Paper DIN09119

Paper presented at the AARE International Research Conference - A Capital Idea!, Canberra, 29 November-3 December 2009.

A focus on opportunities to learn and student engagement

Rachel Dingle, Senior Statistician, with Sally Boyd, Senior Researcher

New Zealand Council for Educational Research

Abstract

A draft version of the New Zealand Curriculum (NZC) was released for consultation in 2006. At this time the leaders of a group of "normal" schools (schools that are leading providers of practicum opportunities for students in initial teacher education) approached the New Zealand Council for Educational Research (NZCER) to help them design a process to explore the key competencies[1], and to subsequently investigate learning opportunities and approaches that supported students to build the key competencies. Different schools tried different approaches and explored the tensions and challenges of aligning to the intent of the key competencies (see Boyd and Watson, 2006).

This paper focuses on the use of two tools developed to assist schools to explore changes in teaching practice and design new approaches to learning.

The first tool was an *Opportunities to Learn* survey. This survey was developed to chart possible changes in pedagogy relating to opportunities to learn that could strengthen each of the five key competencies, and was completed by teachers and a selection of students from Year 5 to Year 8 in the cluster of schools involved. The *Opportunities to Learn* survey has been used on various occasions across the three years of the initiative.

The second tool was the *Me and My School.* This is a nationally benchmarked survey of student engagement for Years 7 to 10, providing a means to test suggested links between learning opportunities and student engagement. A second version of the *Me and My School* instrument was

---

[1] The New Zealand Curriculum identifies five key competencies: '*Thinking*', '*Using Language, Symbols and Texts*', '*Managing Self*', '*Relating to Others*' and '*Participating and Contributing*'. These competencies are intended to be developed alongside curriculum learning areas.

developed for the younger age groups and these two versions have been used across the Normal Schools Cluster in the last two years.

The cluster of normal schools recently completed the more streamlined *Opportunities to Learn* survey, and in this paper the changes over time will be discussed alongside the results from the *Me and My School* surveys.

The findings from the *Opportunities to Learn* survey showed that teachers were changing their practices towards pedagogies that were likely to support students in building the key competencies. The student data showed a lesser, but parallel trend.

Results from the *Me and My School survey* showed maintenance or enhancement of student engagement which is in contrast to a national trend for this to gradually fall between years 7 and 10. In combination with the results from the *Opportunities to Learn* survey this suggests that the changes schools and teachers have made are improving the learning environment for students.

Introduction

At the start of this project in 2006 a group of Normal School leaders were already working together, mainly as an administrative group. They decided to re-frame their purpose as a community to become leaders of learning. In 2006 the draft version of the New Zealand Curriculum (NZC) (Ministry of Education, 2006) was released for consultation and the group decided to use this, with its focus on key competencies as a vehicle for building their professional learning communities both as a cluster and within each school. The first research was funded by the NZ Ministry of Education and subsequently a second phase was funded through the NZ Ministry of Education Extending High Standards Across Schools (EHSAS) initiative[2]. It is the EHSAS funded project that we are reporting on in this paper. The original EHSAS project plan had a three year timeframe with a focus on teachers' professional development in the first year, followed by a focus on students in the second year. The third year was seen as a year for sustaining what had been learnt. Alongside this work the cluster wanted associated research support to help make decisions and provide evidence of success. NZCER was approached to help with these tasks.

The initial vision of the cluster of Normal Schools was driven by a desire to explore the key competencies (KC's). The three original ideas were:

---

[2] The EHSAS initiative is designed to improve student outcomes by making funding available for schools to develop and extend their proven practice in collaboration with other schools. The emphasis is on developing professional networks and improving the evidence base around processes and practices that contribute to improved student outcomes.

1. For all schools to promote and implement the KC's into the school curriculum through the individual school's goals.

2. This is a collaborative model utilising the skills and experiences of everyone involved.

3. Increased collaboration within our Normal School Cluster will strengthen our professional learning community. The professional development involved will inform teaching practice and have a direct impact on improving student outcomes (The Normal Schools Cluster EHSAS Proposal, 2007).

After completing a first *Opportunities to Learn* survey (see below) it became clear that the vision was seen differently between schools in how the schools were to promote and implement the key competencies into the school curriculum. During 2007 the first idea was changed to give the project a shared vision and related explicit research focus:

1. How well are the key competencies in our school being supported:

   • Through effective teaching practice?

   • Through teacher/student understanding and knowledge?

   • Through inquiry/interdisciplinary approaches? (adapted from The Normal Schools Cluster EHSAS Milestone Report, 2008).

The other two ideas listed before, which related more to how the project would be conducted, remained the same throughout the length of the project.

The change in vision assisted the schools to be focussed in their innovations yet still afforded flexibility in the areas in which they chose to work. It also gave stronger links to the NZC[3]. All schools in the cluster are working on curriculum areas which have key competencies embedded within them, not as an add-on to the content.

The following summary outlines key actions and provides a sense of the scope of the initiatives in the schools.

1) Effective teaching practice

There were a number of areas teachers explored in enhancing teaching practice. These included:

   • developing reflective strategies with students

---

[3] The New Zealand Curriculum (NZC) (Ministry of Education, 2007) is a statement of official policy relating to teaching and learning in English-medium New Zealand schools. It identifies five key competencies people need to live, learn, work and contribute as active members of their communities. They are not separate or stand-alone. They are the key to learning in every learning area.

- examining their practices in the teaching of the key competencies through changes to planning curriculum content and context

- ways to implement the key competencies into regular, daily classroom programmes

- using deliberate acts of teaching to scaffold the learning needs of students.

2) Teacher/student knowledge

Students and teachers were supported in their learning through:

- teachers and students having deep learning conversations

- key competencies being part of daily conversations

- key competencies being used to guide both planning and delivery.

3) Inquiry

Most schools focussed on strengthening their student inquiry processes. The pedagogies they explored included:

- questioning

- using prior student knowledge to shape learning experiences

- investigating the components of inquiry, no one model fits all

- looking at different approaches to how inquiry can be delivered across the school day.

The evidence base

The project was designed to have an active research component that ran alongside professional and curriculum development by the schools. The evidence base used to guide the schools was a carefully planned evaluation of progress and the NZCER surveys played the primary role. The following table illustrates the timelines and actions carried out by both the cluster schools and the researchers involved.

Table 1 **The project activity**

Time	Action by Schools/Cluster	Action by NZCER
Early 2006	Initial forum exploring key competencies together	
Late 2006	Further forums and exploration by individual schools and the cluster around KC's	Adapted *Opportunities to Learn* surveys used in the Curriculum Innovations Projects (Boyd et al., 2005) and gave feedback from research findings (Boyd and Watson, 2006)
Early 2007	Developing and trialling of approaches and models for exploring both the curriculum and KC's by schools and cluster	Work with cluster facilitator to develop data management systems and administration of *Opportunities to Learn* surveys
Mid 2007		Data analysis and advice
August-September 2007	Development of curriculum leadership for lead teachers within the schools and school principals	Dissemination of *Opportunities to Learn* results
Start 2008		Decision to use *Me and My School* surveys
Early 2008/December 2008/ March 2009/October 2009	Professional development for all teachers involved in the project	Run *Me and My School* surveys
July 2008	Further trialling and then development of approaches and development of learning communities across the cluster and within the schools	EHSAS Conference Poster and Presentation about collaborative work
September 2008		Workshop with cluster about using results from *Me and My School* surveys and student voice in schools
	Dissemination and sharing of results and effective practice	
November-December 2008/ September-November 2009	Reflection and adaptation of teaching approaches especially for inquiry	Visit most schools to discuss and reflect on both cluster and school results from surveys and other evidence collected by the schools
Start 2009	Consolidation of learning communities	Revision of *Opportunities to Learn* surveys
Mid 2009		Run *Opportunities to Learn* surveys
November 2009	Dissemination and sharing of results and effective practice	Dissemination of *Opportunities to Learn* and overall *Me and My School* results

The first tools used by the cluster schools were the *Opportunities to Learn* surveys. These were two parallel questionnaires, one for students and one for teachers. These questionnaires were adapted from the tools used as part of the evaluation of the *Curriculum Innovation Projects* (Boyd et al., 2005) and from the first phase of research with the normal schools (Boyd and Watson, 2006). The questionnaires were originally developed from a review of research studies and tools that explored good practice pedagogy and literature related to the key competencies. From this review, a list of teacher practices potentially related to each key competency was developed. The teacher questionnaire included a section in which teachers were asked to rate how often each practice occurred in their classes, and how important they considered each practice to be. The student questionnaire had a parallel section in which students were asked to rate how often each

practice occurred in their classes. The teacher version was completed by all teaching staff and senior management in each school and the student version was completed by students in Years 5 to 8.

Figure 1 is an example of part of one of the survey instruments related to the Key Competency '*Relating to Others*'.

Figure 1 **Items from the *Opportunities to Learn* survey**

How often does this happen in your class?	Very often 1	Often 2	Some-times 3	Hardly ever 4
a) I am given time to talk about my ideas with other students.	O	O	O	O
b) I have a turn being different roles in group or class activities.	O	O	O	O
c) I learn ways to manage discussions when we work together.	O	O	O	O
d) Students and teachers respect and help each other.	O	O	O	O
e) Teachers encourage us to take responsibility for our actions.	O	O	O	O
f) We learn about how best to communicate in different situations.	O	O	O	O

As the NZCER researchers' collective understanding of the key competencies deepened over the three years of the study we made amendments to the surveys. This was particularly the case for the key competency '*Using Language, Symbols and Texts*'.

During 2009 the schools in the cluster administered the *Opportunities to Learn* survey again. The student version used was similar to the first survey used in 2007, but had been shortened and fine-tuned. The first version was lengthy and analysis suggested some items were redundant. These were removed from the second version and a more compact instrument was produced. Corresponding changes were made to the teacher survey for completeness and comparative purposes.

The *Opportunities to Learn* survey helped the cluster to develop a more tightly focussed vision by highlighting areas for attention. It also suggested that there were strong links between opportunities to learn and student engagement with their school and classroom environment. This led to the use of NZCER's *Me and My School* survey of student engagement as a means to explore relationships between engagement and learning opportunities.

Developing the item set for a student engagement measure

The second tool (*Me and My School)* was developed by NZCER as a set of survey items that schools could use to inform their understanding of student engagement in learning.

This short survey was initially developed to provide reliable measures of self-reported engagement with school for students in Years 7 to 10, referenced to national norms. Survey items were developed to cover affective, behavioural and cognitive aspects of engagement. After a series of pilot studies, 36 items were selected to collect data in a much larger national trial with over 5,000 students. The Partial Credit version of the Rasch polytomous model (Bond & Fox, 2007) was used to construct a measurement scale with the items of the survey. A measurement scale (se units) was described, guided by the location of the items on the scale[4]. The data were then used to calculate national norms at each of Year 7 to Year 10. Some item stems were sourced from the research literature, including survey work done by NZCER, for instance: "Most mornings I look forward to going to school", which points more towards the emotional aspect of engagement (Battin Pearson et al., as cited in Jimerson et al., 2003, p.16). Others were written specifically for the instrument, for example: "There is just the right amount of challenge at school for me", which links to the cognitive aspect of engagement. All items were reviewed by a group of researchers from inside and outside the development team to examine the item choices.

As the normal schools cluster included primary and intermediate schools (Year 1 to Year 8) a younger version of *Me and My School* was developed to be used in Years 4, 5 and 6. The final items from the Year 7 to Year 10 version were examined in terms of language and understanding for younger students by researchers at NZCER and a modified version was produced. There were slightly fewer items selected, 28 instead of 36, as some were considered too difficult for younger students to understand or were not appropriate as related to post-primary schooling. Some of the language was simplified without changing the meaning of the statement. This version was then used for Years 4 to 6 and the original version used for Years 7 and 8. Figure 2 shows one page from the survey instrument.

---

[4] Very high engagement (80 se units and above) is associated with strong emotive responses to school and a commitment to engagement in class work. Very low engagement on the other hand (30 se units and below) is associated with very low emotive connections to school, including little or no respect for teachers and commitment to school learning. Students scoring 50 se units feel that they are making progress at school and agree that their teachers help them learn. They agree that they like learning new things in class and that it is important to behave well at school. They disagree that they look forward to going to school each morning.

Figure 2 **Example page from the *Me and My School* survey**

Me and My School

1	Most mornings I feel happy about going to school.		8	People care about each other in this school.
Strongly disagree ○ ○ ○ ○ Strongly agree			Strongly disagree ○ ○ ○ ○ Strongly agree	

2	I am proud to be at this school.		9	I listen in class.
Strongly disagree ○ ○ ○ ○ Strongly agree			Strongly disagree ○ ○ ○ ○ Strongly agree	

| 3 | Most of the time being at school puts me in a good mood. | | 10 | I like my teachers. |

| 4 | I think it is important for me to behave well at school. | | 11 | I am comfortable talking to my teachers about problems. |

| 5 | I often feel bored at school. | | 12 | I care a lot about what my teachers think of me. |

| 6 | I respect other students. | | 13 | Most of my teachers like me. |

| 7 | I feel safe at school. | | 14 | I feel my teachers help me learn. |

© 2007 NZCER

Patterns of responses to the two surveys

The Opportunities to Learn Survey

The *Opportunities to Learn* survey not only provided the basis for changing the vision of the cluster but also provided a baseline measure from which comparisons could be made in 2009.

The following figure (Figure 3) shows the 'top ten' change in teachers' agreeing that the items occur "very often" in their schools. Also listed are items that appear in the equivalent student 'top ten', but not in the teacher list. These are shown in italics. Overall Figure 3 shows that teachers were shifting their practice towards pedagogies that supported the students' learning experiences.

Figure 3 **Top ten results from *Opportunities to Learn* survey: Change in teachers' perspectives of "very often" in 2007 (n=155) and 2009 (n=161). Italics indicate items appearing in student top ten but not in teacher top ten.**
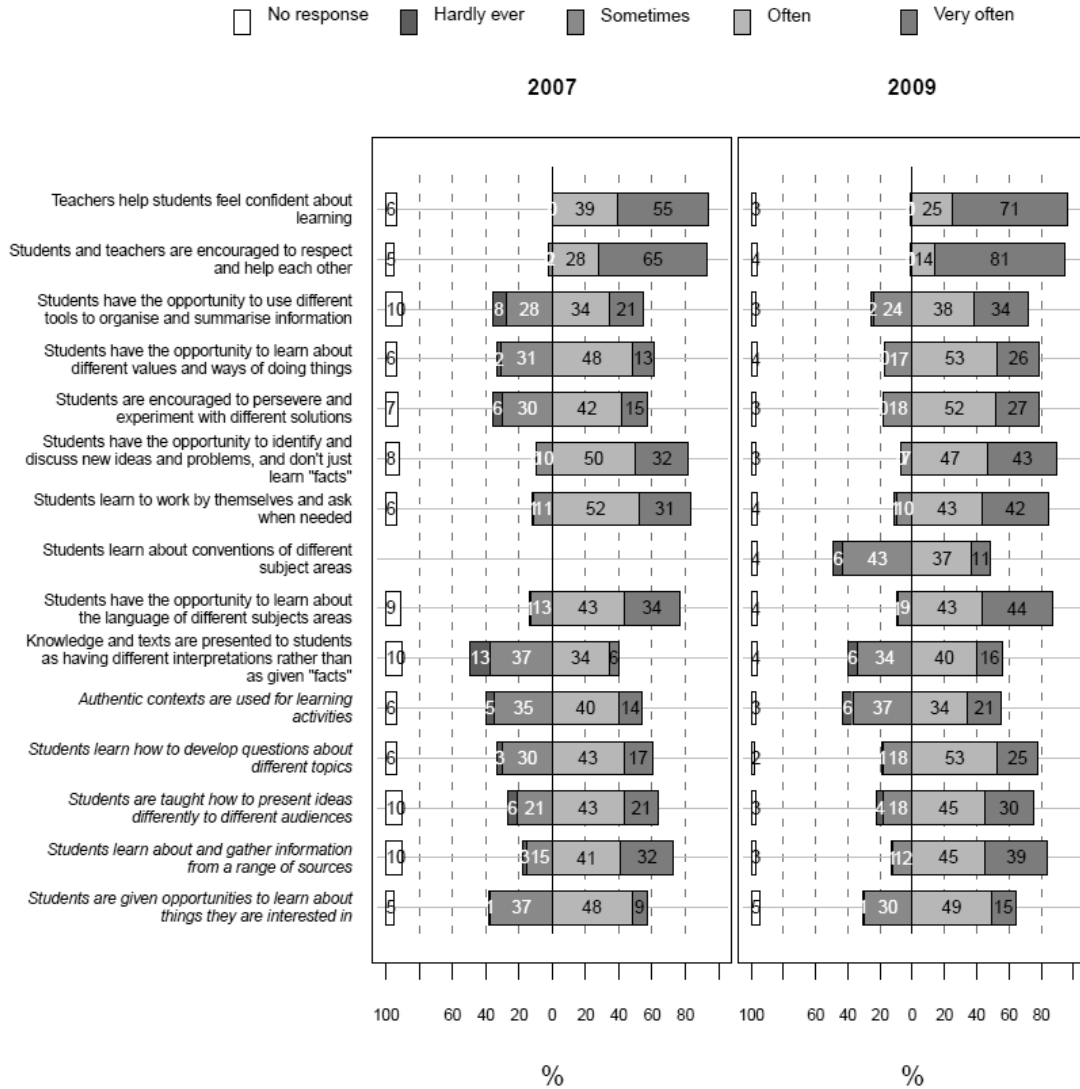
The results from the teacher surveys show that from the teachers' perspective the classroom environment is more respectful and the teachers help students feel confident about learning. There is now a stronger focus on problem-solving and inquiry. There has been a shift in learning about values and different conventions and languages.

Figure 4 shows the 'top ten' change in students' agreeing that the items occur "very often" in their schools. Also listed are items that appear in the equivalent teacher 'top ten' change, but not in the student list, these are shown in italics.

Figure 4 **Top ten results from *Opportunities to Learn* survey: Change in students' perspectives of "very often" in 2007 (n=834) and 2009 (n=2211). Italics indicate items appearing in teacher top ten but not in student top ten.**
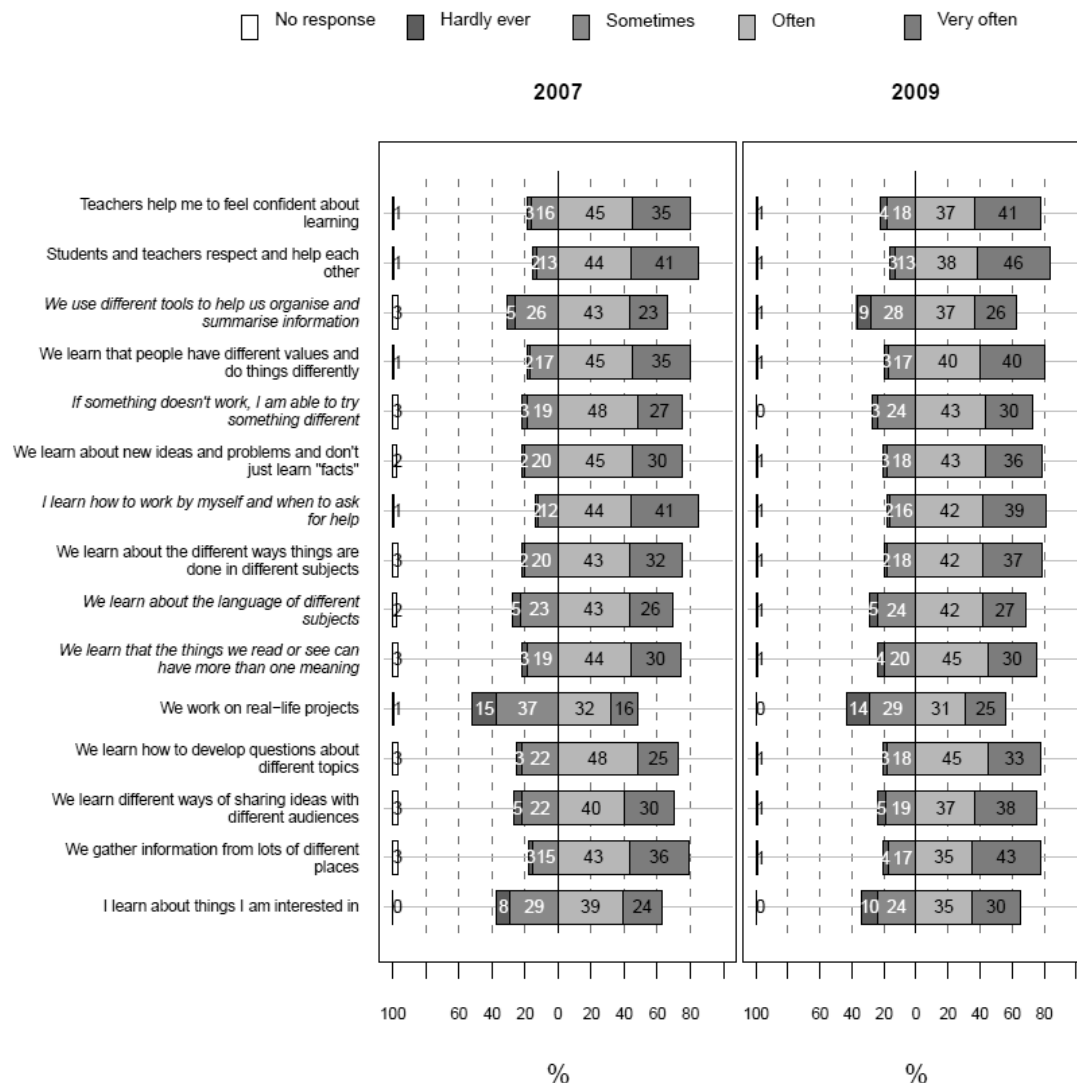
The student survey showed mostly parallel but less noticeable shifts than the teacher data. Examples are shifts in items such as 'Teachers help me to feel confident about learning' and 'Students and teachers respect and help each other'. Other research that has used versions of the *Opportunities to Learn* survey suggests that shifts are seen first in the teacher data, and any shifts take longer to be reflected in student level reporting[5]. However we can see that students were more likely to feel that they "very often" learnt about new ideas and problems rather than facts. They also learnt about how to develop questions about different topics, and were more likely to feel that they "very often" learnt about things they were interested in, and on real-life projects.

---

[5] This was a clear pattern across three years in a large girls' secondary school. (Unpublished report.)

These findings are likely to be related to the focus that the cluster developed on inquiry and building on students' prior knowledge.

Change takes time

Changing classroom practice is rarely straightforward or readily accomplished even if teachers are open to change. The teacher and student data showed a shift towards teachers increasingly placing value on, and using, practices that are likely to support students to build the key competencies.

Paralleling the timeframes of the project, which focused on teacher pedagogy in the first year, followed by student experiences in the second year, the teacher data shows the greatest shifts. The student data shows in many cases parallel, but smaller, shifts. This pattern is what you would expect. The school change literature comments on the complexities of change and suggests that adequate time frames are needed for real shifts to happen in school systems (Stoll and Fink, 1996; Russell, 2003). As Russell (2003) states:

> It is estimated that some three to five years of focussed *[sic]* planning and implementation are needed if change in the middle years environment is to be achieved, perhaps longer in secondary schools where the challenges are more complex (p. 1).

The Me and My School Survey

The *Me and My School* survey was completed by all schools in the cluster at the start and end of 2008 and the start and end of 2009.

The methodology and findings of the MYRAD study (Russell, 2003) have some relevance to the Normal Schools project. The MYRAD study was a longitudinal Australian project that attempted to find strategies to address student disengagement and support students to be lifelong learners, thereby improving the middle years[6] of schooling.

Russell (2003) comments that comparing the start- and end-of-year attitudes and perceptions of students to infer whether improvements in teacher or school practice have taken place is not a straightforward endeavour. She notes that there are two trends that mitigate against this. One is an annual pattern observed in student attitudes, with more positive views being expressed at the start of the year and less positive ones at the end. This trend was observed in the *Me and My School* student data. Another is a general trend for the attitudes of students in the middle years of schooling to become less positive as students get older. Russell (2003) observes that longitudinal comparisons of the same students over 2 or 3 years is the best measure of change in practices over

---

[6] In the Australia MYRAD project the middle years were defined as Years 5–9. In New Zealand this equates to Years 6–10.

time, and comparing different cohorts of students can be problematic as any differences observed could be a cohort effect rather than differences due to the initiative in question.

Given the general trends in attitudes and perceptions noted above, Russell (2003) defines "improvement" as a lessening or halting of the extent of a decline, or an increase in positive perceptions. This definition of improvement has been used to compare student data.

Over the two years of survey use the year groups we have tracked in this cluster have either increased or maintained their average engagement scale score. Table 2 shows the average scale score at the start of 2008 (the baseline) and the start of 2009 for each year group. We also used the survey at the end of 2009, but for comparison purposes show the results from the same time of the school year as the baseline so that there is no time of year bias. One of the larger intermediate schools (Years 7 and 8) also surveyed all the students in the school at the end of 2009 whereas they sampled the year groups at baseline and start of 2009 making a more valid comparison. Here we see that all years have an increased scale score in 2009 except Year 8. Also, if we track Year 4 in 2008 to Year 5 in 2009, Year 5 in 2008 to Year 6 in 2009 (as highlighted in the table), and Year 7 in 2008 to Year 8 in 2009, we see either maintenance or an increase in scale score except for Year 7 to Year 8. As we use one instrument for Years 4 to 6 and a different instrument for Years 7 to 10 we cannot track the scale score from Year 6 to Year 7. The same patterns and trends are evident for both boys and girls.

Table 2   **Average *Me and My School* scale score in 2008 and 2009 (start of year)**

Year Group (n in 2008)	All students			Boys			Girls	
	2008	2009		2008	2009		2008	2009
Year 4 (n=331)	65.3	67.9		63.6	65.0		67.1	70.6
Year 5 (n=300)	64.3	65.6		62.2	63.0		66.8	68.1
Year 6 (n=428)	62.9	65.2		59.1	62.7		66.8	68.0
Year 7 (n=550)	61.6	63.3		59.3	60.7		64.0	65.8
Year 8 (n=581)	59.4	58.0		57.0	56.1		61.7	59.9

Overall the cluster has shown improvement in engagement as measured on the *Me and My School* engagement scale. This is in contrast to the New Zealand national picture which data shows a decreasing trend in engagement levels with maturation, i.e. the older the students the lower the score on the engagement scale (see Figure 5 below). This suggests the changes schools were making were impacting positively on teachers' pedagogy and flowing through to student learning.

Figure 5 **Perceived engagement by year level (national data N≈8500)**
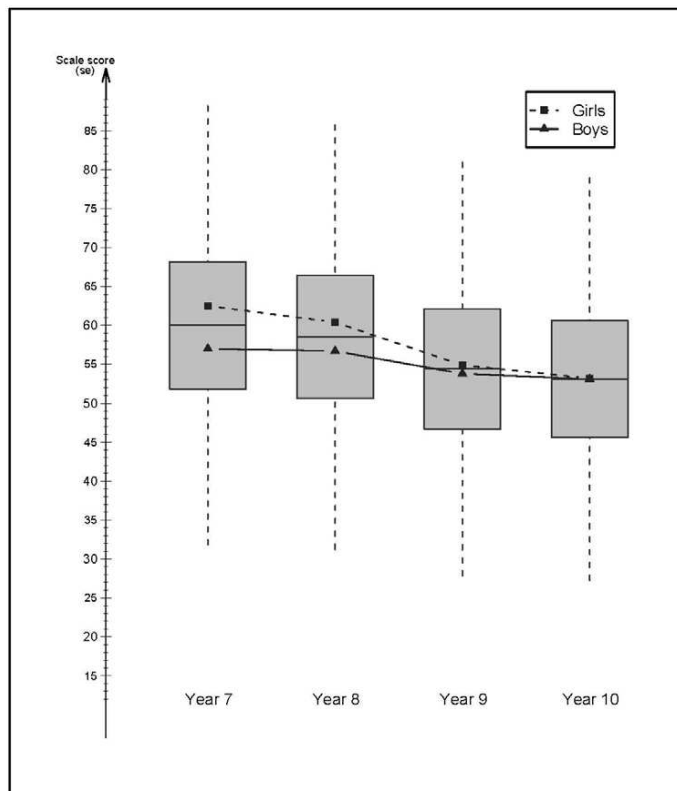
The use of the item level details of the survey has provided teachers the opportunity to reflect on their teaching practice and choice of learning contexts. For example, later results from the surveys show greater disagreement with the following types of statement:

- I often feel bored at school

- I do as little work as possible

- When schoolwork is hard I stop trying.

The results have been used by schools to inform their action plans in order to improve areas of possible disengagement indicated by the item level data. The use of student voice, for example, some schools chose to talk to small focus groups of students about the results from the *Me and My School* survey, has been a powerful tool in helping teachers to look at the data and link it into professional development and discussion on how to make changes that are related to engaging students in their learning.

Schools have responded to the survey results in various ways depending on their own sub-group data. Examples of changes made are: trialling ways of utilising student prior knowledge in planning, looking at leadership opportunities for Year 5 students (and upwards), investigating boys' engagement in learning, and working with girls' self esteem issues.

Summary

This paper shows one way that schools in New Zealand are using data to focus and design their curriculum and learning programme. The schools that work together as the Normal Schools Cluster have used both the *Opportunities to Learn* and *Me and My School* surveys to explore the key competencies and the New Zealand Curriculum, to develop a coherent and shared vision, and to subsequently investigate learning opportunities and approaches that supported students to build the key competencies. This led to a focus on student engagement. The rich picture of student attitudes provided by the survey data provided evidence to help the school design activities that supported students to engage with their learning and therefore to feel more positive about school. This in turn motivated teachers to continue to engage and challenge their students.

The findings from the *Opportunities to Learn* survey showed that teachers were changing their practices towards pedagogies that were likely to support students in building the key competencies. The student data showed a lesser, but parallel trend. This highlights the time frames needed to see change in student data in a complex school system. There is an advantage in developing parallel teacher and student instruments in order to compare teacher and student perceptions and to feedback student perspectives to teachers.

Results from the *Me and My School survey* showed maintenance or enhancement of student engagement which is in contrast to a national trend for this to gradually fall between years 7 and 10. In combination with the results from the *Opportunities to Learn* survey this suggests that the changes schools and teachers have made are improving the learning environment for students.

References

Bond, T. G., & Fox, C. M. (2007). Applying the Rasch Model: Fundamental measurement in the human sciences (2nd ed.) Mahwah, NJ: Lawrence Erlbaum.

Boyd, S., Bolstad, R., Cameron, M., Ferral, H., Hipkins, R., McDowall, S., & Waiti, P. (2005). Planning and managing change: Messages from the Curriculum Innovation Projects. Final report to the Ministry of Education. Wellington: Ministry of Education.

Boyd, S., & Watson, V. (2006). Shifting the frame: Exploring integration of the Key Competencies at six Normal Schools. Wellington: Ministry of Education.

Jimerson, S., Campos, E., & Greif, J. (2003). Towards an understanding of definitions and measures of school engagement and related terms. The California School Psychologist, 8, 7-27.

Ministry of Education. (2006). The New Zealand Curriculum. Draft for consultation 2006. Wellington: Ministry of Education.

Ministry of Education. (2007). The New Zealand Curriculum. Wellington: Learning Media.

Normal Schools Cluster EHSAS Proposal. Submitted to Ministry of Education by Lead School in 2007.

Normal Schools Cluster EHSAS Milestone Report. Submitted to Ministry of Education by Lead School in 2008.

Russell, V. (2003). Messages from MYRAD: Improving the middle years of schooling. A research and development monograph. Victoria: IARTV.

Stoll, L., & Fink, D. (1996). Changing our schools: Linking school effectiveness and school improvement. Buckingham & Philadelphia: Open University Press.