

Executive Summary

Longitudinal Research on the Impact of the NCEA and Student Motivation and Achievement was funded as a series of studies by a Ministry of Education research contract awarded to researchers at Victoria University in the Jessie Hetherington Centre for Educational Research and the School of Psychology. The longitudinal research project began in 2005 and extends across junior and senior secondary years in students' school careers to investigate relationships between New Zealand's National Certificate of Educational Achievement (NCEA) and student motivation to learn. This third, multi-method research report follows previous student cohorts attending nationally representative secondary schools but also includes new cohorts encompassing two further years of the project. Part One was published as *The Impact of the NCEA on Student Motivation* (2006) and Part Two as *Longitudinal Research on the Relationship between the NCEA and Student Motivation and Achievement* (2007).

Survey, focus group interview, and achievement data are reported for a large sample of students from 20 demographically representative secondary schools across the country. Concurrent data were analysed for additional Year 10 and Year 11 student cohorts in 2007 and 2008, and data were analysed across years for those still in school in 2007 and 2008 from our Year 10-13 2005, 2006 and 2007 student cohorts. This enabled us to examine longitudinal relationships across motivation orientations and NCEA achievement outcomes. We also investigated relationships of student attributions towards learning and the influences of family/whānau, teachers and peers on achievement outcomes and motivations.

Our research also reports the results of an ongoing validation of our motivation screening measure. Administration of this measure with 2007 and 2008 Year 10-11 student samples allowed us to investigate the extent of student participation in part-time work, child care and other extracurricular activities and how these were related to motivation and achievement. Further, the timing of the announcement of certificate endorsements mid-2007 allowed us to examine how reported knowledge of the endorsements and how much students said they mattered to them were related to motivation and achievement. We report findings regarding self-reported knowledge of the endorsements for both 2007 and 2008.

In 2008, we also probed parent and student perceptions of NCEA design changes and how aspects of the NCEA affected student motivation and achievement. Parent and student focus group participants were identified from five of our national sample of 20 schools and at five new schools. Together, these qualitative data provide additional information from a wide range of schools across the country including *wharekura*, Auckland region schools, and schools enrolling a high percentage of Māori and Pacific students.

Key Research Findings

In this section, we summarise major findings from our research on the relationship between the NCEA and student motivation and achievement. These findings are

summarised here according to key research questions,¹ and the chapters to follow provide detailed findings.

What is the relationship between student motivation and achievement?

Our research continues to support the validity of two key motivation orientations *Doing My Best* and *Doing Just Enough* in predicting future achievement. *Doing My Best* significantly predicts more total credits, internally assessed standards with Excellence, and externally assessed standards at all levels—Achieved, Merit and Excellence. *Doing Just Enough* is associated with lower achievement across two years and significantly predicts higher total unit standard credits. These motivation orientations also account for subsequent achievement over and above predictions made based on previous achievement alone.

While motivation patterns were generally stable across two years for most students, individual fluctuations in motivation orientation that related significantly to achievement were also evident. Thus, we constructed low to high motivation categories based on composites of the *Doing My Best* and *Doing Just Enough* scales and examined further the achievement patterns for students in the different categories and those who changed motivations over time. Across two years, one-third of the students maintained their level of motivation, one-third showed a minor shift in motivation, and one-third showed larger shifts in motivation up or down. Students whose motivation stayed the same or shifted upwards from one year to the next achieved more total credits in 2007 and 2008 compared to those whose motivation shifted downwards.

We also investigated the relationship between student motivation patterns and relationships with teachers and peers. We found significant relationships between the motivation dimensions and these interpersonal influences: Students high on *Doing Just Enough* reported that their teachers did not take a personal interest in their achievement, whereas students high on *Doing My Best* reported that teachers showed interest in them and in their work.

Do motivation and achievement vary across gender, ethnicity and school decile level?

Relationships between gender and ethnicity with motivation and achievement were examined for the two Year 11 student cohorts who completed the survey late 2007 and late 2008 prior to final examinations and who did not receive their NCEA results until early 2008 or 2009, respectively. As in previous years, females reported *Doing My Best* more than males, and males reported *Doing Just Enough* more than females; however, in real terms these differences were quite small despite being statistically significant given the large sample size. Also as in previous years, we found that ethnicity was significantly related to both *Doing My Best* and *Doing Just Enough*, with Asian students showing the most positive motivation patterns, high on *Doing My Best* and low on *Doing Just Enough*. For Māori, overall mean scores for both dimensions were fairly similar.

¹ Note, however, that some questions could not be answered (e.g., parents were largely unaware of the review of Unit Standards so could not give an opinion of that review). In addition, a planned exploratory study to follow up students who had left school prior to Year 13 could not be completed due to lack of accurate contact information.

Focusing on our longitudinal data set, we investigated how shifts in motivation across years related to gender, ethnicity and school zone socioeconomic decile level. More males than females moved up two or more categories in motivation as they moved from Year 11 to Year 12 in secondary school. Asian students disproportionately increased most in motivation across years and European students disproportionately decreased most in motivation in comparison with other ethnic groups. There were no major differences in shifts in motivation by school zone decile level.

How is knowledge of the endorsements related to motivation and subsequent achievement?

On the 2007 and 2008 surveys, students were asked whether they were aware of the certificate endorsements for Merit and Excellence and how much these endorsements mattered to them. Overall, a slight majority of the students in each of the two years surveyed reported they knew about the endorsements, with more Year 11 and fewer Year 10 students reporting this knowledge. At the 19 schools returning surveys in both years, there was considerable variation in awareness of the endorsements from a low of just over 10% to nearly 80% at different individual schools.

Students overwhelmingly reported that the endorsements mattered to them, with only a small percentage (less than 10%) of those who knew about the endorsements saying they did not matter. This figure was relatively consistent across school zone decile, perhaps representing that percentage of the school population in all schools who may be the most difficult to motivate.

Knowing about the endorsements was also related to attainment of NCEA Level 1, though students did not have these results at the time they completed our survey (and indeed had not even finished all assessments). In 2007, 69% of those who reported knowing about endorsements compared with 49% of those who said they did not know later attained Level 1. Of those who knew about the endorsements, 34% attained an endorsement whereas only 7% of those who said they did not know received an endorsement. Of those attaining NCEA Level 1 with Merit, 80% had said the endorsements mattered to them mostly or definitely, and of those attaining endorsement with Excellence an overwhelming 98% said they mattered either mostly or definitely.

By examining data available for nearly 600 students from 2006 to 2007, we found that motivation decreased across time for students who said the endorsements did not matter whereas motivation remained stable and even increased for those who said endorsements mattered. The positive relationship of availability of endorsements to motivation across time was evident for students at all levels of achievement. Students in the lowest one-third in terms of total credits who reported knowing about the endorsements showed more positive motivation patterns over time in comparison to those who reported they did not know. The positive relationship with reported knowledge of the endorsements was strongest for the high achieving one-third in terms of total credits. These students may be motivated to continue completing assessments beyond the minimum required in the hope of attaining an endorsement, and student focus group comments support this interpretation. The findings suggest that the endorsements had a positive effect on motivation, though it is possible that the more motivated students were more likely to acknowledge knowing about the endorsements.

How are part-time work and other activities related to student motivation and achievement?

Again in both 2007 and 2008, we found relatively high percentages of students in Years 10 and 11 reporting part-time work. We also found that high percentages of students were engaged in other activities such as sport and child care for the family outside school hours. For Year 11 students, there was a significant relationship between the average number of hours spent weekly in each activity and student achievement in terms of total credits. Those who did not work or engage in sport achieved significantly fewer total credits than those who worked or engaged in sport between 5-10 hours. That is, engaging in part-time work or sport was positively related to attaining more credits at NCEA Level 1 provided that the number of hours did not exceed 10 hours weekly.

The achievement pattern for those who reported looking after children in the family (e.g., younger siblings) was different, with those who reported no involvement in childcare achieving more credits at NCEA Level 1 than those who spent more than 5 hours in childcare and those who spent fewer than 5 hours caring for children achieving more credits than those who spent more hours weekly. Students from low decile schools and Māori and Pacific students reported more child care, and European students reported less in comparison to all other groups. These differences in gender, decile, and ethnicity did not, however, show strong relationships to motivation or achievement patterns.

What factors do students think contribute to their best and worst marks?

In both the 2007 and 2008 surveys, we investigated the relationship of attributions for success and failure with motivation and achievement with the addition of measures to assess the influences of family/whānau, teachers and peers. Students rated attributions for ability, effort, luck, and the influences of their teachers, family and friends higher as explanations for their best marks than for their worst marks, and only assessment task difficulty was rated higher for their worst marks than for their best marks. In 2007, students' attributions for their best mark on a single assessment to ability was a significant predictor of higher NCEA achievement, whereas in 2008, students' attributions for their best marks on a range of assessments to effort was a significant predictor of higher NCEA achievement.

Gender was significantly related to attributions for success and failure, with girls more likely than boys to attribute their best marks to effort and their worst marks more to their lack of ability and the difficulty of the assessment task (both relatively stable and unchangeable causes). Female students also attributed both their best and worst marks to the teacher more than boys, who attributed their worst marks more to bad luck than did girls.

Ethnic differences revealed that Pacific students rated both family and friend influences as more important to both their best and worst marks than did European, Māori and Asian students. Māori and Pacific students attributed their best marks less to ability and effort than did European and Asian students. Pacific and Māori students also rated luck as a more important factor in their best marks and rated ability as a less important factor in their worst marks than did European and Asian students. This could suggest that Māori and Pacific students felt less control over their results than their European and Asian counterparts.

What do students say about the influences of their teachers and parents on motivation and achievement?

Our focus group results provided rich examples of the ways in which teachers and, to a lesser extent, parents were seen as having motivated secondary students to try their best and do well in school and on the NCEA. Most of these influences were positive but some were negative as well. Students reported that their families expected them to do well, took an interest in their schoolwork, and even offered specific rewards for achievement outcomes. There were several comments about older siblings who had left school early and had limited career opportunities or other serious difficulties—they were less than positive models and were cited as motivators for them to stay in school and achieve so that their future would be better.

There were a large number of comments about the influences of teachers on motivation and achievement. Most of these comments were positive and, not surprisingly, students appreciated teachers who knew their subject but also made learning fun and interesting. They appreciated teachers who treated them with respect, “like adults”. Without identifying anyone, some gave examples of teachers who seemed to have favourites, were sexist, got angry, and/or who couldn’t control their classes.

Friends and classmates were reported to have an influence on student motivation and achievement, both positive and negative. One’s friends could motivate higher achievement by supporting study behaviour, by not distracting students with social demands, and through “friendly competition” with one another to see who could get the highest number of Merit and Excellence credits. Friends could also be a negative influence, and students didn’t like to be in groups that were predominantly comprised of poorly motivated and low achieving students. They emphasised the difficulties of being motivated and working hard when surrounded by others who didn’t seem to care or couldn’t do the work. The common practice of banding students into groups by different levels of achievement for core courses in New Zealand secondary schools could be supportive for the higher achieving groups, but could be having a negative impact on both motivation and achievement for students in the lower achieving bands who are trying to improve.

What do students and parents know and think about the 2007 NCEA design changes?

The 220 focus group students from 10 schools were largely positive about the NCEA while expressing some continuing concerns over particular aspects. The two largest sets of comments made related to aspects of qualifications design and to intrinsic and extrinsic motivators for doing well on the NCEA. Students discussed time and stress management issues, including how to balance the demands of school study with part-time work, cultural competitions, sport and their social lives generally.

Students were overwhelmingly positive about the introduction of the Certificate Endorsements for Merit and Excellence, regardless of gender, school decile, or ethnicity. They also continued to advocate for more recognition in different subjects and having finer grade bands than just the four grades now available. In 2007, a majority of the Year 10 and Year 11 students we surveyed reported being unaware of the endorsements. This percentage declined slightly in 2008, but was still high enough to suggest that more work needs to be done to ensure that students and their families are made aware of the endorsements.

Māori and Pacific parents were positive about what they saw as increased motivation and opportunities for young people to achieve with NCEA in comparison with the previous system. They emphasised the advantages of a mix of assessments whereby internal assessments kept students focused across the year thus complementing end of the year exams. They provided many examples of older siblings who had failed under School Cert and Bursary while their younger children were doing well and were striving for Merit and Excellence rather than just Achieved. Parents reported using a range of motivators and reinforcers to encourage their children to do well, and they also withheld certain activities until homework was done (e.g., television, having friends over).

What do students think about NCEA assessment issues including consistency across subjects and schools?

Students continued to express strong support for internal assessments while recognising that external assessments were also important. As in previous years, students commented about a lack of consistency and transparency across schools and subjects, particularly with regard to repeating and re-sitting internal assessments. Though unaware of the review of Unit Standards, they expressed mixed opinions about the relative value of Unit versus Achievement Standards. However, support for Unit Standards was largely based on the notion that they provided an achievement pathway for less capable students, and students also expressed resentment that some subjects offered only Unit Standards (e.g., photography) so that students were prevented from working towards Merit and Excellence.