this, but students were more likely to fudge—a third gave a "neutral" response.
S:	When I finish my work I check and make. changes if needed before handing it in.	
S:	I behave in a way which annoys the teacher.	Students were more likely to say they annoyed the teacher than teachers saw evidence that they did not take responsibility in the class.
T1:	Follows all class rules and routines without needing a reminder.	
T2:	Brings all the equipment to class s/he needs.	
T3:	Takes responsibility for his/her actions.	
T:	Meets any goals that s/he sets her/himself.	Somewhat more teachers thought this than students.
S:	I meet any goals I set myself.	
T:	Learns from my feedback.	Fewer students thought these things happened than the teacher did.
S1:	The teacher gives useful feedback on my work.	
S2:	The teacher encourages me to assess my work and improve.	
T:	Takes on new ideas.	More teachers saw students taking in new ideas than students thought they had time to develop new ways of thinking.
S1:	I get time to think and talk about how I'm learning.	
S2:	We get time to think about ideas and problems in new ways.	
T:	Takes full part in a group working together.	There was a trend for more students to think this than teachers.
S:	I work with other students on group tasks.	

Whereas teachers of English and most enjoyed classes were less likely to report behaviours they needed to infer than were the students, teachers of least enjoyed classes were *more* likely than students to see evidence of learning. This doubtless reflects students' more negative views of these classes, but perhaps also suggests some unwarranted optimism that all was well on the part of teachers.

Implications

Students do show different learning attitudes in different classes. Their teachers see them differently also. On the one hand, those who provide them with more engaging learning opportunities are likely to see more long-term positive learning outcomes; on the other, there was evidence that teachers in the least enjoyed classes were more likely to be over-optimistic about their current attitudes to learning, suggesting that they were misreading student behaviour.

Key competencies have an important "student voice" component, and successful early adopter schools have found ways to fully involve students in learning conversations about what these competencies look like and how they develop (Boyd & Watson, 2006). An advantage of more fully involving students in conversations about their own learning is that mismatches with teacher inferences about how well students are in fact learning could be minimised, allowing teachers to better engage students and provide more enjoyable classes (for both students and teacher). These results suggest that work on the key competencies introduced in the revised New Zealand Curriculum could benefit well from including the student voice, particularly in relation to some of the learning attitudes we have discussed here.

9. NCEA assessment opportunities, choices, and issues

In Chapter 3, we reported the overall NCEA results of the study participants, and the factors among our school, family, and leisure activities-related variables that were linked to different levels of results in the senior school qualification. This chapter takes a closer look at how students thought about and approached their NCEA work. We discuss our findings in the light of challenges that NCEA is not motivating, and that it allows students to make easy choices.

Differences in the design of NCEA assessments are briefly outlined to provide a context for student decisions related to NCEA. We then look at differences in teachers' experiences of students' NCEA behaviour in most enjoyed and least enjoyed subjects and in English, and the variables that were related to teachers' perceptions of student approaches to the NCEA.

The role of NCEA and students' views of their subjects

The possibility for students to make decisions about which assessments they will undertake (at least in theory) has been a controversial feature of the NCEA. Early in the implementation phase of NCEA, some teachers were already concerned that students could choose to skip assessments (Hipkins et al., 2004) but other teachers actively helped students decide which assessments to skip as a means of managing their workloads. This controversy is interesting for several reasons:

- Although student decisions about whether or not to tackle assessments are more visible now than in the past, they are not new. Students could and frequently did leave out whole sections of examinations. Whereas in the past the consequence would simply be fewer marks from an overall possible total, aspects of a course in which students have chosen not to be assessed are now more apparent.
- Granting students agency to make considered choices about the assessments they will undertake can (again in theory) help them tailor an NCEA qualification to fit their personal learning pathway, rather than shaping up to a "one size fits all" qualification designed by others.
- If this agency is taken up by the student, with appropriate support and advice provided to help them choose well, they could be developing greater autonomy and aspects of lifelong learning skills in the process.

At the moment, however, these arguments seem rather academic. The Learning Curves research suggested that students were not skipping assessments as often as teacher concerns had led us to believe. In this study, we were interested to know if students were doing this, why they were doing it, and how they were making decisions. They were asked to respond to the following three statements about their most enjoyed and least enjoyed subjects and English.

In this subject:

- we can choose what assessments we want to do for NCEA
- the NCEA credits are easy to get
- I will get lots of NCEA credits in this class.

These items have already been discussed in the two previous chapters as part of the student factors *attitude to work* and *relevant learning opportunities*. They are repeated here to frame the picture of participation in NCEA that follows. The next table summarises the results, showing the percentage of students who agreed or strongly agreed with each statement in each type of subject. Very few students appear to think they can make an overt and considered choice about which NCEA assessments they will do, either in English or in their most enjoyed or least enjoyed subjects.

Table 66: Students' NCEA expectations in different subjects

Statement	% students who agreed or strongly agreed		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
Expect to get lots of NCEA credits	71	35	32
NCEA credits easy to get	52	24	24
Can choose NCEA assessments	17	10	14

The largest percentages in each line are shown in **bold**.

NCEA and subject enjoyment and choice

Taken on their own, it would be easy to read the second two statements on the previous table as indicating that subjects are most enjoyed if they build an easy route to NCEA success. However, we have already seen that students seldom say this is why they chose subjects in the first place. They choose them because they are interesting to them, or serve a purpose for their future aspirations.

Students' most enjoyed classes are ones in which they experience dynamic and interesting learning, with a teacher who holds high expectations of both their effort and ultimate NCEA success. It is likely that we see this reflected here in the students' anticipation that they will get credits, and get them easily, when they are highly engaged in a positive learning environment.

Since we knew the names of students' most enjoyed and least enjoyed subjects, it was also possible to check whether any particular subjects were more likely to be seen as a source of easy credits, or of lots of credits. No significant associations were found, suggesting that it is not subjects *per se* that are influencing expectations. Again this tends to reinforce the view that it is the nature of learning experiences, and learning success, that are influencing the patterns found here.

Achievement or unit standards?

No picture of a student's NCEA behaviours and choices is complete without reference to those choices that teachers and schools make on their behalf. When discussing students' choices, it is unfair to attribute agency to them for things over which they have no control. A specific example of this concerns the choice of whether their learning is to be assessed with achievement or unit standards. Assessment with unit standards has been seen as an indicator of a student's desire to take the easy way through school (Meyer, McClure, Walkey, McKenzie, & Weir, 2006) but the choice of which standards to use in individual courses and other aspects of assessment are in fact decided by the school, and often by individual teachers within the school.

As part of the course design process, teachers select the type and number of standards they think will be appropriate for their students' assessment. Sometimes this choice is determined by overall school policy, sometimes it is a free choice, and more often a mix of the two. The Learning Curves teachers were aware that many people see unit standards as inferior to achievement standards but they tended to take a much more sanguine view, and to value being able to choose the best assessment tool for the circumstances (Hipkins et al., 2005). There is a widespread perception that unit standards are always easier to achieve but this is not necessarily so. English teachers, for example, often include the unit standard for "wide reading" because this is something they value and there is no equivalent achievement standard. Full suites of "academic" unit standards were developed early in the National Qualifications Framework (NQF) years, and they still remain on the framework. In the Learning Curves schools other teachers besides the English teachers also selectively chose from amongst these to fill gaps in their programmes, or to feature aspects they thought were better assessed by the unit standard than the equivalent achievement standard (Hipkins et al., 2004).

The next table shows differences we found in the mix of assessment instruments being used in most enjoyed and least enjoyed subjects and English. English was most likely to be assessed mainly with achievement standards, or a mix of achievement and unit standards. Most enjoyed subjects were only somewhat more likely than least enjoyed subjects to be assessed mainly with unit standards. Thus there is no evidence that what makes enjoyed subjects enjoyed is that they use unit rather than achievement standards.

Table 67: Assessment standards in different subjects

Mix of achievement standards (AS) and unit standards (US)	% teacher responses		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
Mainly with AS	65	**73**	63
Mix of AS and US	8	**15**	13
Mainly with US	**25**	11	19
Other qualification	< 1	1	2

The largest percentages in each line are shown in **bold**.

Resubmission for internal assessments

Taking up opportunities to resubmit work for internal assessments is another aspect of behaviour that could inform the motivation question. Not all schools offer this chance and not all students need it. However, where it is offered, critics have suggested that students are enabled to do a minimal amount of work on the first attempt, knowing that they can get a lot of feedback and improve on the second try. Both teacher and student data from this study suggest that this possibility is not as widely exercised as that criticism would indicate.

Reassessment opportunities were most likely to be offered in English (78 percent). They were offered in 64 percent of the most enjoyed subjects and 63 percent of the least enjoyed subjects. The lack of difference between most enjoyed and least enjoyed subjects suggests that options for reassessment are not a deciding factor in students' nomination of most enjoyed subjects. This is an interesting finding given that the option for reassessment is seen by some NCEA critics as another aspect that encourages taking an easy path through learning. However, teachers of students' most enjoyed subjects were more likely to say that the student had

taken up opportunities offered for reassessment, and that the outcome was that the standard was achieved on the second attempt. This matches teachers' generally more positive reports of students' NCEA behaviours in the students' most enjoyed subjects.

Students were mainly offered reassessment when they did not get a standard (91 percent of those teachers who offered this); they could also be offered reassessment when they had not done a standard they could do (34 percent), and to improve from an "achieved" level to merit or excellence (31 percent overall), and far more in English (39 percent) than in classes that were students' least enjoyed (28 percent) or most enjoyed (25 percent)).

Yet few of the students said they had in fact been offered reassessment opportunities, and only 27 (6 percent) had used these opportunities:

- 19 students (2 percent) said they had been offered a reassessment opportunity in English and 14 of them took this up.
- Six students said they had been offered a reassessment opportunity in their most enjoyed subject and four of them took this up.
- 13 students said they had been offered a reassessment opportunity in their least enjoyed subject and nine of them took this up.

Skipping assessments

The extent to which Learning Curves students said they had personally skipped one or more assessments broadly matched teachers' views of how likely it was that students would do this (see below). Often the students simply reported that they knew others who had skipped, while they personally felt they could not afford to squander any chance to gain credits. This feeling probably abated as students' confidence and experience with the NCEA grew. In the final year of Learning Curves, a quarter of the Year 11 survey students had skipped at least one assessment, a third had done so by Year 12, and 40 percent by Year 13 (Hipkins et al., 2005).

As the next table shows, Competent Learners' self-reported skipping of Level 1 standards is even lower than we might have anticipated, although some students said they could not remember or did not sit internal NCEA assessments in this subject. Responses to skipping external assessments referred to standards for which students had been entered but did not sit. Only Year 12 students could respond to this since students in Year 11 had yet to face external examinations for the first time when we interviewed them. Skipping external assessments was also infrequent. Note that though we report the figures in relation to their Year 12 classes, the figures refer to comparable subjects at Year 11, and it may be that there would be some differences related to the nature of their Year 12 class had we been able to gather information on the external assessments associated with Year 12.

Table 68: Students who said they missed a planned assessment event

Assessment decision	% response in three subjects		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
Did not skip any internal assessments	**88**	81	84
Skipped an internal (Years 11 and 12, n=421)	3	**10**	7
No response re internal assessments	< 1	< 1	< 1
No NCEA, or not sure	9	9	9
Did not skip any externals in this subject in year 11 (Year 12 only, n=163 for least enjoyed class)	**95**	87	90
Skipped an external in this subject in Year 11	4	**13**	10
No response re external assessments from those who took the subject in Year 11	1	< 1	< 1

The largest percentages in each line are shown in **bold**.

Numbers do not add exactly to 100% because of rounding.

Where we had the necessary records, we checked students' responses to the question of whether they had skipped any English assessments against their NZQA Record of Learning. For 80 students, we were able to count all entries coded V (standard not attempted), Y (student absent), and Z (missing paper) for a Level 1 English achievement standard. It would have been a laborious manual task to check the most enjoyed and least enjoyed subjects since there were so many of them and there was no self-evident *subject* differentiation in the system of numbers that identifies specific achievement standards. At the time the analysis was done a mapping of codes identifying standards to subject areas was not available, but such mappings have subsequently been developed and can now be accessed by researchers.

Despite these limitations, this check suggested that students considerably under-reported their skipping of assessments. The students who had admitted to skipping an external assessment in English had a mean number of 4.82 credits coded V, Y, or Z with a range of 3–12 credits. This suggests some left just one standard in an examination while those at the 12 credit end skipped the entire paper. What about the students who said they had not skipped? Here the mean was 4.62 credits coded V, Y, or Z with a range from 2–14. It may be that students who left one aspect of the examination did not see themselves as skipping overall. However, those who had 14 credits coded V, Y, or Z must surely have been aware that they should have said they had skipped.

Patterns of skipping internal assessments

With the cautionary caveat that these data are almost certainly under-reported, we now look at self-reported patterns of skipping internal assessments. Very few students said they had skipped more than one internal assessment in English or in their most enjoyed subject, but it was almost as common to skip two or more as to skip one assessment in the least enjoyed subject—though the overall numbers were still low.

Student and teacher comments during the Learning Curves project gave us insights into the sorts of influences and events that could lead students to skip an assessment. We used these insights to shape a list of reasons to which the Competent Learners project students responded on a 4-point Likert scale: strong influence; some influence; not much influence; no influence at all. Some reasons (for example "had too many assessments at the

same time" or "it was too much work for the number of credits") might constitute a careful balancing of options when under pressure, but then again they might also be decisions made on the spur of the moment. Students who are absent for one-off internal assessment events are unlikely to be offered another chance, and so we included that as a reason. Of course some students may stay away deliberately, in which case the real reason for missing an assessment could lie elsewhere. Numbers of responses were too low to report as frequency data but broadly the *trends* were as follows:

- Two reasons stood out: "assessed a skill I was not confident in" and "I didn't want to do task involved". More students said they skipped for these than any other reasons, especially in their least enjoyed classes and in English. What is interesting here is that both reasons imply a level of personal responsibility for the choice.
- Students who skipped an assessment in their least enjoyed class tended to be more likely to pick reasons that can sound like excuses—the focus was not on them and their behaviour: "part of subject assessed was not important". "assessment task was not easy enough". "it was too much work for the number of credits". "had too many assessments at the same time"; "wanted to do it but away at the time".
- Very few students gave as a reason for skipping an assessment in English or in their least enjoyed subjects that they "had enough credits already" whereas several students said this for their most enjoyed subject. As we have seen, students anticipate readily gaining the credits they need when they are enjoying their learning.

The Learning Curves research found that avoiding the likelihood of failure or potentially embarrassing assessments such as speeches in English could be reasons to skip assessments. As anticipated we also found that the most commonly skipped type of English assessment was a speech or soliloquy. However, about a third of those who skipped in English avoided completing a research project—this might have been more to do with effort expended for credits gained. A quarter of students who skipped an English task chose not to do creative writing, which again is a performance of sorts. Reasons for skipping assessments in a most enjoyed subject were evenly divided between avoiding a performance and not completing a research task, and in the least enjoyed subjects almost every case involved a research task of some sort.

Patterns of skipping external assessments

Reasons Year 12 students gave for skipping external assessments mainly related to fear of failure: "I didn't think I would pass the assessment"; "I did not study for that part"; "I couldn't do it". More students said they found it difficult to pace their time in the English examination than in their other subjects. By far the most common type of skipping in English was leaving some sections of the examination blank. Just five students said they chose not to go to the examination, or could not go because of illness/accident. We found a similar pattern for students' least enjoyed subjects. Too few students skipped externals in their most enjoyed subjects for any pattern to be apparent.

Students' tracking of their accumulating credits

There is another possibility to consider in relation to skipping assessments. If this is not a considered choice, it could be an impromptu choice, especially if there are no perceived consequences since students are likely to be offered far more credits than they need to succeed in NCEA. How carefully, then, did the students track their growing credit totals?

As well as obtaining results from NZQA for 256 of the students, we asked them to tell us how many Level 1 credits they had gained overall during their Year 11 studies and we checked what they said against their NZQA record for English. As the next table shows, many students responded to this question with reasonable accuracy, and those with the highest scores were most likely to be accurate in their recall.

Table 69: Match between NZQA records and students' recall of NCEA credits gained in English during 2003/2004

Credit total recorded by NZQA	% of students who accurately reported that total (*n* = 256)
20+ credits	88
15–19 credits	64
10–14 credits	56
Under 10 credits	69

The students who said they could not remember how many credits they gained are potentially an interesting group to explore. In the Learning Curves project we noted that students who are only loosely aware of how many credits they have gained, and who have no particular strategy for choosing which assessments they will undertake, are also very likely to:

- be interested only in the number of credits on offer and whether these are a fair trade for the work involved in passing
- see no qualitative difference between unit standards and achievement standards ("credits are credits")
- avoid the possibility of failure by skipping assessments they do not feel confident of passing (Hipkins et al., 2005).

These are the types of beliefs and actions most likely to be cited by critics who believe NCEA encourages students to find the easiest possible pathway to a qualification (Meyer et al., 2006). Such beliefs and actions are not, of course, limited to students who do not track their credits, but they were almost always a feature of the thinking of this group. So what patterns did we find for our Competent Learner sample?

First, the numbers who said they could not remember how many Level 1 credits they got are relatively low, even for students in Year 12 when the data were gathered, who needed to think back to the previous year. Both overall and Year 12 only data are shown in the next table.

Table 70: Students who could not remember how many Level 1 NCEA credits they had gained

Subject	All students (*n* = 421) %	Year 12 students (*n* = 261) %
English	10	15
Most enjoyed subject	4	6
Least enjoyed subject	9	14

Very few students could not recall the number of credits they gained in their most enjoyed subject, even in the following year. English, which is compulsory in Year 11, follows a similar pattern here to least enjoyed subjects, although even for these the numbers are relatively low. This pattern provides one more piece to the picture that links learning and assessment behaviours to students' perceptions of the quality and enjoyment of their learning experience.

Teacher view of *student approach to NCEA assessment*

How do teachers see students' motivation in relation to their NCEA choices? Thirteen items made up the factor *student approach to NCEA assessment*. Teachers' responses for these items are shown in the next table. All 13 items showed significant differences between most enjoyed and least enjoyed subjects, or in the case of the final two items, between English and the most enjoyed subjects. This is congruent with the students' reports of being more likely to skip assessments in English, as outlined above.

Note the relatively low percentage of teachers who think students do the bare minimum or are not interested if there are no credits to be gained. This is a very different picture from the claims of widespread demotivation painted in negative media articles. It is food for thought that behaviours that seem to signal motivation challenges, which are commonly attributed to the design of NCEA itself, are more often identified by teachers of least enjoyed subjects, and that these stand in strong contrast to the much more positive and optimistic observations of teachers in most enjoyed subjects. This adds to the theme which comes through this report in a number of sections, that students do engage more in learning in classes that are taught in ways that encourage that engagement.

Table 71: Teacher responses for the factor student approach to NCEA assessment

Aspect of practice	% teachers agree/strongly agree		
	Most enjoyed class (*n* = 418)	English class (*n* = 415)	Least enjoyed class (*n* = 417)
S/he can cope with pressure of internal assessments	**69**	64	54
S/he is realistic about likely achievement in assessment tasks	**68**	57	60
S/he always tries to learn from my feedback on trial assessments	**63**	59	50
S/he is organised and well prepared for assessments	**61**	52	43
S/he uses time well in assessment tasks	**59**	49	46
S/he works hard regardless of whether a topic is assessed or not	**57**	44	36
S/he is able to cope with the pressure of external assessments	**55**	47	43
S/he always strives for excellence	**47**	38	30
S/he typically questions judgements and grades awarded	**24**	15	15
S/he does the bare minimum to get credits (r)	20	29	**35**
S/he is not interested in the work if there are no credits to be gained (r)	15	23	**26**
S/he makes impulsive decisions not to do assessments	8	**12**	9
S/he makes strategic decisions not to do assessments	5	**9**	8

The largest percentages in each line are shown in **bold**.

(r) The item scale was reversed when the factor scale was calculated

In contrast to patterns of differences found for opportunities to learn, almost no differences were found for mathematics and science teachers' responses. It seems that teachers' experiences of students' NCEA behaviour are relatively similar regardless of the subject. What is more likely to make the difference is whether a subject is seen by the student as *most enjoyed*. In those cases the teacher is likely to hold a positive view of that student's choices and attitudes to NCEA.

Teachers' views of how well they thought individual students were approaching NCEA were highly correlated with how they also thought students acted in their class as a whole; and more correlated with that than with the total number of Level 1 NCEA credits gained by that student, or their cognitive composite level. Students who engaged in risky behaviour—and were disengaged in school—were likely to have a lower rating for their approach to the NCEA work. There was a moderately strong correlation between teachers' views of an individual student's approach to NCEA with that student's own reports of their engagement with school, their views of their teachers and what happened in their classes (the correlation with their view of their relationship with their teacher was slightly stronger than with their view of class practices), and their own level of intrinsic motivation. This adds to the indications from earlier chapters on achievement and engagement that students do respond to what is offered to them currently: their "assessment identity" draws on their past, and the weight they put on school, but this identity is also open to current positive learning experiences.

Table 72: Correlations between teachers' views of student approach to NCEA and other variables

Measure	Approach to NCEA
Focused & responsible	**0.91**
Thinking & learning	**0.82**
Teacher view of overall ability	**0.79**
Social skills	**0.65**
Number of Level 1 NCEA credits	**0.64**
Attitudinal composite 14	**0.62**
Cognitive composite 16	**0.50**
Engaged at school	**0.50**
Cognitive composite 14	**0.50**
Affirmed at school	**0.43**
Attitude to work	0.39
Positive about teachers	0.35
Internal markers of learning 16	0.33
Parent view of responsibility	0.33
Absorbed in learning	0.32
Positive about class	0.30
Disengaged in learning	-0.41
Friends with risky behaviour	-0.44
Risky behaviour	-0.49
Social difficulties	-0.58

Correlations stronger than ± 0.4 are shown in **bold** face.

Implications

Although NCEA has given some more flexibility about when students tackle the assessments of their work that contribute to the senior school qualification, students in this study did not seem to be making continual choices of whether to try for a standard or not. They were working within the framework of the courses they took, and therefore were not able to decide what kind of standard they might take (leaving aside the question of whether unit standards are easier than achievement standards). From the data we have in this study, we could not see any empirical confirmation that students were opting for ease at the expense of challenge, or the expense of qualifications that would leave all viable pathways open. As in the previous qualification regime, they were sometimes avoiding those assessments or parts of assessments where they felt least confident.

Students were more likely to skip assessments in their least enjoyed subjects. Students were most confident about getting lots of NCEA credits in their most enjoyed subjects, but we did not analyse the number of credits they gained in each of the subjects they told us about, so we do not know how their performance in NCEA compares across subjects. Certainly, we continued to see that students were responding differently in their most enjoyed and least enjoyed subjects; and from our data, what differentiates these is more to do with teaching practices than with the kinds of NCEA standards offered. Our data suggest that to make the most of NCEA, teaching practices are worth attending to as much as the structure of the qualification and the ways in which assessment occurs.

10. Parents' views of their children's course choices and NCEA experiences

We asked parents a number of questions about their children's choice of courses, and how their child was responding to the NCEA. We also asked questions to see how parents understood the new choices and challenges of the NCEA regime.

The 2006 *NZCER National Survey of Secondary Schools* found considerable uncertainty amongst parents concerning various aspects of NCEA, with around half of the responding group saying they did not understand the changes (Hipkins, 2007). This is concerning because parents are (or could be) in the frontline when it comes to supporting students as they study in the senior secondary school. The sense they make of ways they can do that is of interest to us here. For example, parents will often provide support, or ask for change, if they perceive that the school is putting too much pressure on their child. One of the criticisms of NCEA is that the constant assessment makes it difficult for students to meet all the demands placed on them. Stressed students are likely to communicate this to their parents, either directly or indirectly, so this was an issue we explored.

Parents will have their own perspectives on motivation issues in relation to NCEA and these have not been described in the context of specific students' actual learning progress in any other research that we are aware of. The Competent Learner parent interviews afforded an opportunity to explore this complex issue for the first time.

This chapter addresses the following questions:

- Do parents' perceptions of the influences on their child's subject choices match those of the students?
- How do parents understand their own child's motivation in relation to NCEA choices and study patterns?
- What are parents' views of the ways students are managing any assessment pressures?
- How do parents' views align with their own child's achievement record?

Parents' view of students' subject choices

We asked parents what they thought was important when deciding what subjects or subject options their child would take. The next table shows the frequency with which each item was selected. In cases where the wording was the same, or substantially so, the table compares parents' responses with the students' perceptions of influences on their choices. A quarter of the parents (26 percent) selected one influence, 34 percent selected two influences, 20 percent selected three, and another 20 percent selected more than three different influences on subject choices.

Where the parent and student lists overlapped there is remarkable agreement between the two sets of responses. Career and personal interest were conflated in the student survey, but were separate items in the parent survey. This doubtless accounts for the difference here. Personal interest was the influence most frequently selected by both parents and students. And again, as for the students themselves, we see that the prospect of gaining "easy NCEA credits" is seldom seen by parents as an influence on subject choices, though taking a subject which was not thought to be too demanding was thought to influence some subject choices.

Table 73: A comparison of parent and student perceptions of subject-choice influences

Factors influencing decision	% mentioning this factor	
	Students (*n* = 421)	Parents (*n* = 403)
Students' own interests	82	73
Leads to career	–	43
Took subjects that continued on from last year	29	29
Took easy subjects/student could cope	23	23
Leads to next year's options	–	19
Leads to tertiary qualification	–	16
Discussion with friends	8	4
Had no real choice/had to prioritise	7	6
Information from school, e.g. course booklet	4	1
Teacher reputation	3	6
The options available	–	6
Advice from others familiar with school	–	4
Prospect of easy NCEA credits	2	3
Fitted timetable	–	3

Cells marked — represent items in the parent survey but not in the student survey.

Given the considerable lengths to which schools go to provide subject choice advice it is interesting that 57 percent of parents said they had not talked to anyone at the school about subject options.[32] However, most of the parents who had talked to the school said the advice was helpful (84 percent of this subgroup).

Thirty-two percent of parents said their child was taking a subject they would like to change or had changed during the year. This is very close to the 27 percent of students who were not happy with their choices and said they needed more guidance. Reasons for wanting a change mostly centred around the difficulty of the work (12 percent) and the student not succeeding (5 percent). Poor teaching was cited by 10 percent of parents, compared to just 3 percent of students. It may be that students do not feel empowered to ask for changes on these grounds, while their parents are on the receiving end of any discontent. (In a different question, 40 percent of parents said their child talked to them about teachers.)

Nine percent of students said they were now more aware of what they wanted to do, which is similar to the 5 percent of parents who cited the need to change to a subject that would lead to the tertiary course to which their child now aspired.

[32] Though 84 percent said they felt welcome in their child's secondary school.

Parents' views of NCEA assessment methods

We asked parents if they thought that the NCEA way of assessing is better than the former system. Their responses, shown in the next table, are divided between agreeing that NCEA is better and either disagreeing or not being sure.

Table 74: Parents' views about whether NCEA is a better method of assessment

Response	% (*n* = 403)
Yes	49
No	24
Not sure/depends	24
Don't know former system	2
Child not doing NCEA	1

As in other research NZCER has recently conducted there is considerable uncertainty among parents as to whether NCEA is a "good thing" or not (Hipkins, 2007). This is not surprising in view of the different premises that underpin a standards-based assessment system, compared to a traditional norm-referenced, examination-based system. Other research has highlighted the very different ideological positions that can, either tacitly or explicitly, inform very different views of NCEA (Dobric, 2006). What sorts of factors might have influenced the divided views of these parents? We asked them to give reasons for their responses to the general question about the value of NCEA assessment, and the next table compares positive and negative aspects of their reasoning. The items on the table have been juxtaposed to highlight that what is seen as positive by some may be seen as negative by others.

Table 75: Parents' reasons for their opinions about whether NCEA is a better way of assessing (n = 403)

Positive reasons	%	Negative reasons	%
Able to see progress and accumulate credits across year	48	Too much assessment and not enough teaching	6
Gives more chance to succeed	26	Doesn't reward effort	11
Improves work and study habits	18	Higher workload	3
More challenging	6	Less demanding, challenging, motivating	18
		Hard to know how to improve grades	11
		Course fragmentation	8
		Different standards at different schools	4

Interestingly, for all but one reason (whether NCEA is more or less challenging) support for the positive version outweighs support for the negative version of a reason. There are, however, more negative *types* of reasons overall, especially when the responses in the "other" category are taken into account (36 percent of parents gave "other" responses). Most frequent of these was that percentages provide a better gauge of ability (9 percent). This

view is likely to relate to the familiarity of norm-referenced judgements, where students are distributed along a Bell Curve of achievement, and assessment marks are adjusted as necessary to obtain the required distribution. As we have noted elsewhere:

> It has been difficult for students, parents, and the public to shift from the seeming objectivity of percentage scores that allowed easy comparison between students, to a situation where students pit themselves against a standard. The *meaning* of assessment results seems less clear to people, even though actual learning outcomes are reported in some detail. Arguably this aspect of the NCEA needed to be more carefully explained, since it represents such a break from the shared experience of so many people. (Hipkins, Wylie, & Hodgen, 2007, p. 6)

As we saw in Chapter 3, students' collated NCEA data do correlate quite strongly with the Competent Learners study measures of competencies Thus it is clear to us that NCEA does provide an informative account of a student's overall achievement. At issue is how easy it is to glean a sense of this from the separate pieces of achievement data.

Some parents worried that marking could be subjective, ambiguous, unfair, or in error (5 percent), with a related concern that teachers might not be objective or competent to judge (1 percent). Five percent of parents were concerned about bad publicity, and wondered if this would impact on employers' acceptance of NCEA, while 1 percent said it was good for employers and easy to understand. Two percent thought NCEA is better for girls than for boys. Seven percent of parents reiterated that they did not understand the system and so did not know how to answer.

Parents' support for NCEA and differing student learning needs

We anticipated that differences of parental opinion might be attributed to the specific learning needs of their own child. Are parents of less academically inclined students more likely to say it gives their child a chance to succeed, and those whose child has always been a successful learner to say it doesn't reward effort? To address this question we cross-tabulated the parents' responses with the attitudinal and cognitive competencies of their children, with the child's subject cluster, and with maternal qualification levels, which is the social characteristic most closely associated with young people's competency levels. Overall views about the value of NCEA or concerns that it was less motivating or demanding were unrelated to student competency levels or subject clusters.

As anticipated, there was a trend for parents whose child was in the lowest quartile for cognitive competencies to be more likely to agree that NCEA is a better way of assessing learning and for those whose child was in the highest quartile to be more likely to disagree. However, those from families where the mother had no qualification were the least likely to select "being able to see progress as you go/accumulate credits better than one final exam" as a reason that NCEA is a better way of assessing.

Parents of students in the highest attitudinal and competency quartiles were the least likely to say the NCEA provides more chances to succeed, and the most likely to say it doesn't reward effort. Along with parents of students in the third competency quartile, they were also the most likely to say it is hard to know how to improve grades with NCEA. Parents from families where the mother had a university degree were the most likely to say NCEA doesn't reward effort, to express concerns about course fragmentation and to think there was "too much assessment—not enough teaching" with NCEA.

There has been considerable discussion in the media about whether NCEA disadvantages boys. This seems to turn around two main assumptions: boys are more motivated by competition, and boys prefer one concerted effort at examination time because they are not as organised to pace themselves for continuous study. In this Competent Learners study, there was a trend for female parents to be more likely to agree that the NCEA way of

assessing is better and for male parents to say "not sure/it depends". Congruent with the media arguments, parents of girls were more likely to agree that NCEA improved their daughter's work and study habits. There was a trend for them to also agree more often that an advantage of NCEA was "being able to see progress as you go/accumulate credits better than one final exam". There was a trend for responding male parents to be more likely than female parents to think the NCEA is less "demanding/ challenging/motivating". We checked whether female students were more likely to be represented by female parents and vice versa, but this was not the case.

Parents of students in the "traditional arts" subject cluster were more likely to say it was hard to know how to help their child improve their grades or that NCEA did not reward effort, while those with a child in the "traditional science" subject cluster were more likely to say it had improved their child's work and study habits.

It will be interesting to see if the recently announced changes allowing for the awarding of NCEA with merit or excellence will be seen by parents of higher achieving students as addressing their concerns about recognition for effort; this change does not address the concern about fragmentation of learning. Hipkins (2007) discusses perceptions of curriculum and over-assessment issues in more detail.

Parents' views of their child's motivation

The above discussion draws attention to views about the motivational aspects of the NCEA. Assessment for qualifications has long been used to motivate students in the senior secondary school, so this issue is not new, but some aspects of the NCEA have altered the ways it plays out in schools. Parents were asked to respond to a few Likert-scaled statements about the factors that motivated their child's NCEA decision making.

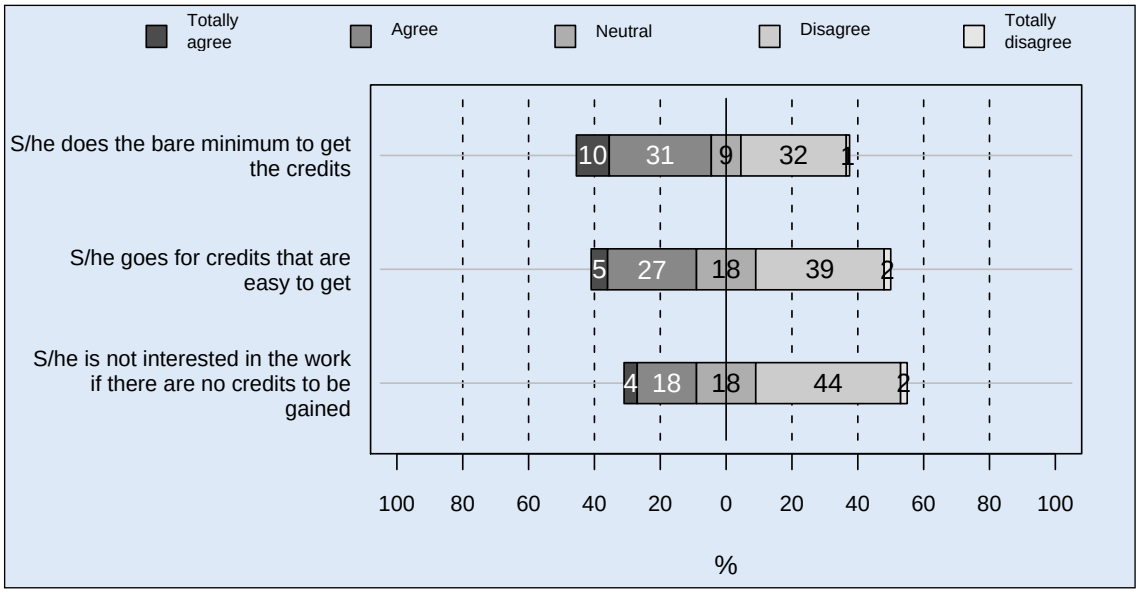
We also asked parents whether their child was generally positive about the NCEA. Sixty-nine percent said they were; 19 percent expressed a neutral view; and only 11 percent said their child was not generally positive about the NCEA.

As might be expected, parents whose personal view was that NCEA is *not* a better way of assessing were also more likely to disagree or strongly disagree that their child was generally positive about NCEA. Family attitudes tend to be shared. There was a trend for more parents of girls, and for female parents, to totally agree their child was always positive about NCEA, while parents of boys, and male parents, tended to select the less emphatic "agree" response.

The role of credits

We drew on the most common motivation-related criticisms of NCEA when shaping the statements in the next figure. In the responses we see that around two-fifths of the parents (41 percent) were of the view that their child would do the bare minimum necessary to gain credits. This is a more pessimistic view than that held by teachers (28 percent). A third of the parents (32 percent) thought their child would attempt credits that were seen to be easy to get. But only around a fifth of the parents thought their child was not interested in study for which no credits could be gained.

Figure 10: Parents' views of the role of NCEA credits in their child's work



Again we found that these differences of opinion were linked to the different learning needs of each parent's child. Parents whose child was in the lowest quartile for the cognitive or attitudinal competencies were more likely than all other parents to agree or totally agree their child would do the bare minimum to gain credits, that they were not interested in the work if there were no credits to be gained, and that they would try for credits that are easy to get.

Parents whose child was in the "contextually oriented" subject cluster were more likely to agree or totally agree the child did the bare minimum to get credits. Along with parents of students in the "vocational" cluster, they were more likely to agree their child was not interested in work if there were no credits to be gained, and that they attempted credits that were easy to get.

The same picture emerged in relation to maternal qualification levels. Parents from families where the mother had a university qualification were the most likely to disagree or totally disagree that their child would attempt credits that were easy to get, and along with those from families where the mother's highest qualification was at the tertiary level, were the most likely to disagree or totally disagree that their child did the bare minimum to gain credits.

Here the gender difference also comes into view more sharply. Parents of boys were more likely to agree or totally agree that their child did the bare minimum to gain credits, that they were not interested in work where there were no credits to be gained, and there was a trend for them to agree that their son went for credits that were easy to get.

Making an effort

Just over half the parents thought their child would work hard regardless of whether a topic was being assessed or not, and 42 percent thought their child always strove for excellence.

Parents whose child was in either of the highest two quartiles for attitudinal competencies were more likely to agree that their child would work hard whether the topic was assessed or not, and that they always strove for excellence. Parents who *strongly* agreed with both these statements were more likely to have a child in the highest attitudinal quartile. The association with the statement "always strives for excellence" also held for being

in the highest quartile for the cognitive competency but there was no significant association for "works hard whether the topic is assessed or not".

Parents of students in the "traditional arts" cluster were more likely to agree or totally agree that their child always strives for excellence, and that they would work hard whether the topic was assessed or not. Parents of students in the "traditional science" cluster were more likely to agree with this statement.

As might be anticipated from the responses outlined above, parents of boys were more likely to be neutral, or to disagree or totally disagree that their son would work hard whether the topic was assessed or not, or that he would always strive for excellence.

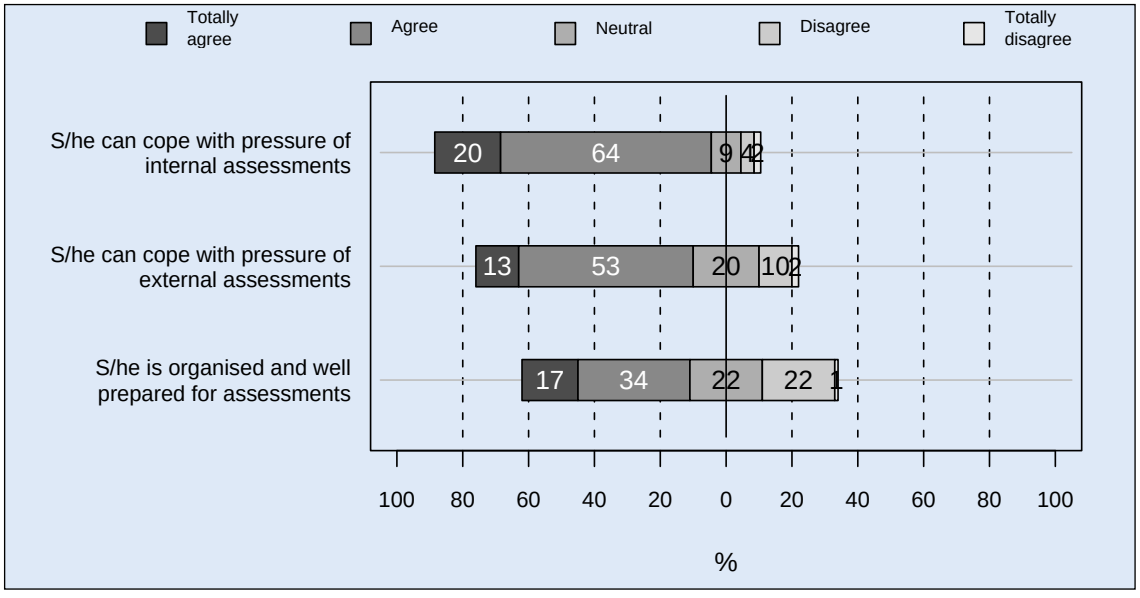
Again, it will be interesting to see if recently announced changes, allowing for the award of an "NCEA with excellence" or an "NCEA with merit" can influence the 30 percent who are not seen by their parents as currently striving for excellence for its own sake.

Parents' views of NCEA-related work pressure

Given commentary in the media about endless assessment pressures on students since the inception of the NCEA, we were somewhat surprised to find that 81 percent of parents did *not* think the NCEA had caused more stress than expected at assessment time. Just 12 percent said it did, and another 5 percent said the stress level varied.

As the next figure shows, just 6 percent of parents saw their child as not coping with internal assessment pressures. This number increased to 12 percent, which is still a low level of concern, in relation to external end-of-year assessments. Somewhat more parents (23 percent) saw their child as not well organised and prepared for coping with the ongoing flow of assessments.

Figure 11: Parents' views of students' ability to cope with assessment pressures



It is interesting that a lot more parents were unsure about the pressure of externals, or about the extent of their child's organisation and preparation than were unsure about coping with internal assessments. Since these happen one at a time, and throughout the year, it may be that they are more likely to be a subject of conversation at home. Supporting this suggestion, the most common item of school-related conversation

between a parent and child was the work done at school, including actual achievements and assessment (54 percent of parents said they talked about this). Next most common topics were social activity and friends (46 percent), followed by teachers (40 percent).

Performance-related patterns were similar to those reported in relation to attitudes to credits and working hard regardless of whether something was to be assessed or not. Parents of students in the highest quartile for both cognitive and attitudinal competencies were more likely to totally agree their child was well organised and prepared for assessments, and that they could cope with the pressure of both internal and external assessments. Parents of those in the lowest attitudinal and cognitive competency quartiles were more likely to disagree or totally disagree that their child was well organised and prepared for assessments. They were also more likely to simply agree or to be neutral on the question of whether their child could cope with the pressure of internal assessments and to be neutral (and in the case of cognitive competencies to disagree) that they could cope with the pressure of external assessments.

Parents of students in the "traditional arts" subject cluster were more likely to totally agree, or along with parents in the "traditional science" cluster, to agree, that their child was well organised and prepared for assessments. This was also true of parents from homes where the mother had a university qualification. "Traditional arts" cluster students' parents were also more likely to agree or totally agree that their child could cope with the pressure of external assessments.

Some gender differences were apparent. Parents of girls were more likely to agree or totally agree that their daughter was organised and well prepared for assessments, and to totally agree that they could cope with the pressure of internal assessments. (Parents of boys were more likely to just "agree" with this.) The flipside of this is more girls may be getting more stressed than expected around internal assessments—17 percent of girls' parents compared to 8 percent of boys' parents thought this. There were no gender-related differences in response to the item about coping with the pressure of external assessments.

Skipping assessments as a coping strategy

Very few students said they had skipped assessments. The picture from their parents is somewhat different. Twenty-one percent of parents said they were aware of their child skipping NCEA assessments, and in half these cases (11 percent) they had discussed this in advance, suggesting it was a considered choice.

Just as the students said they skipped because they didn't expect to pass, more parents gave this as a reason than any other, albeit just 3 percent said this. Two percent said the student had skipped because they didn't need the credits. This is hardly suggestive of the widespread practice some critics of NCEA have suggested. Other reasons, given by either 1 or 2 percent of parents included: leaving study too late; being in poor health; clash with an event such as a sports trip; family away; not wanting to do the task (e.g. public speaking); timetable mix-up; and prioritising to manage time.

Parents of students in the highest quartile for attitudinal competencies were more likely to say they were not aware of their child skipping any assessments and those in the lowest quartile to be more likely to say they were aware their child had done this. There was a trend for the latter group to also say they had not been aware in advance that their child was planning to do this—suggesting that for some students in the lowest attitudinal quartile it was more likely to be a spontaneous decision than a planned one. There was a trend for parents of boys to be more likely to say that their son had not discussed a decision to skip in advance of doing so.

There was a trend for parents from families where the mother had a university qualification to say they were not aware of their child skipping any assessments.

Patterns of opinion about NCEA

How were the parents' responses to each of the questions about NCEA inter-related? There were patterns of relatively strong associations between some of the responses, most notably:

- A parent reporting that a student always strove for excellence was likely to also report that the student worked hard whether the topic was assessed or not, was organised and well-prepared for assessments, and that they did *not* do the bare minimum to get credits, or show lack of interest in work if no credits were to be gained. In fact, the responses to all of these questions were moderately to strongly inter-related. This would suggest that intrinsic motivation is not negatively affected by the NCEA.
- A student perceived to be able to cope with the pressure of internal assessments was also likely to be perceived to be able to cope with external assessments. However, there was no relationship between being able to cope with pressure (or not) and going for credits that were easy to get, and only weak associations with all the other questions we asked parents about their child's approach to the NCEA.
- Parents who perceived their child went for credits that were easy to get were s*lightly* more likely to report that they also did a minimal amount of work, working only if credits were to be gained, and were *not* organised and well prepared for assessments. However, there was no association with how positive the child felt about NCEA.
- How positive the young person was perceived to feel about NCEA was *not* associated with any of the other responses.

These patterns taken together suggest that NCEA itself is not a strong factor in how students are motivated, or how they respond to external assessment on the day: that pressure may still be felt even when decisions have been made to take the easiest route to gain credits.

How parents see their supporting role

We asked parents about the roles they could play in supporting their child with NCEA assessment tasks. The next table shows that general encouragement is the main form of support, followed by supervision of study. Neither of these, or specific coaching (10 percent) is new to NCEA. Parents who know how to, and are inclined to do so, have always provided this type of assessment support to their children.

Table 76: Nature of assessment support provided by parents

Type of support	% (n = 403)
General encouragement	78
Monitor assessments to support time management/study	48
Provide specific coaching/revision	10
Advocate for student	7
Other	9

The main response in the "other" category was NCEA-related. Seven percent of parents said one form of support is to try to keep up with NCEA changes and to understand the system.

Keeping track of progress

It was an explicit intention of the NCEA that the assessment data generated would be more informative about students' actual achievements than the traditional single mark percentage total. As we have already seen, some parents still have more faith in the more familiar percentage mark, and 2 percent reiterated that view when responding to the question that follows.

What sense do parents of students in Years 12 or 13 make of their child's NZQA-generated Record of Learning (RoL)? Just 35 percent of parents said the RoL made sense to them and the student. Many did not answer this question (36 percent) and some had mixed views (12 percent) but 18 percent said no, the RoL did not make sense to them. The main reason was that it was complex and hard to understand (32 percent). Twelve percent of parents wanted the RoL to record what the student had failed—a change that was among those recently announced. Three percent said they had found inconsistencies in marking or results. On the other hand, 3 percent of parents volunteered that it was easy to understand and showed what their child had achieved, and another 2 percent said that, with older students in the family, they knew what to expect.

There are indications that parents' responses here are aligned with their child's overall performance and with their own experiences of the education system. Parents of students in the highest attitudinal and cognitive competencies quartiles, those from families where the mother had a university qualification, and those from high- and very high-income families were more likely to say the RoL did make sense to them. Those parents of students in the lowest quartiles for both sets of competencies, and those from families where the mother had no qualification were more likely to say it did not.

Is NCEA a "lightning rod" for concerns about progress?

There were interesting indications in the 2006 NZCER National Survey of Secondary Schools that NCEA might be acting as something of a "lightning rod" for both parents and teachers who are disaffected with some other aspect of education (Hipkins, 2007). Looking to see if we could find a similar effect in the Competent Learner research, we cross-tabulated parents' NCEA responses with a question that asked "Are you satisfied with your child's progress?"

Fifty-nine percent of parents said they were satisfied with their child's progress, much the same as when the students were in Year 10, but a little lower than the 69 percent who expressed satisfaction at Year 9. Twenty-two percent of the parents said their satisfaction with their child's progress was mixed; and 19 percent were not satisfied.

As we anticipated, parents who said they were satisfied with progress were also more likely to say they thought the "NCEA way of assessing is better for learning". They were also more likely to say this was because they could see the child's progress as they went along, or that it improved work and study habits. Congruent with this, parents who were happy with progress were more likely to say that their child's NZQA-generated RoL made sense to them.

However, it is important to bear in mind that 19 percent of parents who were happy about progress did not think NCEA was better for learning, and 14 percent, that it did not reward effort.

Every one of the Likert-scale items asking parents about NCEA was correlated with responses to the satisfaction statement. Parents who said they were *not* happy with their child's progress were more likely to agree or totally agree that their child:

- did the bare minimum to get NCEA credits
- was not interested in the work if there were no credits to be gained
- went after credits that were easy to get.

By contrast, parents who said they *were* happy with their child's progress were more likely to agree or totally agree that their child:

- would work hard whether assessed or not
- always strove for excellence
- was organised and well prepared for assessments
- could cope with the pressure of external assessments (and to totally agree they could do so for internal assessments)
- was generally positive about NCEA.

Parents in this group were also more likely to say they were not aware of their child skipping any assessments.

Collectively these results point to a pattern where involvement and being "in touch" with their child's learning was associated with an understanding and acceptance of NCEA. This lends support to but does not, of itself, confirm our "lightning rod" hypothesis. In our recent report on views of the NCEA drawn from the 2006 *NZCER National Survey of Secondary Schools* (Hipkins, 2007) parent worries about achievement are also correlated with negative views about factors that ostensibly have less to do with achievement *per se*, and more to do with aspects of NCEA such as its acceptance in the wider community and its perceived impact on curriculum.

These findings are a timely reminder that attitudes are shaped by *perceptions* at least as much as by actualities. For example, blaming NCEA for motivation challenges is not substantiated by the data presented in this report overall (see also Hipkins et al., 2007). Rather, motivation at the time students undertake secondary school qualification assessments is likely to be associated with competency levels and previous motivation levels; that is, with the learning and assessment identity of the individual (Ecclestone & Pryor, 2003), as this is shaped and evolves over time.

Implications

Although few parents thought their child was negative about the NCEA, the parents of our sample were divided about the value of NCEA. The big plus of NCEA was being able to see progress over the year, and have more opportunity to succeed; on the negative side, parents were concerned that it was less challenging, and less coherent (than the former "one size fits all" qualification).

Though parent views about the NCEA were mixed, most parents thought that their children were positive about it. Their views were mixed as to whether their child was interested in work that was unrelated to credits, and did the minimum required to get the credits (as they might have done in the previous qualification regime); or whether they would work hard regardless of whether a topic was being assessed and always strive for excellence. All but a small proportion of the parents thought their children coped with assessment pressures, both internal and external. Just over half also thought their child was organised and well prepared for assessments. Parents' views did not indicate that student levels of intrinsic motivation toward their work were negatively affected.

Some of the difference in parent views of the NCEA was related to how satisfied the parents were with their child's school progress. Parents who were satisfied with their child's progress were more likely to have positive views about the NCEA

The patterns of views here do indicate the importance of giving parents more information about the NCEA; they also suggest that views about the NCEA may be formed by things that are not to do with the structure *per se* of the new qualification.

Parent perspectives on the roles that credits play in relation to student effort give a mixed picture. It is somewhat different from the picture we get from students and teachers, but we also asked parents somewhat different questions. It would be good to understand more about the role of credits in relation to the kind of effort made,

and the kind of learning that results, within the context of thinking about the role of credits in course and qualification structures.

11. Home life

In this chapter, we describe first the young people's perceptions of their relations with their family, and the framework of rules and expectations for their behaviour. Then we turn to parents' reports of their child's happiness, any concerns they might have, and the kinds of experiences that they shared with their child.

Young people's views of their home life

We asked the young people whether they agreed with the same set of 28 items about their family and home life that we had asked about at age 14. Not surprisingly, we found four very similar groupings at age 16, with factors coalescing around *inclusive family, supportive family, family communicates well,* and *family pressure.*

Inclusive family

Around three-quarters of the young people felt included in their families: they felt comfortable, treated fairly, felt they could get help if they needed, and they were asked about what they did (their activities). Levels of family inclusion are slightly down on age-14 ratings, but we also used a 4-point rather than 5-point scale then, and asked about frequency of occurrence, rather than level of agreement.

Table 77: Inclusive family factor items (n = 447)

Nature of relationship	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
I am comfortable	38	47	12	2	< 1
I get help if I need help	38	45	15	1	< 1
My family asks me about school/what I do	33	51	10	4	1
I get treated fairly	27	48	20	4	< 1
My family respects my feelings	24	52	21	2	< 1
The expectations are fair	22	46	25	5	1
Everyone is too busy to bother about me (r)	2	4	19	48	27

(r) The item scale was reversed before the factor scale score was calculated.

Supportive family

The young people also showed high levels of trust in their parents, and the relationships for most were warm and loving. Levels of help and support were a little lower than levels of trust and warmth.

Table 78: Supportive family factor items (n = 447)

Nature of relationship	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
I trust my Mum	52	33	9	2	1
My Mum is warm and loving towards me	48	36	10	3	< 1
I trust my Dad	46	34	12	2	4
My Dad is warm and loving towards me	36	38	16	4	5
I feel close to my family	32	44	16	6	1
My family really help and support each other	23	43	26	7	< 1

Family communicates well

Family communication continued at a reasonable level at age 16. Most could talk with their parents about their hopes and plans for the future; around two-thirds had mothers who could tell when they were upset, and slightly fewer thought they did interesting things with their parents, slightly increased since age 14. Less than half however share their problems and troubles with their parents—though as we saw in the *inclusive family* factor, most feel they can get help if they need help—and only a third thought their parents checked whether they had done their homework. (if at school) or what they needed to do (if they had left school).

Table 79: Family communicates well factor items (n = 447)

Nature of relationship	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
I can talk about my hopes and plans for the future	36	47	12	4	1
My Mum can tell when I'm upset about something	30	39	19	8	2
I talk about what I'm reading	19	30	23	18	8
My Dad can tell when I'm upset about something	14	30	31	16	6
I do interesting things with my parents	14	46	27	10	2
I tell my family my problems and troubles	10	34	30	21	4
My family checks that I've done my homework/what I need to do	10	24	29	26	10

Family pressure

Few of the young people thought they were under family pressure to change or conform: less than 20 percent agreed with the five of the eight items in the *family pressure* factor. Around a third thought their family worried too much about what they did with their friends or thought that home was more friendly if they did what their

parents wanted them to do, though fewer thought that than they had at age 14. Otherwise, family pressure levels were much the same as at age 14.

Table 80: Family pressure factor items (n = 447)

Nature of relationship	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
My family worry too much about what I do with my friends	12	23	24	32	9
Home is more friendly if I just do what my parents want	9	27	30	23	9
I need more privacy	6	21	28	33	13
My parents want to control whatever I do	5	15	20	40	18
My parents expect too much from me	5	11	36	36	11
My Mum is always trying to change me	3	7	19	37	31
My Dad is always trying to change me	3	7	19	39	30
My parents have their own problems so I don't bother them with mine	3	9	22	42	25

Young people's role in large family decisions

Around a quarter of the students thought they had a part in the final decision making on family decisions like a major purchase, or where to go on holiday. Just over half said their parents sought their view, but it was the parents' decision. Seventeen percent thought they had no role in such decisions. Their parents' responses to the same question indicate that they felt the students' view carried perhaps a little more weight than this: 64 percent said they sought their child's view before making a decision; 24 percent said their child was part of the final decision making; and only 7 percent said their child had no role in such decisions.

Home rules

Almost all the young people were living at home, and almost all had some rules and expectations about their behaviour. Just under half said there were rules or expectations for at least 10 of the 18 aspects we asked about. As at age 14, most likely were rules around the use of alcohol, language, study, housework, and a time to be home by. But at age 16, many had fewer parental rules or expectations than at age 14.

Table 81: Parent expectations or rules—age-14 and age-16 young people's views

Activities subject to parent expectations/rules	Age 14 (*n* = 475) %	Age 16 (*n* = 447) %
Use of drugs	–	92
Use of alcohol[a]	89	85
Language	85	84
Doing housework	79	83
Homework/study	84	81
Time to be home by	80	78
Using the Internet	61*	51
Bedtime on school days	67	48
Driving	–	45
TV watching	57	44
Where young person can meet his/her friends	52	40
Using computer for games	42	40
Romantic relationships	–	37
Spending time with friends	47	35
Playing video games/Playstation	41	35
Using the telephone	40	28
Dress	19	21
Texting	–	17

a. First asked at age 14.
– not asked;
* increase since age 12

All but 14 percent of the 16-year-olds had broken one of their parental rules at some stage: somewhat more than the 3 percent who said they had never broken a parental rule at age 14. Parents were more likely now to tell their adolescents off; there may have been slightly less negotiation or discussion, and more attention to circumstances. Otherwise, parental responses to their 16-year-olds breaking their rules are much the same as two years earlier.

Table 82: What happens when parental expectations or rules are broken

Response to rule-breaking	Age 14 (*n* = 475) %	Age-16 (*n* = 447) %
Told off/lectured	23	48
Withdrawal of privileges/something desirable	39	37
Grounded	29	25
Negotiate/discuss	20	15
Depends on circumstances	7	13
Nothing much	–	7
Additional chores	4	5
Sent to room/time out	4	1
Physical punishment	1	1

Twenty percent of the students spent at least some time between two homes—half of these said the rules were different in each home: some less strict, some more strict. Four percent had a shared parenting arrangement, and 3 percent spent a weekend or week-night in a second household. The other arrangements were timed for school holidays or some weekends (7 percent); 4 percent had regular visits with their other parent, and 3 percent, irregular visits. Two percent also spent time in a third household.

Thirty-eight percent of the 16-year-old students came home to an empty house, up from 25 percent at age 14, and 15 percent at age 12. Parents were home to greet 59 percent of the students, 27 percent came home to a younger sibling, and 17 percent to an older sibling (down from 29 percent at age 14). A few came home to a relative or a friend.

Young people's roles in looking after younger siblings

Sixty percent of the young people had younger brothers or sisters. Forty-two percent of this group looked after or supervised their younger siblings at home, or "fooled about" with them, and 34 percent taught them things, e.g. computer activities. Eighteen percent took them out, e.g. to the local park, and 13 percent took them to their out-of-school activities and supported them there. A smaller number did things like cooking for them. But 17 percent wanted nothing to do with their younger siblings.

Parent views of their relationship with their 16-year-olds at school

We asked the parents of those still at school about their relationship with their 16-year-old child. This gives a similar picture to that given by the young people: continued closeness and support, without trying to control behaviour, and leaving it up to the young person to raise things they wanted to raise. Parents may feel they know more about their child's moods than the young person feels they know.

Table 83: Parental views of their relationships with their 16-year-old still at school (n = 412)

Aspect	Totally like us %	Often like us %	Sometimes like us %	A bit like us/not at all like us %
I feel close to my child	54	31	12	2
I would know if my child was upset about something	40	40	16	4
I encourage my child to talk about what is happening at school	36	50	11	4
I can usually explain things my child asks about	18	58	19	5
My child talks about his/her problems & troubles	11	33	36	20
As a parent, I have a right to control my child's free time	6	15	42	37

Parent views of their child's wellbeing

Eighty-three percent of the parents thought their child was generally happy, 13 percent said their happiness varied, and 3 percent thought their child was generally unhappy. We also asked parents if they had any concerns or worries about 14 aspects of their child's life. Just over half the parents had no concerns at all about their child; another 33 percent had low-level concerns. Generally, their level of concern was lower than it had been at age 14.

Table 84: Parental concerns about their child's life at age 16 (n = 440)

Possible areas of parental concern	Have concern %	Have qualified concern %	Have no concern %
Sexual relationships	6	6	87
Romantic relationships	8	6	86
Interests	8	9	83
Driving	10	7	83
School behaviour	6	11	82
Friendships	8	11	81
Use of alcohol or drugs	11	8	81
Behaviour at home	7	18	75
Self-confidence	13	19	68
Help around the house	14	18	67
Learning at school	14	21	58

Changes parents see between age 14 and age 16

What did parents think had changed in their child between the ages of 14 and 16? Three-quarters said their child was more mature: more responsible, hard-working, confident, or independent. Twenty-seven percent mentioned growth in dimensions such as humour, kindness, and sensitivity. Five percent said relations with their child had improved. Some were contesting parental authority, showing their parents little respect (7 percent); some had fallen in love or had a more social life (5–6 percent); some were battling with mood swings or depression (4 percent); some were more materialistic (4 percent); and some were remaining naïve and easily led (3 percent). Three of the girls had become pregnant.

Seventy-four percent of the parents said their relationship with their child had changed over the two years: mainly, it had become more adult (56 percent of this group), or closer (25 percent); but for some it had become more distant (15 percent), or more conflicted (3 percent).

Parent views of how they handle disagreements with their child

Only 4 percent of the parents said they and their child 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. Age 14 seemed to be a peak time for parents to get cross when they disagreed with their child—or to stay calm. There are some increases in children getting their own way, and parents ignoring the disagreement.

Table 85: Parent responses to disagreements with their child ages 12–16

Response	At age 12 (*n* = 496) %	At age 14 (*n* = 476) %	At age 16 (*n* = 440) %
Parent and child negotiate	64	77	84
Parent gets cross and gets her/his way	38	49	38
Parent stays calm and gets her/his way	22	27	19
Child usually gets his/her way	9	7	12
Parent ignores the disagreement & waits for it to go away	8	10	12

Half the parents reported more than one response in this situation, indicating that, for example, those who negotiated could also get cross.

Young people and parents' 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 not all). More "adult" activities were reported: eating together, talking—and, interestingly, there was more transporting of students to their activities at age 16 than there had been at age 14. The trends to less time on shared interests or hobbies, less time on shared physical activity, and less time working on homework together continued.

Table 86: Main activities parents do with their children ages 12–16

Share activity	At age 12 (*n* = 496) %	At age 14 (*n* = 476) %	At age 16 (*n* = 409) %
Transport student to activities	58	42	52
Eat together	36	34	52
Spend time with family/friends	63	46	45
Talk	36	36	45
Shop	41	40	40
Watch student in sport	–	32	35
Holidays	–	28	34
TV/video watching	28	28	29
Physical activities	47	36	25
Interest/hobby	31	18	18
Go to movies	15	21	15
Watch sport*	43	11	13
Housework	19	18	11
Play sport	17	11	11
Church/spiritual	11	13	9
Watch student perform—dance/drama/music	–	8	9
Homework	27	14	7
Art/cultural/music/theatre	13	11	7
Work together	–	7	6
Other	5	3	4
Computers	8	5	3
Nothing (young person's preference)	–	4	3

* 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.

Both family and friends matter

All but six percent of the young people had someone they could talk to about what happened to them at school (or, if they had left school, in their life)—much the same proportion as at ages 12 and 14. The big change—a turn to friends and away somewhat from mothers—occurred between age 12 and 14, and this continued at age 16.

Table 87: Who young people talk to most about school—ages 12–16

Relationship	Age 12 (*n* = 496) %	Age 14 (*n* = 475) %	Age 16 (*n* = 447) %
Mother	77	62	55
Friend	10	28	37
Father	28	22	19
Sibling	11	15	15

Work and achievement topped the list of topics that they shared with these people—as it had at ages 12 and 14 (60 percent). Social activity (37 percent) and bullying or social problems (21 percent) also occurred at similar levels. A quarter talked of teachers, as they had at age 14 (but not at age 12). There was less talk of sport (15 percent cf. 21 percent at age 14), or homework (11 percent cf. 21 percent at age 14). Some talked of everything (21 percent), and some of interesting or unusual things (28 percent).

For their part, 74 percent of the students' parents we interviewed (most of whom were mothers), said they talked to their child about school, and 23 percent said they sometimes did. Thirty-four percent also said their child talked to them about what they were reading, and 26 percent did sometimes.

In the next chapter, we look more closely at the nature of the young people's friendships, and at the other ways they spent time, and the values that mattered to them.

12. Values, interests, experiences, and friendships

In this chapter, we describe the kinds of values, time use, out-of-school experiences, and friendships reported by the young people when they were aged 16, with comparisons back to ages 12 and 14, to see what changes and what remains as they move forward toward an adult identity.

Values

Do adolescents' values change from age 12 to age 16? Some of the things that were most important to this group from the list of 13 items we asked them about were mentioned at much the same levels throughout this time of adolescence: being with family/whänau/fono, having a good sense of humour, doing well at an interest outside school, going to church, being good looking, or having the latest things.

Enjoying the things they did became increasingly important, as did doing well at school. Having money to spend was more important at age 16 than it was at ages 14 or 12. But as a group they were slightly less concerned at age 16 about wearing the right clothes or looking cool (perhaps because there were more ways of showing it); or having lots of friends. Doing well at sport dropped back markedly by age 16.

Table 88: Values across adolescence

Most important things at 16	Age 12 (*n* = 496) %	Age 14 (*n* = 475) %	Age 16 (*n* = 447) %
Enjoying the things I do	42	47	55
Doing well at school	42	51	54
Being with family/whänau/fono	33	31	33
Money to spend	23	23	32
Having lots of friends	32	35	26
Being helpful or kind	28	23	22
Doing well at sport	37	29	21
Good sense of humour	20	22	21
Wearing the right clothes/looking cool	16	14	10
Doing well at an interest outside school	8	8	9
Going to church	8	7	6
Good looking	5	5	5
Having the latest things	5	4	3

As we had when the young people were aged 14, we found three clusters of values. At age 16, 41 percent of the young people wanted a *satisfying* life; 37 percent wanted to *stand out* in some way, and 23 percent had *aspirational* values. These are much the same proportions as they were two years earlier. And, as two years earlier, we found that the values young people had were linked to their participation and engagement in school, their achievement, and their patterns of relationships with others.

A happy family life was consistently sought by around two-thirds of the sample as they traversed adolescence as something that would be most important to them as adults. Just under half also thought good health would matter. The closer they were to moving on from school, the more important an interesting job became (and the less important became getting a good education—as an adult, rather than a school student perhaps). Lots of money was increasingly valued, while having lots of friends was somewhat less important with time: both of these were nominated by around a quarter of the 16-year-olds. Influencing other people was now of interest to 10 percent, a marked increase from the 4 percent at age 12, though being creative or making something new was at this level at both ages.

Table 89: Values of most importance in adulthood

Most important things as an adult	Age 12 (*n* = 496) %	Age 14 (*n* = 475) %	Age 16 (*n* = 447) %
Happy family life	66	71	69
Interesting job	38	48	61
Good health	49	48	44
Good education	41	36	29
Lots of money	19	24	27
Lots of friends	30	26	23
Important job	13	16	12
Influencing other people	4	7	9
Being creative/making something new	8	5	9
Doing well at sports	16	10	8
Taking part in church/spiritual activities	6	6	5
Good looks	5	4	3

We also asked the young people an open-ended question about what was the most satisfying thing they had achieved in or out of school over the past year. Academic achievement was mentioned by 45 percent of the current students, and 29 percent mentioned sports achievement (one of the values of sports being that it can provide recognition and opportunities to rise to challenges); 12 percent mentioned achievements in the arts, 8 percent in skills (e.g. passing a driving test), 6 percent their relationships with others, 5 percent their employment, 3 percent taking responsibility for something or being recognised by others, and a further 3 percent were satisfied that they had been able to take care of themselves. When we put together these categories, achievement (in and out of school) was the most important source of satisfaction for the young people (68 percent), followed by recognition from others (not linked to achievement *per se*), 16 percent,

enjoyment (11 percent), and something that felt like a breakthrough, or a step on the way to the future (6 percent).

Conversely, when we asked them what was the least satisfying thing they had done over the past year, it was academic failure or difficulty that headed the list (30 percent), followed by failure or difficulty in the arts (8 percent), sport (6 percent), getting into trouble (7 percent), losing control or the balance of things in their life (6 percent), or having a relationship difficulty (6 percent). However, 34 percent of the students could not think of anything here.

Interests and time use

What were main interests of the study participants at age 16: the things they enjoyed most, that absorbed them the most? Table 89 records answers to an open-ended question that were mentioned by 5 percent or more. The patterns show a mix of opportunities for interaction and challenge: but there is a fair degree of recipient activities here (most of the young people did not themselves play organised sport).

Table 90: 16-year-olds' main interests

Main interests	Age 16 (*n* = 447) %
Organised sport	53
Friends	53
Listening to music	30
Informal physical activity	29
Performing arts/dance/music/drama	23
Watching TV movies/video/DVDs	23
Reading	22
Computer activities other than games	16
Digital games	14
Shopping	13
Graphic arts	12
Cars/machinery	10
Family activities	9
Domestic skill	5
Animals/pets	5

How do these main interests translate into time use? The table below shows how often the young people reported a range of common activities. Activities with friends are frequent. Watching television may not be seen as a main interest, yet it is part of daily life for two-thirds of the young people. (Average hours per day were 2.4 hours for those who had left school, and 2.07 hours for those at school, slightly less for the latter than at ages 12 and 14.) Reading continues to decline as part of daily life, as does homework. Active participation in sport has

also dropped back, though individual exercise continued to be a part of everyday life for just over a third of the young people. Forty-five percent of the 16-year-olds at school had paid work at least once a week. Frequency of computer use had not increased since age 14—and perhaps surprisingly, computer-based games took less time than they had two years before.

Table 91: 16-year-olds' leisure activities (n = 447)

Activity	Often (most days) %	1–2 days a week %	Occasionally %	Never %
Text message	74	12	7	7
Watch television	66	18	14	1
Hang out with friends	50	36	13	< 1
Use a computer	47	31	19	3
Do exercise/physical training	38	27	22	12
Play sport for fun	33–	31	23	13
Chat online or messenger	31	18	20	30
Talk to friends on phone	30	25	39	6
Read	27–	24	38	11
Play competitive sport	23–	35	14	27+
Art/music/dance/drama	19	22	19	40
Play electronic/video/computer/ Playstation games	17–	21	38	23–
Paid work*	10+	35	22	32–
Make things/design	8	13	42	38–
Pursue a hobby	8	11	33	47
Church/religious activity	4	11	12	73
Do cultural activities (e.g. kapa haka)	3	4	12	81
Do homework*	43-	30	21	4
Sing/play musical instrument	19+	11	14	55

+ more than at age 14; - less than at age 14; * % here is of students only

The average length of time spent using the computer each week was 7.92 hours (s.d. 7.6 hours) for those at school, and 5.22 hours (s.d. 3.98 hours) for those who had left school. Time spent on the computer has gradually increased: at age 12 the average was 3.8 hours, and at age 14, 6.5 hours a week.

Almost all the students had a cellphone, and their own source of music or radio; televisions that they could decide to use to watch when and what they wanted were less common. Perhaps surprisingly, few had their own computer, or access to the Internet (unless through their cellphone).

Table 92: Equipment in students' bedrooms ages 12–16

Equipment	Age 12 (*n* = 496) %	Age 14 (*n* = 475) %	Age 16 (*n* = 412) %
Cellphone	-	-	92
CD/tape player	70	80	87
Radio	84	84	85
Desk	66	72	76
Television	24	32	38
Phone	9	42	29
Video/DVD player	6	8	18
Computer	9	16	16
Internet access	3	9	12

ICT use

The young people in this study are almost "digital natives"—two-thirds had computers in their homes by the time they were aged eight, and were using them. By age 16, 93 percent used a computer at home. How do young people who have almost grown up with computers in the same way that their parents grew up with televisions as a part of daily life use them? Are they a source of entertainment, or information? Are they a tool to do some things faster, or a way to do different things? For around half the young people, ICT was a tool they used at least once a week. It was a tool that supported a range of uses: particularly communication, gaining something for further use (music, pictures), gaining information (both purposefully and through browsing), entertainment, and as a way of doing some things faster. It was not in much use to support school-based or other communities, and some of the more recent and much heralded possibilities, e.g. digital stories or blogging sites, were rare.

Table 93: 16-year-olds' computer use[33] (*n* = 447)

Activity	Often (most days) %	1–2 days a week %	Occasionally %	Never %
Download music/pictures etc	32	23	25	12
Surf the Net for fun	29	26	30	7
Chat online	27	15	19	31
Email people	20	27	34	12
Get information about jobs/education from Net	19	29	38	6
Play games	16	20	35	21
Write things	15	24	44	8
Download software	11	8	31	42
Do an assignment for NCEA credits*	11	19	36	21
Take part in chatrooms	10	7	20	56
Manipulate/create photos/artwork	8	9	31	44
Buy/sell things (e.g. through Trade Me)	6	10	29	47
Look at NCEA information on NZQA or TKI websites	6	10	39	37
Phone/fax people	5	7	18	62
Write software/create music	4	9	13	66
Create/change my own website	4	3	9	76
Meet new people	4	11	23	54
Keep a blogging site	3	2	5	81
Look at school website/intranet	3	6	25	59
View, download/school work from school website	3	3	17	69
Take part in news groups	2	2	8	79
Do my banking	2	8	14	68
Create a digital story	< 1	2	5	85
Study in an online course	< 1	1	4	87
Use mindmapping/planning software (e.g. "Inspiration")	< 1	2	5	85
Post school work to the school bulletin board to get feedback from the teacher	0	< 1	6	87
Post school work to the school bulletin board to get feedback from classmates	0	< 1	4	88

* Percentage is of school students only.

[33] The percentages in the table are for the whole group, including those who do not use a computer at home.

Experiences

We asked the young people to tell us how often they had had experience of a range of things and relationships over the past year. Their reports tell us something about the knowledge and encounters of 16-year-olds as they move into adulthood: some steadily, some with large lurches and experimentation.

We start by looking at their experiences of *praise and achievement*; then move to *risky behaviour*—the flexing of independence, and making decisions about what to take responsibility for. Next we look at *rejection*—experiences of pressure, of being taken to task for being different from someone else. Finally, we look at the incidence of *adverse events*, including health problems, family break-ups, death of a friend.

Praise and achievement

Almost all the young people had had positive experiences: praised at least once for something they had achieved, and making new friends. Around a third of the young people said they had quite often or lots of times supported a friend in trouble. It was rarer to take action on a situation that concerned them. Around one in five had never been selected for a team or event, or been included in a group they really wanted to be in. The overall picture was similar to what it had been when the young people were aged 14.

Table 94: Praise and achievement factor items (*n* = 447)

Experiences	Never %	Once %	Sometimes %	Often %	Lots %
Making a new friend	1	6	28	32	33
Being praised for achievement	6	8	43	28	15
Being included in a group I really wanted to be in	16	8	28	29	15
Trying to fit everything into my time	8	9	40	30	13
Supporting a friend in trouble	14	17	36	22	9
Getting selected for a team or event	23	17	31	19	8
Taking action about a situation that concerns me	22	18	45	10	4

Risky behaviour

Here we see some marked changes from age 14. Almost half the young people had never drunk alcohol at age 14; now only 16 percent had not done so in the past year. Nine percent had had sex in the past year at age 14; now 34 percent had. Nineteen percent had done something they regretted while drunk two years earlier; now 51 percent had. A fifth had never got behind with school work at age 14; now only 7 percent had.

But the other behaviours we asked about, that can pose some risk in terms of keeping a focus on learning, or losing control, had not changed.

Table 95: Risky behaviour factor items (*n* = 447)

Experiences	Never %	Once %	Sometimes %	Often %	Lots %
Getting in trouble with the police	75	16	5	1	1
Getting into a physical fight	66	19	10	2	< 1
Having sex	62	8	13	7	7
Doing something I regretted when drunk	49	20	19	7	3
Breaking up with a boyfriend/girlfriend	45	27	19	4	3
Getting in trouble at school	35	21	33	6	3
Having to lie about something someone else did	20	26	42	7	3
Drinking alcohol	16	7	37	17	20
Getting behind with (school) work	7	16	51	17	7

Rejection

Most of the young people did not experience being bullied or hassled; but around 10 percent did experience this as something that occurred sometimes or more often over the past year, more so in relation to their body shape or size. And around a third sometimes or more often felt left out of things. The picture is much the same as it was at age 14, with the exception of fewer 16-year-olds coping with changes to their body as they moved through adolescence.

Table 96: Rejection factor items(*n* = 447)

Experiences	Never %	Once %	Sometimes %	Often %	Lots %
Being hassled about my sexuality	95	1	2	< 1	< 1
Being hassled about my culture	83	7	6	2	< 1
Being bullied/hassled at school	73	15	9	1	1
Hassling/bullying someone at school	73	16	8	2	1
Being hassled about my body size/shape	68	11	16	3	1
Being pressured to do something I did not want to	59	23	15	1	1
Feeling left out	48	18	28	4	1
Coping with body changes	45	13	31	6	2

Adverse events

Around half the young people had a health problem or been injured over the past year, though few had continuing problems from health or injury. Most of the young people did not experience any of the other *adverse events* we asked about. However, 17 percent had experienced family break-up, and 11 percent had had sex when they did not want to.

Table 97: Adverse events factor items (*n* = 447)

Experiences	Never %	Once %	Sometimes %	Often %	Lots %
Having sex when I didn't want to	89	5	2	1	1
Shifting to live with a different parent or family member/changing where I live	86	6	4	2	1
Family break-up	83	10	3	2	1
Death of a friend	78	18	2	< 1	< 1
Health problem	56	19	19	4	2
Had an accident/been injured	46	26	22	3	2

Other experiences

Some of the experiences we asked about did not come into these four factors. Their incidence is described in the table below. The young people did experience a range of feelings, and, sometimes, frustrations.

Most of the young people had been bored at least sometimes; around two-thirds also felt they had not had enough money at least sometimes, and around half, not enough freedom. Two-thirds had lost a friend (as they had also gained new ones); and half had fallen in love. Around two-thirds had lost their temper at least once, or fought with others at home.

Table 98: Other experiences over the past year (*n* = 447)

Experiences	Never %	Once %	Sometimes %	Quite often/lots %
Falling in love	50	36	10	3
Losing control of temper	33	25	31	10
Losing a friend	31	46	20	3
Not having enough freedom	29	15	38	16
Fighting with others at home/in flat	27	15	40	14
Not having enough money	20	12	39	28
Having nothing to do/being bored	11	9	52	26

Friendships

Friendship was very important in the young people's lives. Some activities with friends were much the same across adolescence: simply hanging out together topped the list at each age. But there were some changes at age 16: a jump in going to parties or on holiday together, a steady rise in shopping together, and in watching TV or DVDs together; a continued decline in informal physical activity.

Table 99: Changes in friendship activities between ages 12 and 16

Activities	Age 12 (*n* = 496) %	Age 14 (*n* = 475) %	Age 16 (*n* = 447) %
Hanging out at own/friend's house	53	60	64
Going out to entertainment	37	61	57
Parties/holidays	10	15	39
Talking	47	43	36
Going out—no fixed agenda	22	37	29
Shopping	17	24	28
Organised sport	20	27	24
Physical activity—informal	52	33	23
Watch TV/video/DVD	–	14	22
Texting	–	–	21
Playing games (e.g. card, computer)	30	21	13
Drinking alcohol	–	–	7
Take part in music/drama/dance	–	–	6
Church/spiritual events	–	–	4
Homework/study	–	6	3

Support and trust is the most valued aspect of friendships at age 16: this has grown steadily in importance since age 12. Sharing interests is less important; the fact that a friendship is long-lasting has become more important for some.

Table 100: Good Points about friendships ages 12-16

Aspect	Age 12 (*n* = 496) %	Age 14 (*n* = 475) %	Age 16 (*n* = 447) %
Support or trust	49	61	68
Having fun	52	51	49
Someone to talk with	41	46	41
Sharing interests	43	30	34
Long-lasting	–	7	14
Help with homework/study	–	4	7

Forty-one percent said there was nothing that was not so good about their friendships: much the same proportion as at ages 12 and 14. What was sometimes difficult in the friendships varied widely, from arguments

(17 percent) and gossip or backstabbing (15 percent), to competition, judgements, being too demanding or close (5 percent each).

Since friendship is an important part of young people's (and adults') lives we asked the young people to state their level of agreement with a set of 22 items describing friendships, so that we could see what different patterns of friendship existed. Three factors were evident, as they had been at age 14: friendships that were "*solid*" (e.g. with high trust and respect); friendships that were "*extending*" (e.g. friends who pushed the young person to do well, introduced them to new things, listened to what they had to say); and "*risky*" friendships (e.g. friends who got into trouble, were drinking at parties, trying drugs).

Solid friendships

Around four-fifths of the young people enjoyed solid friendships, much as at age 14.

Table 101: Solid friendships factor items (*n* = 447)

Nature of friendships	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
My school friends are good friends/I still see them	58	35	5	1	0
My friends respect my feelings	37	51	10	1	< 1
I trust my friends	36	52	9	2	< 1
I wish I had different friends [at school] (r)	< 1	3	13	36	47
I feel alone or apart when I am with my friends (r)	1	4	11	38	44

(r) Item scale reversed when the factor scale score was calculated.

Extending friendships

Around three-quarters of the young people also enjoyed friendships where they shared concerns, thoughts about the future, and were listened to; just over half also had friends who pushed them to do well, enjoyed learning new things, and introduced them to interesting activities. Most of the young people also thought that their parents liked their friends (although when we asked about their home life, around a third thought that their parents worried too much about what they *did* with their friends—perhaps not surprising given the increase in friends' risky behaviour).

Table 102: Extending friendships factor items (*n* = 447)

Nature of friendships	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
My parents like my friends	35	44	13	2	1
My friends listen to what I have to say	25	61	12	< 1	1
My friends talk about hopes and plans for the future	22	45	25	6	2
I like to get my friends' point of view on things I am concerned about	21	54	17	7	< 1
My friends have introduced me to interesting activities that I would not have known about otherwise	14	43	26	14	3
My friends push me to do well	11	42	38	8	1
My friends enjoy learning new things [at school]	5	43	43	6	2

Friends with risky behaviour

The 16-year-olds were extending their experiences into alcohol, drugs, and sex. At age 14, 18 percent said their friends liked to drink alcohol at parties; now 57 percent said so. Six percent said their friends smoked marijuana; now 18 percent said so. Fourteen percent had friends who smoked cigarettes; now 27 percent had. However, the proportion who had friends who thought it was okay to have unsafe (unprotected) sex was low, 8 percent, and there was no increase in those who had friends who got into trouble.

Table 103: Risky friendships factor items (*n* = 447)

Nature of friendships	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
My friends do drugs other than marijuana	2	4	9	25	59
My friends think it is okay to have unsafe sex	2	6	11	31	48
My friends smoke marijuana	6	12	19	19	43
My friends smoke cigarettes	10	17	21	21	30
My friends get into trouble	3	17	37	33	11
When my friends and I party we like to drink alcohol	24	33	21	10	11

Do friends carry more weight than parents?

Who carries more weight, friends or parents? Table 103 sets out the young people's reactions to our question asking "If your parents told you not to do something and your friends really wanted you to do it, what would you do?" The steady rise in the importance of friendships—or the decline in the acceptance of parental judgement—is evident when we compare the two-thirds at age 12 who accepted their parents' judgement, with the 53

percent who would do so at age 14. While quite a few would go ahead anyway, or see their actions as their own decision, quite a few thought that it was important to take the actual action and its context into account: a more nuanced view of how important things could be in different settings than they took at an earlier age.

Table 104: Reaction to parental veto on something young person's friends want them to do

Reaction	Age 12 (*n* = 496) %	Age 14 (*n* = 475) %	Age 16 (*n* = 447) %
Wouldn't do it	66	53	44
Depends	11	25	40
Would do it anyway	6	19	25
Would try to persuade parents to let me do it	14	19	16
My own decision/will do what I want	–	–	15
Would try to persuade my friends not to do it/ to do something else	6	4	2

In the next chapter, we look at how friendships, relations with parents, and values intersect, and the extent to which we can predict the patterns of a 16-year-old in these dimensions of life from what they were doing and saying two years earlier.

13. Intersections of relationships and experiences

Are young people who give low ratings to their level of communication with their parents more likely to have friends with risky behaviour, or undertake risky behaviour themselves? What are some of the other experiences and attitudes that are related to the variables that we have seen associated with lower school participation, engagement, and achievement? In this chapter we look at the intersections of different patterns of friendships, relationships with parents, experiences, values, and interests.

As in earlier chapters, we use the correlations between factors that we could put onto a 1–10 scale; one-way or single-factor ANOVA comparisons of average scores on the scales for categorical variables, and some models that use variables that showed moderate to strong linkages in the correlations and ANOVA results to shed some light on key factors that may be related to differences in kinds of friendship and behaviour.

Intersections between family relationships, friendships, and experiences

We start with the correlations among the factors related to young people's views of their family relationships (see the Appendix for a description of the factors). These include similar factors from two years earlier, showing a reasonable degree of continuity in the young people's views, particularly in relation to both habits of communication, and what some young people experienced as pressure. Young people who see their family as supportive are also highly likely to see themselves as part of their family, and to report a high level of communication with their parents. There is less correlation between these three aspects of family life and young people's reports of feeling pressured by their families: indicating that it is possible to feel supported, included, and able to talk with your parents, but still feel pressured by them. There is even less correlation with two key aspects of the young people's behaviour two years earlier: young people who tried out risky behaviour at age 14 (not shown in the table as all correlations were below the 0.2 cut-off), or who experienced rejection then were no less, or more, likely to be closer to their families than others.

However, there is more correlation between current levels of risky behaviour and reports of parental pressure; as there is with experiences of rejection.

Young people who reported friendships that extended them—and involved communication—were more likely to have good family communication levels also, suggesting that communication skills in one sphere are of use in the other—and what is learnt in one sphere about communication may transfer to the other. This interpretation is consistent with another pattern evident in the table: solid friendships showed similar levels of correlation with aspects of family inclusion and support, but not with the level of family communication.

Table 105: Correlations between the age-16 family variables and with the age-14 family and life variables

Measure	Supportive family 16	Family communicates well 16	Inclusive family 16	Family pressure 16
Correlations between the family variables				
Family communicates well 16	**0.70**			
Inclusive family 16	**0.73**	**0.69**		
Family pressure 16	**-0.47**	**-0.40**	**-0.58**	
Correlations with other variables				
Supportive family 14	**0.52**	**0.43**	**0.43**	-0.23
Family communicates well 14	**0.40**	**0.51**	0.39	–
Inclusive family 14	0.39	**0.40**	**0.49**	-0.32
Extending friendships 16	0.29	0.38	0.30	–
Solid friendships 16	0.28	–	0.31	-0.22
Praise and achievement 14	0.21	0.21	–	–
Praise and achievement 16	–	0.24	–	–
Rejection 16	–	–	–	0.31
Risky behaviour 16	–	–	–	0.30
Friends with risky behaviour 16	–	-0.23	-0.21	0.23
Rejection 14	-0.20	–	-0.23	0.24
Family pressure 14	-0.22	-0.24	-0.29	**0.45**

– indicates $-0.2 < r < 0.2$; all correlations stronger than ± 0.4 in absolute value are in **bold** face.

When we looked at the relationship between young people's views of their relationship with their parents, and our categorical variables, we found both differences and a lack of differences that are of interest. These are summarised below (the full analysis is contained in the technical report (Hodgen, 2008)):

- Attendance, gender, ethnicity, and maternal qualification are unrelated to differences in scores on these measures of the quality of young people's family experiences. Thus, for example, males were just as likely as females to experience communicative families, and family pressure; and the students whose school attendance was poor were just as likely as those whose school attendance was excellent to experience a supportive family, or one that pressured them.
- Students whose families had had low incomes at age 5 had lower scores for the *family communicates well* and *supportive family* measures (at the indicative level).
- Students with *standing out* values had lower scores for the *positive family* measures, and higher scores on the *family pressure* measure. Similarly, students in the electronic games/no interests cluster at age 14 had lower scores for the *positive family* measures. Students whose parents thought they had not enjoyed school over the past four phases of the study were likely to have lower scores on the *positive family* measures.
- *Family pressure* levels were higher for students in "vocational" or "contextual" subject clusters, and in terms of patterns over ages 8 to 14, those who had not enjoyed school, for those who had been involved in bullying

in at least one of the four previous study phases, and for those who had never enjoyed reading; and at an indicative level, for young people whose families were in a difficult financial situation at age 14.

- *Family inclusion* was also related to subject cluster (highest levels among those in the "traditional science" cluster; lowest in the "vocational" cluster).
- Scores on the *family inclusion* and *supportive family* measures were higher for those with more Level 1 NCEA credits.
- *Family communicates well* scores were lower for those who had never enjoyed reading, or who were heavy TV watchers, and higher for those with higher age-14 motivation levels.

Intersections between friendships and experiences

The next table looks at the correlations between friendships and experiences over the past year, and back to age-14 levels. There is a moderately strong likelihood that those who had risky behaviour and friends with risky behaviour two years earlier continued along this path at 16; there is less correlation over the two years for the positive kinds of friendship. When we look at current correlations, there is a moderately strong likelihood that those who find their friendships extending also find them solid.

There is very little correlation between these positive kinds of friendship and having friends with risky behaviour. This suggests how risky behaviour shared with friends can become entrenched; and how such behaviour may indicate a desire to impress others rather than share feelings. The correlation between risky behaviour and praise and achievement may surprise, but this item did include items such as being included in a group you really wanted to be in, and supporting a friend in trouble. The risky behaviour pattern also shows a moderate correlation with adverse events, and some correlation with rejection (and rejection and adverse events are also moderately correlated (0.38).

Table 106: Correlations between the age-16 friend variables and with the age-14 friend, and age-16 experience variables

Measure	Friends with risky behaviour 16	Risky behaviour 16	Solid friendships 16	Extending friendships 16
Correlations between the friend variables				
Risky behaviour 16	**0.67**			
Solid friendships 16	-0.14	–		
Extending friendships 16	-0.18	–	**0.48**	
Correlations with other variables				
Friends with risky behaviour 14	**0.52***	**0.46**	-0.12	–
Risky behaviour 14	**0.50***	**0.58***	-0.11	–
Adverse events	0.33	0.41	–	–
Praise & achievement 16	0.16	0.31	0.24	0.37
Praise and achievement 14	0.12	0.13	0.16	0.27
Rejection 16	–	0.27	-0.31	
Solid friendships 14	-0.11	–	0.33	0.23

– indicates $-0.2 < r < 0.2$; all correlations stronger than ± 0.4 in absolute value are in **bold** face.

Risky behaviour and friends

Young people with higher levels of risky behaviour and friends with risky behaviour were more likely to be in the "vocational" or "contextual" subject clusters at school, to have "*standing out*" values, to be in the sports or electronic games/no interest clusters at age 14, to have not enjoyed reading, and been heavy TV watchers, had some involvement in bullying in at least one of the four previous phases of the study, and be less likely to have had high motivation levels at age 14. Gender was unrelated to patterns of friendship and events. Young people whose mothers had no qualification or a trades level qualification, and Mäori/Pacific young people were more likely to have higher levels of risky behaviour and friends with risky behaviour, as were those whose family income had been low at age 5, low at 14, and whose family was in a difficult financial situation at age 14.

Results of multivariate models

We fitted some multivariate models to gain additional insight into the stability of the patterns of friendship and family relations we were seeing at age 16. To what extent did age-14 patterns contribute to them, and which were the age-14 aspects of friendships, family relationships, and experiences that showed a continuing contribution? We also included social characteristics in these models: but on the whole they did not show significant contributions to age-16 patterns, indicating that these patterns are not very different for young people in different social groups, once other characteristics of their lives have been taken into account.

Because of the strong correlation level between each of the three positive aspects of family relationships, usually only one of these family factors appeared in the model. The patterns reported in Table 106 show that the greatest continuity between age 14 and age 16 is in the area of risky behaviour, and having friends with risky behaviour. Continuity is least with regard to experiencing adverse events (which include accidents and illness).

The comparatively low level of continuity for experiencing solid friendships is likely to be because the age-16 factor did not include all of the age-14 items, some of which formed the age-16 factor *extending friendships*.

Some "virtuous" cycles can be seen, e.g. in relationship to extending friendships; and some "vicious" cycles, e.g. in relationship to family pressure, and most strongly in relationship to risky behaviour and having friends with risky behaviour.

The praise and achievement pattern is interesting: it shows perhaps two different sets of experiences and how those link together, for those who support friends in trouble or are praised for achievement in a positive set of relationships and experiences, and those who provide such support or receive such praise in a negative, or risky set of relationships and experiences. One example of how the same thing can interconnect either positively or negatively is that negative scores for age-16 risky behaviour were more likely for those in the sports-interest cluster (which makes sense in terms of some of the contexts in which team sports occur), as were lower levels of enjoyment of reading, yet this cluster was just as likely to experience praise and achievement, which can also support more positive family relationships.

Thus when we are thinking of "at-risk" young people, we need to be mindful that they do not inhabit a distinct and separate niche. Thinking about those who play sports, for example, our analysis does not suggest that a warning light goes on for every young person who does play sports; but that we pay attention to what the specifics of what happens around our young people's involvement in sports—whether it provides opportunities for risky behaviour, or contrarily, for extending friendships.

Table 107: Results of multivariate models to predict age-16 family relationships, friendships, and experiences over the past year

Age-16 family, friendship, or experience factor	Pattern found	R^2 (% of variance explained)
Risky behaviour	Dominant factor: risky behaviour at 14; followed by family pressure 16, then self-management at 14, attendance, age-14 interests, and gender	43
Friends with risky behaviour	Dominant factor: friends with risky behaviour 14; followed by family pressure 16, parent view of self-management 14, values at 14, and age 16 attendance	37
Family communicates well	Dominant factor: age-14 levels of family communicates well; followed by family pressure at age 14 (lower scores if higher family pressure); then by reading enjoyment 8–14, family financial situation at 14; then praise and achievement at 14	32
Praise and achievement	Dominant factor: praise and achievement at 14; followed by solid friendships at 16, adverse events 16, family communicates well 16, enjoyment of school 8–14; enjoyment of reading 8–14, and rejection at 14	32
Rejection	Strong factors: adverse events 16, solid friendships 16 (lower rejection for those with higher levels of solid friendships); followed by rejection 14; then values at 16	31
Inclusive family	Strong factor: age-14 levels of inclusive family; followed by age-14 level of family communicates well; then family pressure at age-14 (lower scores if higher family pressure), parent–child friction at age 14, and praise and achievement at 14	30
Supportive family	Dominant factor: age-14 supportive family; followed by financial situation at 14, and parent view of communication at 14	29
Family pressure	Dominant factor: age-14 family pressure; followed reading enjoyment pattern, age-14 inclusive family, and parent–child friction at 14	27
Extending friendships	Strong factor: family communicates well 16; followed by praise and achievement 14, school attendance 16, gender, and solid friendships 14	25
Solid friendships	Dominant factor: solid friendships at age 14; followed by inclusive family 16; involvement in bullying 8–14	18
Adverse events	Dominant factor: attendance; followed by family pressure 16, praise and achievement 14, risky behaviour 14	16

14. Do social characteristics matter?

What different patterns do we see related to gender, ethnicity, family income, and maternal qualification? In models containing all four of the social characteristics (gender, ethnicity, maternal qualification and family income (at age 5), we found that maternal qualification was the only social characteristic that was associated with all the young people's competency levels, and it usually had the strongest associations (Wylie & Hodgen, 2007). Family income was only associated with numeracy and literacy levels. Ethnicity was associated with numeracy, literacy, and two of the attitudinal competencies, at much lower strength than maternal qualification, and somewhat less than family income. Gender was associated with literacy and the two social skills competencies at slightly less or much the same level as maternal qualification, and at half the level of maternal qualification for the other two attitudinal competencies. Yet when we include social characteristics in models that also include young people's own behaviour and approaches, these social characteristics are no longer as important.

So in this chapter, we aim to get "behind" these characteristics to see what they stand for. What other differences related to school participation, engagement and achievement, relationships with family and friends, and ways of spending time, exist that might shed light on why these differences (and similarities) in competency levels evident in relation to social characteristics exist when we look at them alone, but are no longer evident or as strong when we put the social characteristics in a fuller context?

Gender

School participation

There were no gender differences related to school attendance among those at school; and females and males were just as likely to be found among the school leavers.

School engagement

Males and females had similar average scores on the *engaged in school* factor. Their other views of learning and of their classes were also similar, but with these exceptions: females had slightly higher average scores for using *internal markers of achievement*, they were also less likely to show *disengagement*, to be in a *disrupted learning environment*, or to be in a *comparative learning environment*; and their teachers rated them slightly more highly when it came to their *approach to NCEA assessment*.

Looking back, females were more often reported by their parents to have been enthusiastic about school (47 percent) than males (34 percent), and males were more often reported to have mixed feelings about school (27 percent) or to have been unhappy at least once (14 percent) than females (18 and 7 percent, respectively).

Males were more likely to be in the "vocational" subject cluster (21 percent cf. 15 percent) or "contextual" cluster (16 percent cf. 11 percent), and girls were more likely to be taking traditional academic courses with a science orientation (55 percent cf. 40 percent). There were no gender differences related to taking traditional academic courses with an arts orientation.

Looking at extracurricular learning opportunities, females were more likely to take part in or attend musical or other performances (including kapa haka) and more likely to be members of debating teams; but no females were members of computer clubs, and few took part in practical investigations. Males were more likely to captain sports teams.

Achievement

At age 16, females did have higher literacy scores on average (a mean of 59 percent cf. 42 percent for males), and higher scores for the attitudinal competencies (ranging from a difference of 12 percentage points for *focused and responsible*, to 20 percentage points in relation to having *social difficulties, w*here their score was lower on average. No gender differences were evident in relation to numeracy or logical problem solving scores.

Nor were there any gender differences related to the number of Level 1 NCEA credits achieved. However, parents of males were less likely to be satisfied with their progress at school (49 percent cf. 70 percent of parents of females), either because they thought they were not making good progress (33 percent), or were bored (16 percent).

Among the school stayers, females were more likely to mention academic achievement as something they were proud they had done over the past year, and less likely to mention sports achievement than the male school stayers; a similar pattern was evident among the school leavers. There were no gender differences among the things they were least proud of.

Interests, friendships, and home life

Females were no more, or less, likely than males to have risky friendships or embark on risky behaviour themselves. Relationships with their families had similar levels of support, communication, and inclusion, or pressure; and parents' views of changes in their relationships with their child over the past two years were similar. Parents of females did give them a higher rating for being responsible, however. Females were more likely to enjoy extending friendships, and to have had more experiences of achieving and receiving praise over the past year.

Females were more likely to value a *satisfying life* (48 percent) than males (34 percent), whereas males were more likely to have *standing out* values (45 percent) than females (28 percent). A similar pattern was found at age 14.

Even allowing for the fact that the age-16 females in this study were more likely to have younger siblings, they were more likely than the males to look after these siblings, though there were similar proportions who wanted nothing to do with them.

Parents reported more males with their own computer (22 percent cf. 9 percent of females), or own video/DVD player (23 percent cf. 13 percent), but more females had their own phone (35 percent cf. 23 percent). Parents responding (mainly female) were more likely to shop with daughters (55 percent cf. 26 percent of sons), but more likely to share sports with their sons. Parental aspirations in terms of future education were similar for sons and daughters; parents of sons were somewhat more likely to see their child's desire or choice as the thing that might stop them getting as much education as the parent wanted for them. Sixteen percent of parents of sons thought they were interested in a trade, cf. 2 percent of parents of daughters.

There are also some differences in trends over time in indicators of engagement in literacy: more females had consistently reported enjoying reading (48 percent) than males (29 percent), and correspondingly more males (12 percent) had said on two or more occasions they did not enjoy reading than females (1 percent). As in earlier phases of the study, females read a wider range of material, and wrote in a wider range of genres.

Among the school stayers, gender differences in interests and ways of spending time that had been evident in earlier years of the study continued: males spent more time playing sport for fun, playing electronic games, and were more likely to take part in competitive sport; females spent more time on the phone with their friends, text-messaging, on arts activities and performance, and were more likely to make or design things.

Male school leavers were more likely than female school leavers to surf the Internet for fun, and download software. Male school stayers were more likely than female school stayers to play games on their computer or download software while female school stayers were more likely to email people, use the Internet to get information for school, send in an assignment for NCEA credits, or look at NCEA information from NZQA or TKI. Males spent more time on the computer each week than did females.

Wellbeing

The female school leaver group stands out as the group that was least happy in what they were doing. Female school leavers were more likely to be reported as generally unhappy (31 percent cf. no males), and to be unsettled by something (77 percent cf. 33 percent of the males). This gender difference was not evident among the school stayers. Parents saw romantic or sexual relationships, and relations with their friends as being the source of their being upset. Female school leavers were least likely to be coping well if something was upsetting them. Not surprisingly, their parents were more likely to have concerns about their friendships, sexual relationships, and self-confidence. An open-ended question also showed these parents were more concerned about their daughters' lack of interests or sustaining an interest (64 percent of the female school leavers said they never spent time on an interest or hobby, cf. 14 percent of the male school leavers), recklessness and contesting of parental authority, leaving school without a qualification, and substance use. Only 23 percent of the female school leavers were given a rating by their parent of 4 or 5 out of 5 for their ability to cope with life after school, cf. 53 percent of the males. According to their parents, males who left school were more likely to have had a specific job/apprenticeship or course in mind, and were more likely to have left school because they were bored; females who left school were more likely to have been depressed or found schoolwork too hard. Two-thirds of the parents of males thought they had no wish to do something different from they were currently doing, cf. 23 percent of the parents of females; and 85 percent of the latter wanted their school leaver daughters to be doing something different, cf. 40 percent of the male school leavers' parents.

Female school leavers' own reports of their friendships and lives are generally consistent with parental views. They were more likely than male school leavers to say their friends got into trouble, smoked marijuana, or did other drugs, and thought unsafe sex was okay, and that their friends had different plans for the future than they had themselves. Their trust in their mothers was less than the male school leavers showed in their mothers: but this is the only difference in views of their relationships with their parent(s).

Although females' parents were more concerned about what they were doing, the pattern of experiences reported by the young people showed no marked differences between males and females: but perhaps it is this very lack of difference that perturbs parents of daughters who have left school at what is now an early age.

By contrast, there were some gender differences in the school stayers' experiences. Females both made and lost friends, and supported friends in trouble more—and they were more conscious of being left out. They were also more conscious of a lack of money and freedom. Yet more females reported drinking quite often or more (42 percent cf. 30 percent of males), and they were more likely to have sometimes done something they regretted while drunk, while (a small proportion of) males were more likely to have done this lots of times.

Among the school stayers, females were more likely to think their friends respected their feelings, listened to what they had to say, that they talked together about their hopes and plans for the future, that they liked to get their friends' point of view on things, and less likely to think that their friends pushed them to do stupid things. More males were neutral on whether they thought their parents wanted to control them or were always trying to change them.

Females had more health problems—but males had more injuries (60 percent had at least one cf. 44 percent of females). Males reported more physical fighting (42 percent cf. 20 percent of females had done so at least once),

more hassling or bullying others more (31 percent cf. 21 percent of females), but females reported fighting at home more (86 percent had done this at least once, cf. 56 percent of males).

Parents of male school stayers were more concerned about their learning at school (22 percent cf. 8 percent of parents of female school stayers), and the open-ended question showed 25 percent of parents of sons were concerned that they had disengaged from school work, cf. 10 percent of parents of daughters (though we found no difference between males and females on average in their own reports of their engagement in school and in classes).

Ethnicity

When we asked the young people to give the ethnic groups with which they identified, a fifth gave us more than one. In total, we had 405 who identified with NZ European/Päkehä, 61 with Mäori, 36 with a Pacific culture, 9 Chinese, 7 Indian, and 22 other. This multiple identification is worth noting. In our descriptive reporting and analysis, we have used the categories given by parents given when their children were young. The parents identified fewer as Mäori and Pacific, and there were fewer choices of more than one group, so that prioritizing ethnicity (Mäori, then Pacific, then Asian) to give the measure used in all our analyses was appropriate. Because of the lower numbers identifying with minority groups, our analysis here groups together those groups that tended to show more similarity when we looked at the competency measures: Mäori and Pacific; and Päkehä and Asian.[34]

Effects of ethnicity are difficult to separate out from income, maternal qualifications, school decile, and school gender mix. About half of the Mäori or Pacific young people (as identified by their parents) in the study at age 16 were from low-income homes at age 5, compared with about a quarter of Päkehä/Asian young people. These proportions are much the same for age-16 family income, although there was a certain amount of movement between groups: of those in the lowest income group at age 5, 59 percent were in the corresponding group at age 16, and 10 percent were in the highest income group; of those in the highest income group at age 5, 70 percent were in the same group at age 16, and 8 percent were in the lowest income group. Three percent of the age-5 Mäori/Pacific students' mothers had university qualifications, and 30 percent had no formal qualifications, compared with 21 percent of the Päkehä/Asian students' mothers with university qualifications, and 11 percent with no formal qualifications.

Participation

Those who were identified as Mäori were more likely to be among the school leavers (15 percent cf. 6 percent of those categorised as either Päkehä or Asian). However, the Mäori/Pacific school leavers were more likely to be in employment or studying than those who were Päkehä/Asian. Current school attendance was lower for Mäori/Pacific students: 59 percent had good or better attendance cf. 77 percent of Päkehä/Asian students.

School engagement

Consistent with having somewhat lower attendance levels, Mäori/Pacific students also reported somewhat lower levels of school engagement, and slightly lower levels of a positive attitude to their work; they were also somewhat less satisfied with their subject mix than Päkehä/Asian students. Mäori/Pacific students were more likely than Päkehä/Asian students to be taking subjects with a vocational orientation (28 percent compared with 16 percent) or a contextual orientation (33 percent cf. 10 percent), and were less likely to be taking traditional

[34] Given the difference between the self-reported ethnic identity of the young people at age 16 and the information given by their parents when they joined the study, we decided, for continuity with earlier phases of the study reporting and for ease of comparison, to continue using the parents' version of ethnicity in the analysis of the age-16 data.

academic subjects (9 percent cf. 23 percent, for arts, and 31 percent cf. 50 percent for science). Parents of Mäori/Pacific young people were more likely to wish they and their child had had more guidance on subjects (31 percent cf. 19 percent for Päkehä/Asian).

Teachers of Mäori/Pacific students rated their approach to NCEA assessment somewhat lower than that of Päkehä/Asian students.

Päkehä/Asian students were more likely to have engaged in extracurricular learning that took the form of individual sports, between-schools competitions, or debating; and Mäori/Pacific students, in kapa haka or other cultural performances.

There were several indications (not all significant) that parents of Mäori/Pacific students were less positive about their children's school experiences than were parents of Päkehä/Asian students. Fewer reported their children as enthusiastic about school (41 percent cf. 57 percent of Päkehä/Asian students' parents). Eighteen percent rated teachers' support for their child's learning a low 1–2 on a 5-point scale cf. 9 percent of Päkehä/Asian students' parents; and 33 percent gave a 1–2 rating for teachers' support for their child's emotional wellbeing cf. 18 percent of Päkehä/Asian students' parents. This pattern is consistent with the difference in parental reports of their children liking most or all of their teachers (45 percent of Mäori/Pacific students' parents cf. 69 percent of Päkehä/Asian students' parents). The only ethnic-related difference in parental concerns was that more Mäori/Pacific parents were concerned about their child's school behaviour (16 percent cf. 5 percent of Päkehä/Asian students' parents).

Achievement

Ethnicity was reflected in differences in literacy and numeracy scores at age 16, and in the attitudinal competencies *thinking and learning* and *focused and responsible*. Päkehä Asian scores were higher on average for these measures.

A third of Mäori/Pacific students achieved fewer than 80 Level 1 credits, and only 15 percent had achieved over 120 credits, compared to just under a fifth and just under half of Päkehä/Asian students.

Teachers gave Mäori/Pacific students lower ratings for their overall ability.

Only a third of the parents of Mäori/Pacific students were satisfied with their child's school progress; almost half the 63 percent of Päkehä/Asian students' parents were. This level of satisfaction is also notably lower than when the young people were aged 14: then 58 percent of parents of Mäori/Pacific students were satisfied with their progress. Two years ago, the reason for lack of satisfaction was their child's boredom; now it was their lack of progress. Their aspirations for their child's post-school education remained as high as it was for parents of Päkehä/Asian students; and their views on the occupations that interested their child were also similar.

Among the school stayers, Mäori/Pacific were more likely to mention a creative or arts academic achievement or something related to employment as something they were proud they had done over the past year. There were no ethnic differences among the things they were least proud of.

Interests, friendships, and home life

The only difference related to friendships and home life was that Mäori/Pacific students were more likely to have friends with risky behaviour. They were also more likely to have risky behaviour themselves.

Mäori/Pacific students were less likely to place value on having a satisfying life than Päkehä/Asian students (30 percent cf. 43 percent), but more likely to place value on having an aspirational life (37 percent cf. 19 percent).

Among the school leavers, Mäori/Pacific were more likely to play sport for fun (57 percent did this one or two days a week cf. 14 percent of Päkehä/Asian), and more likely to take part in cultural activities (57 percent cf. 14 percent of Päkehä/Asian).

Among those still at school, Päkehä/Asian students were more likely to read often (31 percent cf. 13 percent of Mäori/Pacific students). Mäori/Pacific students were more likely to often play competitive sport, sing or play a musical instrument, hang out with their friends, and to take part in cultural activities, or church or religious activities. There were some differences in computer use: Mäori/Pacific students were more likely to use it to play games, download music and software, take part in news groups, email people, and to meet new people. While that signals more use of the communicative aspects of the Internet, Mäori/Pacific students reported less reading of websites for enjoyment (along with less reading of fiction).

Wellbeing

There were no ethnic differences related to parental reports of their child's general happiness, or whether anything was unsettling them, and if so, how they were coping with it.

Mäori/Pacific school leavers were less likely to have done something they regretted while drunk (39 percent cf. 86 percent of Päkehä/Asian school leavers), or to have hassled or bullied someone (14 percent cf. 57 percent).

Mäori/Pacific school stayers gave a less positive view of their everyday life. They were more likely to say they had quite often or lots of times got behind with their school work (35 percent cf. 21 percent of Päkehä/Asian school stayers); they were more likely to have been hassled about their culture (30 percent cf. 13 percent of Päkehä/Asian school stayers), to have got into trouble at school (61 percent had been in trouble at least sometimes over the past year cf. 39 percent of Päkehä/Asian school stayers), to have supported a friend in trouble, and less likely to have been praised for achievement, but also less likely to have been excluded from a group they really wanted to be in.

Maternal qualification

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

Participation

School-leavers were more likely to have come from the group with mothers who had no formal qualification: 19 percent of this group had left school at age 16 cf. 2 percent of those whose mothers had a university qualification. Age-16 student attendance rates were related to maternal qualification levels: good or better school attendance increased from 62 percent of those whose mothers had no qualification to 86 percent of those whose mothers had a university qualification.

Engagement

Students whose mothers had a university qualification reported the highest levels of engagement; those whose mothers had no qualification or a mid-secondary level or trades qualification the lowest. The students whose

mothers had a university qualification also had higher average scores for the factors *affirmed at school*, *attitude to work,* and *internal markers of achievement.* Teacher ratings of student *approach to NCEA assessment* were lowest for students whose mothers had no qualification, and highest for those whose mothers had a university qualification. In terms of opportunity to learn, the only difference was that students whose mothers had no or trades level qualification were somewhat more likely to be in *comparative* learning environments; and there was an indication that they were more likely to be in an environment where students were *disengaged in learning*.

There were also differences in subject clusters: 89 percent of the students with mothers with university-level qualifications were taking traditional academic subjects in either arts (41 percent) or science (48 percent) cf. 42 percent of the students with mothers with no formal qualifications (6 percent arts, 36 percent science). Students with mothers with no formal qualifications were much more likely to be taking the vocational orientation subjects (34 percent) or contextual orientation (22 percent) cf. those whose mothers had a university qualification (4 and 5 percent, respectively). Possible reasons for this include that individuals in both generations had similar facility or difficulty with the academic subjects, that the young person was following a similar career path to their parents, and that parents who had completed a formal academic education themselves encouraged their children to take the more traditional subjects in preparation for post-secondary study.

Parental reports of their child's enthusiasm about school followed maternal qualification levels, as did, in reverse, reports of their being unhappy or bored with school: 23 percent of students whose mothers had no qualification were reported as being unhappy or bored with school, decreasing to 5 percent of students whose mothers had a university qualification. But maternal qualification levels were unrelated to parental reports of how much their child liked their teachers.

While participation in extracurricular sports activities was unrelated to students' mothers' qualification levels, those whose mothers had no qualification were less likely to report involvement in musical activities or between-schools competitions; and those whose mothers had a university qualification were more likely to take part in debating teams or practical investigations, and in youth parliaments or similar events.

Achievement

Maternal qualification levels were the only social characteristics to be reflected in differences in student scores on all the competencies measured at age 16. Generally, students whose mother had a university qualification had the highest scores, followed by those whose mother had a tertiary or senior secondary school qualification, then those whose mothers had no qualification, or a mid-secondary level or trades qualification.

These differences were reflected in the number of Level 1 NCEA credits gained: 35 percent of students whose mothers had no formal qualifications achieved fewer than 80 Level 1 credits, 60 percent achieved between 80 and 120, 4 percent achieved between 120 and 160 credits, and none achieved over 160 credits. The students whose mothers had university qualifications had a rather different pattern of NCEA credits: 5, 30, 56, and 10 percent, respectively. Some of these differences would also reflect differences in subject clusters which, as we saw in Chapter 3, offer different numbers of NCEA credits.

Teacher ratings of students' overall ability also followed maternal qualification levels, from an average of 5.5 on a scale of 1 to 10 for students whose mothers had no qualification, to 7.5 on a scale of 1 to 10 for students whose mother had a university qualification.

Parental satisfaction with their child's progress at school was highest for those whose mothers had a university qualification. Dissatisfaction with their child's progress increased from 7 percent for the latter, to 25 percent of those with no qualification, largely because parents felt their child was not making good progress.

Parents who had no qualification gave their children lower ratings for their *self-efficacy* and *responsibility* at home than did others. They were much less likely to want their child to go on to university, or other tertiary

education (or see these as a likelihood). However, the proportions of those who thought their child might take a professional job were much the same for this group as others, and consistent with the level who did see their child going on to university.

While there are marked differences between students that reflect maternal qualification levels, it is also worth remembering that these are not evident for all students: over half the students who had nonqualified mothers had achieved a Level 1 NCEA, and their parents were satisfied with their progress.

Students' reports of what they were proudest of in their achievements over the past year showed no differences related to maternal qualification levels, with one exception: those whose mothers had no qualification were more likely to mention relationships with others, and less likely to say that the reason they were pleased with their achievement was because their effort had paid off. When it came to things they were least proud of, this group and those whose mothers had a mid-secondary level or trades qualification were less likely to mention a difficulty or failure in their school work, and more likely to mention getting into trouble.

Interests, friendships, and home life

Risky behaviour and having *friends with risky behaviour* were most likely for students whose parents had no or mid-school/trades level qualifications.

Just under a quarter (24 percent) of students whose mothers had no formal qualifications had always enjoyed reading, whereas a half of those whose mothers had university-level qualifications had. TV watching features as one of the main interests for mothers with no formal qualification; and there was a matching pattern in the amount of TV the young people were allowed to watch between ages 8 and 14: 71 percent of those whose mothers had university qualifications had low rates of TV watching cf. 40 percent of those whose mothers had no formal qualifications.

These longstanding patterns were consistent with differences at age 16 in time use. Students with nonqualified mothers were less likely to often read (20 percent cf. 50 percent of those with university-qualified mothers), do their homework (31 percent cf. 56 percent), or sing or play a musical instrument (16 percent cf. 33 percent). They were more likely to often play competitive sport (45 percent cf. 23 percent) or interact with their friends (67 percent hung out with them cf. 39 percent of those with university-qualified mothers).

While students whose mothers had no qualification were as likely as others to read magazines, instruction manuals, emails and websites, and do word puzzles, they were less likely to read fiction, nonfiction, and daily newspapers. They were as likely to write emails and to text, and to write letters or songs, and keep a diary, but they were less likely to write reports or short stories.

Eighty-four percent of age-16 students with a university-qualified mother had a desk in their room cf. 64 percent of those with a nonqualified mother. The latter were more likely than others to have a video/DVD player (39 percent); their parents were more likely to share watching sport with them, but less likely to share physical activities, holidays, or interests or hobbies. But both parent and student reports indicated parent–child relationships were as close and supportive in this group as in groups where mothers had higher qualification levels.

Students whose mother had no qualification were more likely to more than occasionally download music or pictures, surf the Net more than occasionally, and use it to meet new people; they also looked more at their school website or Intranet.

Wellbeing

Maternal qualification levels were not reflected in different levels of reported happiness. Children of university- or tertiary-qualified mothers were more likely to be upset about something, but most were coping with this. Parental concerns were also undifferentiated by maternal qualification levels, with the exception that more parents were concerned about their child's school learning if the mother had no qualification.

Students whose mother had no qualification were more likely to say they had never been included in a group they really wanted to be in—but least likely to say they felt left out. They were also least likely to report losing their temper more than once, or to have fought with others at home quite often or more. Having sex quite often or more over the past year was most likely for this group and those whose mothers had a trade level or mid-secondary level qualification. Trying to fit everything into their time was more of an issue for those whose mothers had a university qualification.

Current family income

We see fewer associations with current family income than we saw for the other three social characteristics.

Participation

School-leavers' families had lower average incomes, and 42 percent had low incomes cf. 5 percent of the school stayers' families. A third were receiving benefits (mainly domestic purposes and invalids/disability). However, the difference between attendance patterns for current school students from low-income homes and others was not statistically significant.

Engagement

The low-income group was more likely to have got into trouble at school.

Achievement

As family income increased, so did parental desire for their child to have a university education; even so, it was not a universal desire among the very high-income families (68 percent). A similar trend was evident when parents were asked what occupation they thought their child might do as an adult: 48 percent of the very high-income families mentioned a professional occupation, decreasing to 31 percent of the low-income families.

Family income levels were unrelated to whether parents were satisfied with their child's school progress, whether they felt welcome in the school, or their views of the support their child got for their learning, but were related to their views of the support their child had in terms of their emotional wellbeing, with scores of 4–5 out of 5 most common among the very high-income group (46 percent), and least common among the low- and low-mid-income groups (20 percent).

Students from high-income families were most likely to take part in school extracurricular activities. That meant they were more likely to coach or lead a sports team. Mention of achievement in sport not surprisingly rose with income levels (from 20 percent of those from low-income families to 42 percent of those from very high-income families). None of the latter mentioned an achievement related to employment, but 10 percent of the students from low-income homes did.

Perhaps related to their greater engagement in sport, the very high-income group was most likely to have been praised lots of time for their achievement (24 percent cf. 12 percent of those from the low-income group).

Wellbeing

Just over a quarter of the students from low-income families said they had never been included in a group they really wanted to be part of during the past year cf. 11 percent of those from families with mid or higher incomes.

But this pattern was not evident in relation to being selected for a team or event. Only 10 percent of the students from low-income homes said they had never been without enough money cf. 38 percent of those from very high-income homes.

Different patterns related to different social characteristics

There are some differences in the patterns of young people's experiences and the development of learning identities that do relate to different social dimensions or characteristics. Bear in mind that we are looking at four different social *dimensions*: none of them on their own creates a completely different social *group*, and none of them are in a completely separate niche. Thus, if we look at gender differences, we see that at age 16 young women were somewhat more likely than young men to show the attitudes that stood them in good stead for school learning, with their interests out of school also more attuned to this; yet this is not true for the small group of female school leavers, who seemed to be trying to vault themselves into adulthood through romantic and sexual relationships, without any distinct identity for themselves. Although young men generally reported more risky behaviour, there was a higher proportion of young women who indicated drinking patterns of concern. This may be because they see drinking differently; but it is also a reminder that we cannot assume that "risk" is resident in only one side (or group) of a social dimension. What matters more than the group we see young adults belonging to is the behaviour and back behind that, the reasons for it, and what other behaviours and values go along with it. Thus, we may not worry quite as much about a young man who gets drunk from time to time if his values were more consistent with having a "satisfying life" than one who wants to "stand out".

Gender was largely unrelated to school performance. So was current family income, though more of the school leavers came from low-income homes. Maternal qualification and ethnicity *were* associated with differences in school performance, and these two social characteristics were also the two that show the most overlap, reflecting the narrower and more limited opportunities available to the parents, and grandparents, of Māori and Pacific students. These students were also more likely themselves to be in the "vocational" and "contextual" subject clusters; and to show less satisfaction with their subject mix. They were less engaged in school, and less positive about the kinds of learning opportunities they had in their classes. Thirty percent had been hassled about their culture over the past year. Their parents were largely not satisfied with their progress at school, and did not think the support they got from their teachers was at a high level.

Out-of-school factors also played a part, with more risky behaviour and friends with risky behaviour among Māori and Pacific students. Over the previous years, this group was less likely to have enjoyed reading, and had watched more television; their age-16 performance had been preceded by lower performance levels on the cognitive and attitudinal competencies. So it is likely that what lies behind their current lower achievement at this crucial stage of senior secondary qualifications is the development of ambivalent learning identities, not able to entirely positively identify with school, or the kinds of activities associated with school, encountering negative reactions to their identity, not seeing themselves as among the most successful kinds of learners, finding other ways to make their mark that in turn make it harder to find meaning or success through school. Thus to see real improvements in Māori and Pacific students' achievement, and substantial gains in those who remain at secondary school and leave with meaningful qualifications, we see the importance of early learning engagement and achievement, to which learning opportunities at home, early childhood education, and school all contribute, as well as ensuring that their current class experiences are engaging.

15. Growing identities

It has been a privilege to follow the participants in the Competent Learners study to this point, where they stand on the edge of adulthood, almost all still living with their families, and most still having much of their week-day life shaped by school classes and interactions. Many were still content to be at school; and the longitudinal nature of this study shows us that a substantial part of presence, engagement, and performance in the senior secondary school stems from the learning identities that have coalesced over previous experiences, interactions, and achievements. It was easier to see school positively if one could associate it with previous gains and recognition, and if the work of school was of a piece with the kinds of ways one spent time at home, the kinds of conversations one had had with family and then friends. These learning identities were not fixed entities. Current learning environments were also important.

Not every young person who was able to be absorbed in their learning, in gaining new knowledge, skills, and understanding, or who saw learning as something that came with change and effort within rather than (simply) external recognition, did well at school. Openness to learning is not the same thing necessarily as openness to school, or the way in which learning opportunities are framed in our secondary schools. Our findings make sense of the entrepreneurs who do not cut a memorable path at school, and who were not concerned to score highly on assessments. They also make sense of the few among those who had already left school who had been "pulled" away to a clearer and more congenial learning path.

Yet while we can all think of those who seem to have developed positive learning and problem solving identities that are not framed by their school performance, there are more young people whose lack of school engagement and learning gain seems to preclude these identities. If we take a broad look at the young people in this study, around 70 percent showed good levels of participation in and engagement with school or learning outside school. But around 30 percent had attendance levels that were not sufficient to sustain good levels of engagement, or performance, or they had already left school and were anxious to establish themselves as adults.

Just over half the students' parents thought they remained enthusiastic about school; 75 percent thought their children enthusiastic when they were 12. Now, with the end of secondary school in sight, around a fifth of the remaining students were not convinced that they should or could remain at school until the end of Year 13.

Student perspectives of their current school learning environments give us some insight into why many do not show enthusiasm. It should be noted that though their levels of restlessness have risen since their first years at secondary school, other aspects of their engagement with school and feeling affirmed (recognised, treated fairly) did not change markedly between the lower and secondary schools. Tackling NCEA qualification assessments has not caused greater anxiety or disaffection—or improved motivation levels.

What we learn from the students' views is first, that most students experience a range of different learning opportunities. Thus within the same school, in the same subject clusters, some classes are highly enjoyed—and teachers of these classes report greater attention, self-management, and thinking among the students who said they enjoyed these classes—and some are not. Second, the classes that are more enjoyed show teachers making more of an effort to connect with students, and show them the connections between "school subjects" and the world beyond; these classes also encourage confident learning because they offer clarity, support, and patience while taking the students into new realms. There is more of a focus on learning, and less on behaviour management. Teacher perspectives also indicate that classes students enjoy provide somewhat more opportunities for students to develop the thinking and self-management aspects of the key competencies—the habits and frames of mind that will allow them to keep learning after they leave the structures of school. The

analysis of competency development in this study has shown the importance of both what we have called "attitudinal" and the cognitive competencies for school performance, and age-16 engagement levels, and thus supports the now explicit inclusion of the key competencies in the curriculum we will offer our children and young people.

Both teacher and student perspectives also show that these opportunities to develop the thinking and self-management aspects of the key competencies are still relatively constrained. Teachers will need support in order to integrate these more into subject-framed classes. While mathematics and science classes were more likely to be among the least enjoyed classes, there was no particular pattern to the subjects that were taught in the most enjoyed classes, suggesting that engaging learning opportunities are not subject-specific.

We do find however that there are some subject-specific differences when it comes to what NCEA standards are offered—what further pathways are possible—and what success students enjoy in relation to this new approach. We do not see overt streaming any longer, but the vocational/academic subject divide still remains, and with it lower levels of school engagement and feeling affirmed at school for those in the nonacademic clusters, underneath a seemingly much wider choice of subjects. Student choice is still constrained by views of how well students will do, based on their previous school performance (attitude to work as well as marks on school assessments). While most students and their parents think of their subject choice in terms of either inherent interest or its role in leading onto something desirable, close to 30 percent of students, and more of those who had left, wished they had had better advice on the subjects they took, and 20 percent were not satisfied with their subject mix.

The NCEA has certainly expanded the opportunities for gaining recognition for learning. It is also more complex in some ways. The fact that so many students were gaining credits at two of its levels in any one year, and the fact that some students, mostly in "vocational" course clusters, were gaining Level 2 credits while they had yet to complete the 80 Level 1 credits needed to gain their Level 1 NCEA qualification raises questions about how teachers are deciding which standards to offer in their courses, and how useful these mixes are for different students as they look at their options for pathways from school. That is something we aim to investigate in the next phase of the study, when we will return to the young people as they turn 20.

We did not find that students chose courses on the basis of the kind of NCEA credits they offered, the number on offer, or the chance for reassessment; nor did differences in these separate out most enjoyed from least enjoyed classes. Parents' views did not indicate that student levels of intrinsic motivation toward their work were negatively affected. Thus some of the new aspects of senior school qualifications that some have suspected of diverting students into easy (nonchallenging) options do not seem to be seen by students in this way. Parents' views of NCEA seemed to reflect their sense of how their own child was faring: NCEA acted as a lightening rod to voice various concerns. It is certainly true that teachers of classes that students found their most enjoyed were more likely to say that students had taken up opportunities for reassessment, and if so, had succeeded on their second attempt; but this applied to a small number of students, and is consistent with these teachers' reports of students having stronger approaches to their NCEA work.

There were quite marked changes in some aspects of the young people's behaviour. These were mainly around trying out adult possibilities. A third had had sex over the past year—and half had fallen in love over that time too. Most drank alcohol sometimes or more often and around half had done something they regretted while drunk. They were more aware of not having enough money for the activities that now appealed. In their friendships, they were more likely to share activities that did require some money, including parties, shopping, and going out to entertainment. But the overall range of their values remained much the same, as did the quality of their relationships with their family and friends.

In fact we saw much more consistency between age 14 and age 16, than we saw between age 12 and age 14. Early adolescence appears to be a key period for consolidating learning identities, and laying down paths and values in out-of-school activities and relationships that support these. On the negative side, high scores for risky behaviour and having friends with such behaviour as well were much more likely at 16 if the same patterns were there at 14; the same was true for having "standing out" values at the expense of values that found purpose in good relationships with others, and meaningful work.

Most of the young people remained close to their families. Such closeness does not always mean that they share everything about their lives. Parents were also treating the 16-year-olds as close to adulthood: keeping an eye on them, concerned from time to time if their child was having difficulty, but not seeking to control them. There were fewer parental rules or expectations than there had been at age 14, but almost all parents had some expectations. The things parents shared with their children were more around adult ways of coming together: talking and eating, with fewer joint activities. Friends had become more important to the study participants when they were 14, and the role of friendship in their lives has continued to enlarge. Parents are still more likely to be the people a student would talk to most about school, but friends are key sources of support, respect, and trust. Friends are even more important to those who have left school.

One of the key findings of this report, as in earlier reports from the Competent Learners study, is that though we can trace some different paths through time, through how children and then young people spend their time, the habits and competencies they develop through that use of time, we do not see entirely predictable trajectories or entirely separate groups of young people. We can discern some of the signs of disengagement and turning to behaviours and relationships that are unlikely to provide positive meaning for the future. If asked to provide some quick indicators that things are going well, we would point to the enjoyment of reading (and not just the fact of reading), to having some interests that provide goals and challenge, take place within relationships, have a dimension of communication or use of symbols, and can also provide experiences of achievement. Conversely, two very quick indicators that things may not go well in future are being too dependent on television or computer games as a way to spend time, or becoming involved in bullying.

What our analyses cannot provide are recipes, with precise amounts guaranteed to produce a satisfactory result. The contexts in which children and young people act and experience also have a bearing. Thus—to take a simple example—sports provide a context for the development of competencies and relationships; they are the extracurricular activity most likely to be offered by schools, with opportunities for young people to also gain important experience by taking responsibility and stepping up to leadership. But the opportunities for consolidation of a positive learning identity can differ. Picture the sports-player who comes home and talks with his or her family about both the game and other things, who celebrates with friends but without getting drunk and in that state taking risks that would not seem so manageable or attractive when sober, and who finds enjoyed learning opportunities in school classes. Then picture his or her team mate who has nothing but the game and the celebration, and whose classes do not ask him or her to be fully involved in learning.

The fact that learning identities have consolidated by the senior secondary school but still contain fluidity, and openness to experience, gives continued optimism. It also means we need to look at the whole of a young person's life, and what gives them meaning. Only then will we see the particular possibilities, as well as potential risks. We need to see a wider (or deeper) picture to gauge whether we are providing learning opportunities that will support and extend confident and open learning identities; and open out those learning identities that have turned to resistance or the seeming safety of repetition. For there are still too many young people who have either left school at 16, or who may be at school, but not engaged in it, and who are thus moving into adulthood with far less of the understanding, skills, and habits that they need for real participation and contribution in an increasingly complex world.

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Appendix 1: Scale variables, history variables, and cluster variables

The students, their teachers, and parents were asked a series of questions about their attitudes to or opinions about aspects of the students' school and out-of-school life. The responses were measured on Likert-type scales. These questions were used to construct the scale variables. Where similar variables were constructed at both ages 14 and 16, a listing of the items used each time is given.

Where the questions were of the "tick if true for participant" type (binary responses), we used cluster analysis to define clusters of participants who tended to give similar responses to groups of the questions of interest.

We have, for the past several rounds of analysis, used some history variables, based on responses to similar questions asked each time we interviewed the participants or their teachers or parents. In many ways these history variables are similar to the cluster variables, but the method of defining the categories for the history variable has been more subjective.

In all, over 47 of these new measures have been developed. In the table below, the measures are listed alphabetically, and the numbers refer to the order in which they are listed in the text that follows.

Derivation of measures

Scale variables

These variables were constructed from:

- Student responses to the stem:
  - School is a place where …
  - English/favourite subject/least favourite subject is a class where …
  - I feel I'm doing well at school when …
  - When I'm at home …
  - In the past year I've had happen to me …
  - My friends are …
- Parent responses to the stem:
  - Relationships at home
  - Student's way of doing things (at home)
- Teacher responses to the stem: Characteristics that describe the student in your class … were used to construct the attitudinal competencies described in the first report on the Competent Children, Competent Learners study at 14 (Wylie, C., Ferral, H., Hodgen, E., & Thompson, J., 2006). In the lists that follow, an (r) indicates that the scale of the item was reversed before being used to form the scale variable.

School is a place where …

Table 108: Engaged in school

A high score corresponds to positive (good) engagement in school.

Age 16	Age 14
(α = 0.79) Item–scale correlations between 0.41 and 0.61; *n* = 416	(α = 0.79) *n* = 447
• I like my teachers • I keep out of trouble • I enjoy learning • I want to leave school as soon as I can (r) • I get bored (r) • I get tired of trying (r) • I skip classes (r) • I feel restless (r)	• The discipline rules are fair • I keep out of trouble • I like my teachers • I enjoy learning • I get tired of trying (r) • I get too much work to do (r) • I skip classes (r) • I want to leave as soon as I can (r)

Table 109: Affirmed at school

A high score corresponds to being affirmed.

Age 16	Age 14
(α = 0.80) Item–scale correlations between 0.32 and 0.55; *n* = 416	(α = 0.73) *n* = 447
• I feel I belong • I am treated like an individual • Students have a say in how our school runs • I am treated like an adult • The discipline and rules are fair • I feel safe • Teachers ask for our views about how to make the school and our class better • I learn most things pretty quickly • I can take leadership roles if I want to • It's important to do my best • I get all the help I need	• I am treated like an individual • I feel I belong • I feel safe • I get all the help I need • I learn most things pretty quickly • It's important to do my best • I am treated like an adult • I have good friends

Table 110: Satisfied with subject mix

(α = 0.70) Item–scale correlations between 0.46 and 0.56; n = 420

- I am happy with my subjects this year
- My parent/s are happy with my subjects this year
- The subjects I am doing will help me do the subjects I want to do next year
- A high score corresponds to satisfaction with the subjects taken.

I feel I'm doing well at school when …

A high score on both scales corresponds to using internal/external markers of success.

Table 111: Student uses internal markers of achievement

Age 16	Age 14
(α = 0.86) Item–scale correlations between 0.55 and 0.70; n = 420	(α = 0.86) n = 447
• I do my very best • I learn something interesting • I solve a problem by working hard • I work really hard • I get a new idea about how things work • Something I learn makes me think about things • What I learn really makes sense • I catch on quickly	• I solve a problem by working hard • I learn something interesting • I do my very best • I get a new idea about how things work • Something I learn makes me think about things • I work really hard • What I learn really makes sense • I catch on quickly

Table 112: Student uses external markers of achievement

Age 16	Age 14
(α = 0.84) Item–scale correlations between 0.53 and 0.72; n = 420	(α = 0.86) n = 447
• I know more than other people • Others get things wrong and I don't • I'm the only one who can answer questions • I don't have to try hard • I don't have anything hard to do • I get good marks/results	• I know more than other people • Others get things wrong and I don't • I have the highest test marks • I don't have anything hard to do • I'm the only one who can answer questions • I don't have to try hard

English/favourite subject/least favourite subject is a class where …

We have a choice between forming separate scales for each of the classes, and also for attitudes to the class and attitudes to the teacher, or forming overall scales: attitude to class across the three classes; to the teacher across the three teachers; to English class and teacher, favourite class and teacher, and least favourite class and teacher; or even a single overall scale to all three classes and all three teachers.

For each of the three classes and the combined classes, the class and teacher scales are strongly correlated ($0.8 < r < 0.9$), which means that, while they do measure slightly different aspects of the student–class interaction (at least in theory), only one could be used in a linear model at a time (using both would mean that the model

would have problems with collinearity). The strength of the correlations is indicative of the extent to which, at age 16, students' attitudes to their teacher and class are not separated. They tend to like a class in which they have an effective teacher who they like, and to dislike a class as much on the basis of the characteristics of the teacher as the subject being taught.

The favourite subject and least favourite subject measures are weakly correlated, which is indicative of the diversity of opinion on the students' favourite and least favourite classes and teachers.

In the analyses, the composite class and teacher (across all three classes) measures were used, as well as the subscale measures, depending on which was more appropriate.

All the other scales are formed across all three subjects

Table 113: Positive learning environment in English/favourite subject/least favourite subject

Age 16 (*n* = 420)	Age 14 (*n* = 446)
Teacher only	
• My teacher treats me fairly • I can count on the teacher for help when I need it • The teacher really understands how I feel about things • I like the teacher • I understand my teacher's attitudes and rules	• I like the teacher • My teacher treats me fairly • The teacher really understands how I feel about things • I understand my teacher's attitudes and rules
Class only	
• My teacher is interested in my ideas • The teacher gives us clear expectations of what we are to do • My teacher gives clear instructions • My teacher knows about what interests us • My teacher keeps teaching till we understand • I gain knowledge that will be useful for my future • The teacher spends most of their time helping us to learn • We discuss different ways of looking at things/interpretations • The teacher gives useful feedback on my work that helps me see what I need to do next and how to do it • The teacher uses examples that are relevant to my experience • The teacher is happy to explain things more than once • I get to think about ideas and problems in new ways • I can make mistakes and learn from them without getting into trouble • I can try out new ideas/ways of doing things	• My teacher gives clear instructions • The teacher helps me do my best • I can count on the teacher for help when I need it • The teacher gives us clear expectations of what we are to do • My teacher knows about what interests us • My teacher is interested in my ideas • My teacher keeps teaching till we understand • The teacher gives useful feedback on my work • The teacher is happy to explain things more than once • The teacher uses examples that are relevant to my experience • I enjoy doing the homework I get

Details	Cronbach's alpha	Range of correlations with scale
English		
Class	0.91	0.39–0.77
Teacher	0.88	0.60–0.78
Favourite subject		
Class	0.88	0.42–0.64
Teacher	0.84	0.61–0.69
Least favourite subject		
Class	0.90	0.33–0.76
Teacher	0.86	0.31–0.72
All subjects combined		
Class	0.89	0.21–0.54
Teacher	0.79	0.29–0.54

Table 114: Absorbed in learning, combined from all three subjects

A high score corresponds to being absorbed in learning.

Age 16	Age 14
(α = 0.87) Item–scale correlations between 0.27 and 0.57; n = 420	(α = 0.86) n = 447
• When I'm doing something, I think about whether I understand what I'm doing • I organise my time so that I get things done • When I finish my work, I check and make changes if needed before handing it in • I meet any goals that I set myself • I like to reflect on how I've learnt something (the method I used) • I enjoy doing the homework I get	• I get totally absorbed in my work • Things I do outside school help my learning • When I finish my work, I check to make sure it is correct • Students work out problems together • When I'm writing something, I think about whether I understand what I'm doing • I can do the hardest work if I try • I can get help at home if I need to

Table 115: Disengaged in learning, combined from all three subjects

A high score on this scale corresponds with the behaviours or activities taking place in class.

Age 16	Age 14
(α = 0.80) Item–scale correlations between 0.30 and 0.60; *n* = 420	(α = 0.85) *n* = 447
• I muck around • I can get away with not doing much work • The class gets interrupted (e.g. by external events, messages) • I behave in a way which annoys the teacher • We keep doing the same things without learning anything new	• I behave in a way which annoys the teacher • I muck around • I can get away with not doing much work • We keep doing the same things without learning anything new • I don't like asking my teacher questions • We get too much homework

Table 116: Disrupted learning environment, combined from all three subjects

A high score on this scale corresponds to the behaviours or activities taking place in class.

Age 16	Age 14
(α = 0.76) Item–scale correlations between 0.21 and 0.50; *n* = 420	(α = 0.84) *n* = 447
• The class gets interrupted (e.g. by external events, messages) • Students don't listen to what the teacher says • The teacher spends most of the time telling us what to do • The teacher spends most of the time telling us how to behave • Other students are distracting	• Other students are distracting • The class gets interrupted • Students don't listen to what teacher says

Table 117: Attitude to work, combined from all three subjects

(α = 0.81) Item–scale correlations between 0.20 and 0.56

A high score corresponds to a positive attitude to work.

- I don't know how to do the work (r)
- I plan to drop the subject as soon as I can (r)
- I do well
- I'm confident I can master the skills being taught
- The NCEA credits are easy to get
- I will get a lot of NCEA credits in this class

Table 118: Comparative learning environment, combined from all three subjects

A high score corresponds to the comparisons being made in class. Although there are only two items used for this score, we effectively had up to six items, two from each of the three teachers.

Age 16	Age 14
(α = 0.77) Item–scale correlations between 0.44 and 0.57; *n* = 419	(α = 0.79) *n* = 447
• The teacher tells us how we compare with other students • The teacher tells us who has the highest and lowest marks for their work	• The teacher tells us how we compare with other students • The teacher tells the whole class who the highest and lowest marks for their work

When I'm at home …

Table 119: Family communicates well

A high score corresponds to a family with good communication.

Age 16	Age 14
(α = 0.73) Item–scale correlations between 0.32 and 0.54; *n* = 447	(α = 0.80) *n* = 447
• My Mum can tell when I'm upset about something • I tell my family my problems and troubles • My family checks that I've done my homework/what I need to do • My Dad can tell when I'm upset about something • I talk about what I'm reading • I can talk about my hopes and plans for the future • I do interesting things with my parents	• My Mum can tell when I'm upset about something • I tell my family my problems and troubles • My family checks that I've done my homework • My Dad can tell when I'm upset about something • I talk about what I'm reading • I can talk about my hopes and plans for the future • My family asks me about school • I do interesting things with my parents

Table 120: Family pressure

A high score corresponds to a family where individuals feel pressure.

Age 16	Age 14
(α = 0.85) Item–scale correlations between 0.41 and 0.73; *n* = 447	(α = 0.80) *n* = 447
• My Mum is always trying to change me • My Dad is always trying to change me • Home is more friendly if I just do what my parents want • My parents want to control whatever I do • My parents expect too much from me • My family worry too much about what I do with my friends • My parents have their own problems so I don't bother them with mine • I need more privacy	• My Mum is always trying to change me • My Dad is always trying to change me • Home is more friendly if I just do what my parents want • My parents want to control whatever I do • My parents expect too much from me • My family worry too much about what I do with my friends • My parents have their own problems so I don't bother them with mine • I need more privacy

Table 121: Inclusive family

A high score corresponds to a family that is inclusive.

Age 16	Age 14
(α = 0.85) Item–scale correlations between 0.50 and 0.67; *n* = 447	(α = 0.80) *n* = 447
• I get treated fairly • I am comfortable • My family respects my feelings • I get help if I need help • The expectations are fair • My family asks me about school/what I do • Everyone is too busy to bother about me (r)	• I get treated fairly • I am comfortable • My family respects my feelings • I get help if I need help • The expectations are fair • Everyone is too busy to bother about me (r)

Table 122: Supportive family

A high score corresponds to a family that is supportive.

Age 16	Age 14
(α = 0.85) Item–scale correlations between 0.59 and 0.68; *n* = 447	(α = 0.87) *n* = 447
• I trust my Dad • My Dad is warm and loving towards me • I trust my Mum • My Mum is warm and loving towards me • I feel close to my family • My family really help and support each other	• I trust my Dad • My Dad is warm and loving towards me • I trust my Mum • My Mum is warm and loving towards me • I feel close to my family • My family really help and support each other

In the past year I've had happen to me …

Table 123: Risky behaviour

A high score corresponds to having shown risky behaviour.

Age 16	Age 14
(α = 0.79) Item–scale correlations between 0.29 and 0.63; *n* = 444	(α = 0.80) *n* = 447
• Doing something you regretted when drunk • Drinking alcohol • Getting in trouble with the police • Having sex • Getting into a physical fight • Breaking up with a boyfriend/girlfriend • Getting in trouble at school • Having to lie about something someone else did • Getting behind with school work	• Doing something you regretted when drunk • Drinking alcohol • Getting in trouble with the police • Having sex • Getting into a physical fight • Breaking up with a boyfriend/girlfriend • Getting in trouble at school • Having to lie about something someone else did • Falling behind with school work

Table 124: Rejection

A high score corresponds to having been hassled or rejected.

Age 16	Age 14
(α = 0. 74) Item–scale correlations between 0.33 and 0.54; *n* = 444	(α = 0.75) *n* = 447
• Feeling left out • Being pressured to do something you did not want to • Being hassled about your body size/shape • Being bullied/hassled at school • Hassling/bullying someone at school • Being hassled about your sexuality • Being hassled about your culture • Coping with body changes	• Feeling left out • Not having enough freedom • Losing control of your temper • Having nothing to do/being bored • Being pressured to do something you did not want to • Not having enough money • Losing a friend • Trying to fit everything into your time • Being hassled about your body size/shape • Fighting with others at home • Being bullied/hassled at school • Coping with body changes

Table 125: Achievement and praise

A high score corresponds to having an achievement or being praised.

Age 16	Age 14
(α = 0. 68) Item–scale correlations between 0.31 and 0.51; *n* = 444	(α = 0.71) *n* = 447
• Being praised for achievement • Getting selected for a team or event • Making a new friend • Being included in a group you really wanted to be in • Supporting a friend in trouble • Taking action about a situation that concerns you • Trying to fit everything into your time	• Being praised for your achievements in sport or cultural activity • Getting selected for a team or event • Being praised for achievements • Making a new friend • Being included in a group you really wanted to be in • Supporting a friend in trouble • Taking action about a situation that concerns you • Being praised for your achievements in a paid work situation

Table 126: Adverse events

(α = 0.58) Item–scale correlations between 0.24 and 0.47

A high score corresponds to having had one or more adverse events in the year.

- Having sex when you didn't want to
- Death of a friend
- Had an accident/been injured
- Shifting to live with a different parent or family member/changing where you live
- Family break-up
- Health problem

My friends are …

The students still at school were asked questions about their school friends, or friends at school, and the young people who had left school were asked more general questions about friendships. However, the items asked were sufficiently similar that the responses to the slightly different items could be combined into a single scale score.

Table 127: Friends with risky behaviour

A high score corresponds to having friends with risky behaviour.

Age 16	Age 14
(α = 0.81) Item–scale correlations between 0.48 and 0.72; *n* = 447	(α = 0.84) *n* = 446
• My friends smoke cigarettes • My friends think it is okay to have unsafe sex • When my friends and I party we like to drink alcohol • My friends smoke marijuana • My friends do other drugs • My friends get into trouble at school	• My friends smoke cigarettes • My friends think it is okay to have sex before you are 16 • My friends like to party and drink alcohol • My friends wag school • My friends smoke marijuana • My friends get into trouble at school

Table 128: Solid friendships

A high score corresponds to having solid friendships.

Age 16	Age 14
(α = 0.77) Item–scale correlations between 0.47 and 0.60; *n* = 447	(α = 0.79) *n* = 446
• My friends respect my feelings • I trust my friends • My [school] friends are good friends • I wish I had different friends [at school] (r) • I feel alone or apart when I am with my friends (r)	• My friends listen to what I have to say • My friends respect my feelings • I trust my friends • My school friends are good friends • My friends are people my parents like • I like to get my friends' point of view on things I am concerned about • My friends push me to do stupid things (r) • I wish I had different friends at school (r) • I feel alone or apart when I am with my friends (r)

Table 129: Extending friendships

A high score corresponds to the existence of friendships with these attributes.

(α = 0.74) Item–scale correlations between 0.38 and 0.55

- My friends push me to do well
- I like to get my friends' point of view on things I am concerned about
- My friends talk about hopes and plans for the future
- My friends have introduced me to interesting activities that I would not have know about otherwise
- My friends listen to what I have to say
- My friends enjoy learning new things [at school]
- My parents like my friends

Student's way of doing things (at home)

High scores on these scales correspond to the young person having the attributes.

Table 130: Parental view of student self-confidence

(α = 0.79) Item–scale correlations between 0.36 and 0.57

- Enjoys new experiences or challenges
- Is confident in his/her interactions with adults
- Expresses his/her views and needs appropriately
- Clearly explains things s/he has seen or done, so that you get a very good idea of what happened
- Asks a lot of questions
- Takes active interest in the outside world beyond him/herself
- Asks for help or support if s/he needs it
- Is good at negotiating with friends
- Presents his/her point of view to an adult in an appropriate manner even when there's a disagreement

Table 131: Parental view of student self-efficacy

(α = 0.82) Item–scale correlations between 0.40 and 0.61

- Takes responsibility for his/her actions
- Meets any goals s/he sets her/himself
- Shows respect for adults
- Is a good listener
- Takes optimistic view of life
- Is willing to learn from his/her mistakes
- Learns from feedback
- Sees others' points of view
- Is influenced by peer pressure to do something out of character (r)
- Acts without thinking of the consequences (r)

Table 132: Parental view of student responsibility

(α = 0.80) Item–scale correlations between 0.37 and 0.60

- Is able to remember and carry out instructions after hearing them only once
- Takes responsibility for getting organised
- Passes on messages accurately
- Finishes all his/her chores
- Follows what is being talked about in a conversation and stays on the same topic
- Asks for something to be repeated or explained again if s/he do not get it the first time
- Persists with solving a problem, even when things go wrong for a while
- Has a good concentration span when working on things that interest him/her

Table 133: Parent–child friction at age 14

(α = 0.73)

- Home would be friendlier place if the student would do as s/he was told
- I worry that their friends have too much freedom
- There are things about the student I am really trying hard to change
- Privacy is source of friction between the student and other family members
- There is a lot of friction in our home
- I trust the student to behave appropriately when in the company of his/her friends (r)
- I generally like their friends (r)
- I see the student's friends as a positive influence on him/her (r)

Listings of other scale variables

Teacher perception of class and student

Responses to several of the items were used to make the attitudinal competencies, as in previous years. Other questions asked at age 16 were used to make some descriptors of the class environment. The items are in response to an overall descriptor "In this class:" and in general the three classes need to be treated separately, with the situation in the English classes being used to represent the students' most "typical" experiences.

Table 134: Students involved and active

(α = 0.81, 0.80, 0.78 for English, favourite and least favourite subjects, respectively) Item–scale correlations between 0.33 and 0.66

- Students do a lot of group activities and discussions
- We have a lot of fun
- Students have the opportunity to act on issues that concern them
- Students interact with people outside school as part of school work (e.g. on fieldtrips)
- Students work out problems together
- Students are encouraged to assess each other's work and give feedback
- Students are encouraged to lead group projects or class activities
- When students work in groups, they solve their own conflicts

Table 135: Feedback and support

(α = 0.80, 0.78, 0.77 for English, favourite and least favourite subjects, respectively) Item–scale correlations between 0.24 and 0.68

- I model the skills and attitudes I would like the students to develop
- Students make mistakes and learn from them without getting into trouble
- Most of my time in class is spent helping students learn
- I encourage students to ask for assistance or support
- I encourage students to discuss things with me
- I use different approaches for different students
- The feedback I give students shows them their weaknesses
- The feedback I give students shows them their strengths
- The feedback I give students shows them their next steps

Table 136: Reflective learning

(α = 0.68, 0.68, 0.69 for English, favourite and least favourite subjects, respectively) Item–scale correlations between 0.36 and 0.55

- I encourage students to think and talk about how they are learning (the methods they are using)
- Students are given input into the context and direction of learning activities
- Students have the opportunity to set their own learning goals
- Students are given time to reflect on their learning

Table 137: Students working alone

(α = 0.45, 0.69, 0.64 for English, favourite and least favourite subjects, respectively) Item–scale correlations between 0.15 and 0.58

- Students do a lot of practical activities (r)
- Students do a lot of written activities by themselves
- Students take a lot of notes

Table 138: Teacher view of student approach to NCEA assessment

(α = 0.92, 0.92, 0.93 for English, favourite and least favourite subjects, respectively) Item–scale correlations between 0.19 and 0.85

- S/he does the bare minimum to get the credits (r)
- S/he is not interested in the work if there are no credits to be gained (r)
- S/he works hard regardless of whether a topic is assessed or not
- S/he is organised and well prepared for assessments
- S/he can cope with pressure of internal assessments
- S/he uses time well in assessment tasks
- S/he always strives for excellence
- S/he always tries to learn from my feedback on trial assessments
- S/he typically questions judgements and grades awarded
- S/he is realistic about likely achievement in assessment tasks
- S/he makes impulsive decisions to not do assessments (r)
- S/he makes strategic decisions to not do assessments (r)
- S/he is able to cope with pressure of external assessments

The three NCEA measures from the three teachers were moderately correlated (0.50 and 0.56 between most and least enjoyed subject teachers and English teachers, respectively, and 0.51 between most enjoyed subject teachers and English teachers). The pattern of moderate levels of agreement between teachers was noticeable for the other scales, too. The most strongly correlated were the *focused and responsible* subscales (correlations between 0.53 and 0.56), followed by *thinking and learning* (between 0.39 and 0.45), *NCEA assessment*, then *social difficulties* (between 0.29 and 0.42), and *social skills* (between 0.29 and 0.33).

Cluster variables

These variables were constructed from a range of multiple response questions (and occasionally other variables, sometimes dichotomised or converted into a series of binary variables):

- Leisure interests listed by parents when the students were 14
- Leisure interests mentioned by students at age 14
- Family income, and the proportion of income spent on housing, the family's ability to pay bills each month and how much money is left after paying the bills each month at age 14
- The things that are most important to the student, both now (at 16) and when they are an adult
- Student subject choices (for those still at school)

The clusters described here are those that proved to define groups with clear mean differences in competency scores and/or scale scores.

Cluster membership cannot be entirely clear, nor unambiguous. However, it seems that the clusters have allowed us to define subgroups within the sample who respond differently on a variety of measurements.

Student values

Table 139: Student values at age 16

The students were asked to indicate the three things that are most important to them now, and the thing(s) that they think will be most important to them as adults. A cluster analysis yielded three clusters:

- Having a satisfying life (wanting to be helpful or kind, have a good sense of humour, enjoy the things they do, have a happy family life, have an interesting job, being creative)
- Standing out (wanting to look good/cool, have money and friends, have an important job, and do well at sport)
- Aspirational (wanting to be with family/whänau/fanau, do well at school and sport, get a good education, have an important job, influence other people, and have good health)

The full list of options from which they could choose was:

Current values	Future adult values
• wearing the right clothes/looking cool • being good looking • having money to spend • being helpful or kind • having the latest things • being with family/whänau/fanau • having a good sense of humour • doing well at school • doing well at sport • doing well at an interest outside school • going to church • having lots of friends • enjoying the things I do	• good looks • happy family life • lots of money • lots of friends • an interesting job • a good education • an important job • influencing other people • being creative/making something new • taking part in church/spiritual activities • good health

Table 140: Student values at age 14

The students were asked to indicate the three things that are currently most important to them, and the thing(s) that they think will be most important to them as adults. A cluster analysis yielded three clusters:

- Anchored/achieving
- Anchored
- Standing out

A full list of options is:

Current values	Future adult values
• wearing the right clothes/looking cool • being good looking • having money to spend • being helpful or kind • having the latest things • being with family/whänau/fanau • having a good sense of humour • doing well at school • doing well at sport • doing well at an interest outside school • going to church • having lots of friends • enjoying the things I do	• good looks • happy family life • lots of money • lots of friends • an interesting job • a good education • an important job • influencing other people • being creative/making something new • taking part in church/spiritual activities • good health

Motivation

In these reports, "motivation" refers to the perceived value of education, and long-term ambition of the student and for the student by their parent. This is clear from the items used to construct the clusters. The clusters formed at age 14 were used again at age 16, as they were useful indicators of the value placed on education early in secondary education.

Table 141: Motivation

The three clusters used were named:

- University/professional orientation; high faith in gains from school
- Less positive of gains from school and less sure of future goals
- Aiming for skilled/unskilled jobs; low conviction about gains from school

The items listed below were all either binary responses or responses on a Likert-type scale that were converted to binary variables.

Some of the things the students enjoy about the school are	The student thinks that they will have a career that is
• good teachers • independence/treated as an individual/adult • facilities • extracurricular activities	• professional • skilled • unskilled/unknown
As an adult the student thinks that the most important things will be	**The student thinks that when they leave school they**
• happy family life • lots of money • lots of friends • an interesting job • a good education • an important job • doing well at sports • influencing other people • being creative/making something new • taking part in church/spiritual activities • good health	• will study further • will travel • will get a job • have no idea what they will do
The parent's hopes for the student's future education are	**The parent thinks that the student will have a career that is**
• as far as they want to/are able to go • university • other tertiary • end of secondary	• professional • skilled • unskilled/unknown as yet
The student aims to leave school	**The parent perceives that an expectation that the student would do well at school is**
• at the end of Year 12 • at the end of Year 13 • unsure	• like us [their family] • not like us
The student gains knowledge useful for their future in English/mathematics/science (entered as separate variables)	•
• agree • neutral/disagree	

Student interests

The students were asked to rate how often they were involved in various leisure activities on a scale of often/most days, once or twice a week, less than once a week, and never. A comparison between the age-14 and age-16 clusters indicated that the age-14 clusters showed greater association with the age-16 competencies, so we have used these clusters at age 16, too.

Table 142: Student interests

The four clusters were:

- Sports player
- Computer games player/no strong interests
- Reading, arts, and sport
- Creative interests

The full list of options is:

- watch television
- read
- use a computer
- play computer/video games etc.
- hang out with friends
- do homework
- play sport for fun
- go to art/music/dance classes
- do exercise/physical training
- play competitive sport
- make things—a hobby or craft
- practise singing or playing a musical instrument
- cultural activities, e.g. kapa haka

Student subject choices

Separate cluster analyses were run on student subject choices for the Year 11 and Year 12 students. In both instances, four similar clusters were found to be most appropriate.

Table 143: Subject clusters

- Traditional academic: arts orientation. These students were more likely to take AS in maths, visual art, music, economics, accountancy, graphics, one or more languages, geography, history, design or fabric technology, the English US that requires reading a range of texts, and at Level 2 more creative options among the English AS, photography
- Traditional academic: science orientation. These students were more likely to take AS in maths (including standards in geometry), physical education, economics, science subjects (science in Yr 11, and biology, chemistry, physics, etc in Yr 12), geography
- Contextually-focused options. These students were more likely to take Food technology, outdoor/sport options, physical education, visual art, fabric or other soft technology options, geography, computer oriented options, text information management, a mix of US and AS in maths, life skills, hospitality or tourism
- Vocational orientation. These students were more likely to take food technology, physical education, dance and/or drama, music, one or more of the hard technology options, text information management, life skills US, hospitality or tourism, US in maths and English, science (US at Level 2), business studies, other technology options

History variables

In the last several rounds of analysis we have developed history variables, based on responses to similar questions asked at ages 5 to 14. Some of these history variables cover only a subset of the years. For this report we re-used the age-14 history variables, as the changes (or stability) reflected in these variables is unlikely to be modified much by the addition of an extra round of data and the variables are not affected by non response (particularly of parents, or of those no longer at school on questions about school).

Table 144: History of TV watching age 8–14 categories

- Mainly low (up to 2 hours a day in at least three of the rounds)
- Mixed (everything else)
- Mainly high (over 2 hours a day in at least three of the rounds)

Table 145: History of school decile age 8–14 categories

- Mainly low-decile (decile 1 or 2 school in at least three of the rounds)
- Mainly mid-decile (decile 3–8 school in at least three of the rounds)
- Mixed (everything else)
- Mainly high-decile (decile 9 or 10 school in at least three of the rounds)

Table 146: History of family income age 8–14 categories

- Mainly low (under $30K in at least three of the rounds)
- Mostly moderate ($30–100K in at least three of the rounds)
- Mixed (everything else)
- High at least once (over $100K in at least one of the rounds)

Table 147: History of involvement in bullying age 10–14 categories

- Never involved in bullying
- Has been involved once (as either bully or victim)
- Has been involved at least twice (as either bully or victim)

Table 148: History of enjoyment of reading age 8–14 categories

This variable is based on parental reports of the students' enjoyment of reading at ages 8 and 10, and the students' reports at ages 12 and 14.

- Always enjoyed reading
- Everything else—mainly said yes or qualified yes
- Said they did not enjoy reading at least twice

Table 149: History of feelings about school age 6 or 8–12 categories

For this history variable, where we had age-6 data, we used it, and for the other students we used age-8–12 data.

- Always enthusiastic
- Fairly enthusiastic (in two or three of the rounds)
- Mixed (everything else)
- Unhappy at least once

Other derived variables

In this section we report on other derived variables that do not fit into any other category. These are attendance, current bullying, and adverse events.

Family financial situation

Table 150: Family financial situation

Ordinal-scaled variables used to form three clusters:

- Comfortable family financial situation
- Moderate family financial situation
- Difficult family financial situation

The variables used were:

- Family income (if known)
- The approximate proportion of income that was spent on housing
- The ability to pay all the family's bills each month (4-point scale from no difficulty to a great deal of difficulty)
- The amount of money left each month after paying bills (5-point scale from plenty to in debt)

Attendance

Table 151: Attendance

At age 16 we asked the schools to rate the students' attendance on a 5-point scale (from excellent to multiple absences, seldom attends) with two other possible values to cover many absences due to illness, and other absences (the most common reason offered for these was to do with sport).

Other teacher-based variables

The next two variables are derived from the mean across the three teachers of a single item.

Table 152: Overall ability/achievement

Overall ability was measured on a 5-point scale, rating the achievement of the student against that of their peers, calculated as the mean across the three teachers.

Table 153: Post-school qualifications

Mean of up to three teacher evaluations on a 5-point scale with levels: none, trades qualification, tertiary diploma, undergraduate university degree, postgraduate university degree.

Table 154: NCEA variables

Apart from the teacher judgement of the approach and attitude of the student to their work for the NCEA (0), we used the students' responses to questions about whether they skipped any NCEA credits, and if so why, to create some binary variables.

- Missed internal credits
- Missed external credits
- Missed two or more credits
- From the students' NCEA results we determined the total number of Level 1 NCEA credits achieved.

Factor and competency means

The measures for the factor or scale variables and competency measures all take values between 1 and 10. The scales were created so that they all have a similar "on a scale of one to ten, where would you put …" type of meaning. They are not in any way standardised, so a 6.2 on one scale is not directly comparable with a 6.2 on another. All we can say is that in broad terms, both are relatively nearer the top end of the scale than the bottom.

The main reason why we can't make direct comparisons is that the mean and standard deviation of the scales are not constant. The advantage of have variable scales, most of which were derived from Likert-type scaled items, is that the mean then gives an indication as to which behaviours or attributes were more common, and the standard deviation gives an indication as to which were more variable. The mean and standard deviation together can indicate severely skew distributions, if the mean is closer to 1 or 10 than the middle, and the standard deviation is almost the same size as the mean (if the mean is nearer 1) or to the difference between 10 and the mean (if the mean is near 10). In a skew distribution, most of the measures are very low (or high), and only a few are at the other extreme. For example, most students have a low score for social difficulties, but a few students have high scores. Typically, if the measure is more symmetrically distributed, the mean score will be closer to 5 and the standard deviation will be closer to 1; most students will have scores in the middle of the range, fewer will have high or low scores, and the proportion scoring above the mean and that below the mean will be approximately equal.

The number of students for which we have each of these measures is either:

- between 444 and 447 if all students were asked the questions that were used to make the measure
- about 440 if the parents provided the information used to make the measure
- between 416 and 421 if students still at school provided the information
- about 414 if teachers of students still at school provided the information.

Table 155: Average scores for factor/scale measures and competencies

Name	Mean (S.D.)	n	Name	Mean (s.d.)	n
Achievement and praise	5.8 (1.5)	444	NCEA approach	6.4 (1.5)	414
Adverse events	1.9 (1.0)	444	**Numeracy**	6.0 (1.5)	444
Affirmed at school	5.2 (1.0)	416	Overall ability/achievement	6.4 (2.0)	420
Attitude to work	6.5 (1.1)	420	Parental view of student responsibility	7.3 (1.3)	440
Attitudinal composite[a]	6.5 (1.4)	414	Parental view of student self-confidence	7.0 (1.3)	440
Cognitive composite[b]	6.1 (1.4)	447	Parental view of student self-efficacy	7.1 (1.2)	440
Disengaged in learning	4.4 (1.2)	420	Positive about class	6.7 (0.9)	420
Disrupted learning environment	5.2 (1.1)	420	Positive about teacher	6.9 (1.1)	420
Engaged in school	5.6 (1.1)	416	Positive learning environment[c]	6.8 (0.9)	420
External markers of achievement	5.9 (1.8)	420	Rejection	2.2 (1.1)	444
Family communicates well	6.6 (1.5)	447	Risky behaviour	3.6 (1.4)	444
Family pressure	4.4 (1.7)	447	Satisfied with subject mix	7.7 (1.4)	420
Focused and responsible	6.8 (1.6)	414	**Social difficulties**	2.3 (1.1)	414
Friends with risky behaviour	4.1 (1.8)	447	**Social skills**	6.3 (1.4)	414
Inclusive family	7.8 (1.3)	447	Solid friendships	8.4 (1.2)	447
Internal markers of achievement	7.6 (1.4)	420	Supportive family	8.0 (1.6)	447
Literacy	6.9 (1.5)	444	**Thinking and learning**	6.3 (1.5)	414
Logical problem solving	5.4 (1.8)	447			

[a] Mean of focused and responsible, thinking and learning, and social skills

[b] Mean of literacy, numeracy, and logical problem solving

[c] Mean of positive about teacher and positive about class

Competencies are shown in **bold** face.