Reshaping the secondary school curriculum: Building the plane while flying it?

**Findings from NZCER
National Survey of Secondary Schools 2009**

Rosemary Hipkins

Acknowledgements

Table of Contents

Tables

Figures

Executive summary

The NZCER national surveys, funded by NZCER's Purchase Agreement with MOE, are actually four surveys in one. Each round includes surveys for principals, teachers, trustees, and parents. This report has been compiled from data drawn from the 2009 NZCER National Survey of Secondary Schools with some references to the 2006 and 2003 secondary surveys where items could be matched. It adds new insights to a growing body of research that describes the manner in which secondary principals and teachers have interpreted the intent of the New Zealand Curriculum (NZC) and begun the process of implementing it in their schools and classrooms.

The 2009 NZCER National Survey was completed by 59 percent of all secondary principals (187 of a possible 319 state or stated-integrated secondary schools) and by 34 percent of an invited sample of one in six secondary teachers in those schools. Analysis of respondent characteristics showed that the achieved samples were broadly representative of the diversity of New Zealand secondary schools (see Appendix A).

In late 2007 the final version of an updated NZC was released to schools, with full implementation expected to be completed by 2010. At the time the 2009 survey was taken secondary schools were still exploring the intent of NZC although some implementation changes were already underway. It is important to bear in mind that the actions and thinking reported are a base-line snapshot of early change in response to NZC. We expect to see greater shifts in thinking and practice at the time of the next NZCER National Survey of Secondary Schools in 2012.

This report mainly explores secondary teachers' views of curriculum change, their professional learning, and changes they have already made or might make to their teaching as they go about developing and deepening their understandings of the intent of NZC and then putting these intentions to work in the learning experiences they design and implement in their classes. In this report the principals tend to play a supporting role—the main focus is on what teachers think and do. Data from the principals' survey are included where relevant but they were not asked as many questions as teachers in relation to NZC implementation. This is not to say principal views and actions are not important to implementation. On the contrary, factor analyses of the data reveal they have an important part to play in leading by creating an achievement-focused learning environment in the school. Nevertheless teachers must be the drivers of change in actual classroom practice.

The title of this report reflects both the complexity of the process of giving effect to NZC in secondary schools and the ongoing, evolving nature of curriculum change. Schools cannot stop, take stock, redesign and then start again. They have no option but to "build the plane while flying" if they perceive that significant change is required. At the time of the 2009 NZCER

National Survey of Secondary Schools many schools were still considering the likely impacts of NZC on their practice, at both school-wide and classroom levels. Full implementation was not mandatory until 2010 and so this report provides baseline data which can be revisited at the time of the next NZCER National Survey of Secondary Schools in 2012.

Learning about NZC

NZC is a framework curriculum, released in final form in 2007, after a lengthy period of collaborative consultation. NZC is a major policy initiative with some different messages from previous curriculum documents. The "front-end" signals a range of future-focused education outcomes such as the importance of becoming a lifelong learner and of developing and strengthening five key competencies (based on an OECD initiative). Learning about these new features has been an important early aspect of implementation, and there is no self-evidently correct way to put them into effect in either the wider school or in classrooms. The "back-end" of NZC contains revised and updated achievement objectives for the eight curriculum learning areas. The so-called "essence statements" are new. They draw high-level attention to the contribution each learning area makes to each student's overall learning. Schools and teachers must work out for themselves how best to integrate this more familiar back-end detail (albeit framed and focused by a new essence statement) with all the new front-end features (vision, principles, values, key competences, effective pedagogy, school design and review etc.). This is a complex design challenge.

Most principals and many teachers reported having encountered the vision, values and principles in whole-staff explorations, with fewer respondents having explored these components in teams or individually. The pattern is different for the revised and updated achievement objectives, which were more likely to have been explored in teams. Congruent with this, the front-end components most closely associated with the achievement objectives (i.e., the essence statements and the curriculum design and review section) were also more likely to have been explored in teams. The key competencies and the effective pedagogy section sit somewhere between these two patterns: they were most often explored by the whole-staff, yet also likely to have been explored by teams in around half the respondents' schools. Given indications of learning area-related differences that emerged in the teacher responses, it is possible that the tendency to structure front-end/whole-school and back-end/team-based learning has resulted in differences of interpretation of NZC's intent in different learning area teams.

What is seen as important and what is enacted

In a fluid situation where schools and teachers must interpret the key messages in NZC, what is seen as important and valued is more likely to be the focus of attention and action. This report confirms other research findings (Schagen, in press) that much of what is signalled as important in the front-end of NZC is indeed generally valued by principals and teachers, albeit somewhat more

so by principals than by teachers. *In principle* NZC has wide support. However, there are indications that the front-end intent has yet to be widely translated into actual changes in classroom practice in the secondary sector. Teachers do need good examples of ways to bring the transformative intent of the front part of NZC into their teaching in the different learning areas.

Secondary teachers and principals are in agreement that implementing NZC will require changes in pedagogy and the rewriting of schemes of work and unit plans. However, responses to other questions suggest that many secondary teachers need ongoing opportunities to take part in collegial conversations that explore responses to achievement challenges, including less familiar pedagogical approaches that could help schools meet the more transformative intent of NZC. Item sets that described specific opportunities for the development of key competencies and learning-to-learn approaches revealed gaps between what teachers say they value and the types of learning experiences they say that students have in their classes. Analysis of relationships between factors for the key competencies, learning-to-learn and other item sets suggests that some teachers who are actively engaged with NZC implementation may have a focus on strengthening current practice rather than making more substantive changes. The more familiar a practice, the more likely it was to be highly valued and already enacted.

Principals' and teachers' views diverge somewhat over the partnership aspects of NZC. A clear majority of principals support the idea of involvement of parents, students, the Māori community and the school community more generally in determining curriculum directions and in making decisions about how to best support students' learning. Greater numbers of teachers have reservations about this aspect of NZC, particularly greater involvement of students in curriculum decision-making. Around a third of the teachers agreed there is too much emphasis on "student voice" and this view is associated with doubts about (or opposition to) some of the pedagogical approaches signalled as important by NZC. This opposition is particularly evident in relation to the range of learning-to-learn classroom activities described. Opposition was more likely to be expressed by teachers of mathematics and science, although both support and reservations were expressed by teachers from across all the learning areas.

Compared to principals, secondary teachers appear to be paying more attention to the assessment implications of NZC. They were more likely than principals to think implementation entails making changes to NCEA assessments, and that they should be creating a means of assessing key competencies. They were also more likely to think their school should be looking at how the National Standards related to their Year 9 programme. Around a third of teachers see NCEA requirements and the time taken for NCEA assessments as barriers to curriculum change, but numbers thinking this have dropped somewhat since 2006.

Possibilities for supporting ongoing professional learning

Bearing in mind that the survey was taken in the early stages of NZC implementation, an important challenge for the analysis was to look for indications of areas where additional support might be fruitfully provided for ongoing teacher learning.

Many teachers are actively engaged in ongoing professional learning, and perceive that this learning is helping them make changes in their thinking and practice. This is particularly so for voluntary learning activities chosen on the basis of personal interest, but some school-wide programmes such as literacy across the curriculum are also widely perceived to have resulted in changes in practice.

Morale is generally good but is highest among those teachers who are actively engaged with change. There is evidence that curriculum implementation has given them a sense of professional achievement and personal satisfaction. These engaged teachers can be found in schools of all deciles, at all stages of their teaching careers and in all learning areas. However, teachers do want more time to think and plan (65 percent saw lack of time as a barrier to curriculum change).

Fostering achievement-focused conversations within and across teams could create additional opportunities for some teachers to engage with change. At the moment they are more likely to experience traditional collegial sharing. Fewer than half the teachers reported learning conversations about ways to help students lift achievement levels. Where this did happen it was likely to be associated with high levels of regard for the principal's leadership of the school.

In contrast to the engaged teachers it is possible to identify some who are in danger of being left behind by the pace of change. They enact fewer of the learning activities that align with NZC; they appear to have gained less value from such professional learning as they have undertaken; and they are likely to be in schools where achievement-focused conversations are less likely to be happening. These teachers perceive more barriers to potential change, especially at the school-wide level. Not surprisingly, teachers whose experience of NZC implementation has been of this type also tend to report lower levels of morale, a lack of personal agency for curriculum decision making and greater numbers of problems in their day-to-day work (for example, discipline issues and increasing levels of student disengagement). They are relatively more likely to be in low-decile schools, or to be teachers of mathematics or science (but again they are distributed across all school and subject-teaching contexts).

Almost all the teachers acknowledged the need for changes in their practice, even when their professional learning to date had not yet sparked the necessary impetus for such change. The report identifies "student voice" as a possible area in which to focus professional learning that could help teachers bridge gaps between their sense of a need for change and their current values and beliefs. Being supportive of the idea of student voice in principle was associated with: placing a high value on the types of learning experiences that could potentially provide students with opportunities to strengthen their key competencies; actually offering students these types of learning experiences in class; enacting learning-to-learn strategies that make expected

achievement an explicit focus of classroom conversations; and generally seeing value in curriculum-related professional learning.

However their professional conversations are focused, teachers need the time and space to explore new ideas. They need to see how to better align NZC and NCEA, and specifically to perceive that any changes they do make will improve student learning and achievement, which remains their deeply felt professional responsibility. There are indications that principal leadership will impact most strongly on NZC implementation when principals actively work to support and sustain a collegial learning culture in the school, with student achievement as its central focus.

1. Introduction

This report has been compiled from data drawn from the 2009 NZCER National Survey of Secondary Schools with some references to the 2006 and 2003 secondary surveys where items could be matched. The NZCER national surveys, funded by NZCER's Purchase Agreement with MOE, are actually four surveys in one. Each round includes surveys for principals, teachers, trustees, and parents. This report mainly explores secondary teachers' views of curriculum change, their professional learning and changes they have already made or might make to their teaching as they go about developing and deepening their understandings of the intent of the New Zealand Curriculum, and putting these intentions to work in the learning experiences they design and implement in their classes.

The 2009 NZCER National Survey was completed by 59 percent of all secondary principals (187 of a possible 319 state or stated integrated secondary schools) and by 34 percent of an invited sample of one in six secondary teachers in those schools. Analysis of respondent characteristics showed that the achieved samples were broadly representative of the diversity of New Zealand secondary schools (see Appendix One). The majority of questions discussed in this report invited closed responses, either to Likert-scaled banks of items on a specific theme, or to tick-box lists. Relevant cross-tabulations with other survey questions are described. Factor analysis was used to identify the degree of coherence in each individual's responses to any one item set.

In late 2007 the final version of an updated NZC (Ministry of Education, 2007) was released to schools, with full implementation expected to be completed by 2010. At the time the 2009 survey was taken secondary schools were still exploring the intent of NZC although some implementation changes were already underway. It is important to bear in mind that the actions and thinking reported are a base-line snapshot of early change in response to NZC. We expect to see greater shifts in thinking and practice at the time of the next NZCER National Survey of Secondary Schools in 2012.

The title of the report reflects the complexity that we see as inherent in any actions and changes that are intended to give effect to NZC's priorities and directions. The report builds on a recent synthesis of other research on the early stages of NZC implementation (Schagen, in press) making rich connections between curriculum implementation and other aspects of practice. It describes, for example, patterns of associations between individual beliefs and actions, and between both of these and specific types of opportunities for both personal and collegial professional learning. It identifies areas where additional support and deeper professional learning might be needed.

Using surveys to research the manner in which NZC has been understood and valued is challenging. Had we simply asked how important the key competencies were, for example, we

would have had no means of gauging what respondents thought they actually *are* or what they should be used to *do* in terms of teaching and learning—matters that other research had already shown to be by no means clear cut (see, for example, Boyd & Watson, 2006; Hipkins, 2008). The descriptive statements in this survey drew on the extant research and are intended to provide pointers to deeper thinking and reasoning. There are of course no guarantees that they were "read" by participants in the manner we had in mind, but the search for associations between responses to different questions did allow us to check hypotheses about curriculum meaning making that emerged as the analysis proceeded.

An overview of the following sections of the report

Section 2: The context for this report

A new version of any national curriculum has a history behind its development, and encompasses specific policy objectives of importance to the government of the day. This section frames the findings to follow by briefly outlining the nature of NZC and how it was developed.

Section 3: Learning about NZC

The focus here is on principals' and teachers' self-reports about their opportunities to learn about NZC—what they had paid attention to and whether they had done this via whole-school, smaller group or individual learning opportunities.

Section 4: What changes will NZC entail?

Principals' and teachers' perceptions of the types of actions that would be important for implementation of NZC are contrasted in this section, with both similarities and differences in response patterns discussed. This section also reports on one item set from the principal survey concerning extracurricular initiatives that have potential links to NZC.

Section 5: Learning experiences that teachers value

The key competencies were taken as a reference point to describe specific types of learning experiences that could occur in response to NZC. The extent to which teachers said they valued these types of experiences is discussed.

Section 6: The enacted curriculum in 2009

The list of learning experiences from Section 5 is revisited from the students' perspective—teachers said how often students might have opportunities to do these things. Learning experiences with potential learning-to-learn dimensions are also described, and the likelihood that discipline issues will impact on teacher innovation in practice is discussed.

Section 7: Support for pedagogical change

This section reports on collaborative inquiry into teaching and achievement, and collegial sharing between teachers. It identifies links between teacher collaboration, principal leadership and curriculum practice.

Section 8: Curriculum-related professional learning

Teachers' professional learning is the focus of this section—the programmes they have experienced and their perceptions of their effectiveness and of changes they have made as a result.

Section 9: What teachers see as barriers to curriculum change

This section explores teachers' perceptions of barriers to curriculum change across the last decade and reports on relationships between the barriers that teachers identified and the factors discussed in all the earlier sections.

Section 10: "Student voice" as an indicator of teacher orientation to NZC

Drawing together evidence from across the report this section argues that the idea of "student voice" might be pivotal to ongoing teacher learning about the intent of NZC.

Section 11: A tale of two teachers

Here the threads of the report are drawn together to sketch two apparently different types of NZC implementation experience and action in secondary schools.

© NZCER

2. The context for this report

For those who are less familiar with its structure and intent, this section outlines the nature of NZC as an outcomes-based framework and describes the types of decisions schools need to make as they give effect to it by building their own local curriculum.

NZC as a framework curriculum

NZC provides a *framework* for the school curriculum from Year 1 to Year 13. The whole of the nationally mandated curriculum is outlined in one slim book. Each school has to work out how to build up a more detailed local curriculum based on this national framework.

Figure 1 is taken from NZC (Ministry of Education, 2007, p. 7). This diagram summarises the component parts of framework while also showing how they fit together. For example, the vision statement sits at the top because it guides the reading and interpretation of the whole. This vision is given life by designing learning programmes that weave the values and key competencies through the "content" specified in the eight learning areas. Each of these learning areas has achievement objectives differentiated into eight curriculum levels that broadly indicate progress across all the years of school (from age five to around age 17 or 18). Each learning area also has a one-page "essence statement" that sets out in simple language the unique contribution that this learning area makes to students' overall learning. For example, the essence statement for the Social Sciences learning area begins with this paragraph:

> The social science learning area is about how societies work and how people can participate as critical, active, informed and responsible citizens. Contexts are drawn from the past, present and future and from places beyond New Zealand. (Ministry of Education, 2007, p. 30)

This is obviously a very general description that could be interpreted in many ways and applied to many potential topics of study. Similarly "high-level" ideals are described for every learning area. These need to be debated and understood in the context of the achievement objectives for that learning area before they can be given expression.

Individuals and teams of teachers must build each school's overall learning programme with all these parts in mind. This curriculum planning will ideally result in the provision of learning experiences that support all students to develop and strengthen their current competencies and to explore and model the curriculum values, all in the context of also learning the concepts and skills specified in the achievement objectives.

It will be evident that this is a complex *design* task. There could be very many different ways to assemble these pieces. Some high-level guidance is provided by a set of principles that NZC defines as "foundations to curriculum decision-making" (Ministry of Education, 2007, p. 9). The model in Figure 1 indicates this foundational role by placing them underneath the other components.

Figure 1 **NZC in relation to its relevant policy instruments**

One of the eight principles that underpin local curriculum decision making is *community engagement*: "The curriculum has meaning for students, connects with their wider lives, and engages the support of their families, whānau, and communities" (Ministry of Education, 2007,

p. 9). Thus schools are explicitly charged with taking account of the learning needs of all their students, and with reaching out to families and working with them to ensure their children's needs are met. This adds another whole layer of complexity to the challenge of designing a local curriculum.

Another principle is *coherence*: "The curriculum offers all students a broad education that makes links within and across learning areas, provides for coherent transitions, and opens up pathways to further learning" (Ministry of Education, 2007, p. 9). One design challenge here lies in reaching beyond the traditional "silos" of an education system designed according to 19th century "factory" models of efficiency: distinct year levels; different schools for students of different ages; separate subjects, often taught by different teachers and so on (Gilbert, 2005). Teachers need to see beyond their personal place within the system to take account of how learning "joins up" for students, both in the present and across their time at school.

Yet another design challenge arises at the intersection of both the *coherence* and *community engagement* principles: the curriculum needs to be student-centred: that is, to be designed with the interests of the students located at the heart of the learning, in all their diversity.

Local design/national accountabilities

New Zealand has a highly devolved education system, with the burden of responsibility for curriculum design and decision making resting with each school. In accountability terms, this constitutes a high trust model, but it does not mean that "anything goes". National accountabilities do exist and aspects of these are also built into NZC framework as indicated by the narrower *Guidance* arrow in Figure 1.

The School Curriculum: Design and Review section shown at the base of this arrow provides advice about ensuring coherence in learning pathways and that local curriculum meets the identified learning needs of all the school's students. This section shows New Zealand's National Education Goals (NEGs) and National Administration Guidelines (NAGs) in relation to the main components of NZC framework. Accompanying advice to boards of trustees (BOTs) spells out schools' obligations with regard to the assessment of students, reporting of progress to parents and adjustment of learning programmes to take account of specific learning needs revealed by the overall assessment programme. Thus strategic assessment information must be gathered (via robust assessment procedures) and used to set targets and make adjustments to subsequent curriculum plans. These Planning and Reporting cycles of school self-review are documented annually for MOE scrutiny.

The school exit qualification, awarded at three levels broadly corresponding to the final three years of secondary school—the National Certificate in Educational Achievement (NCEA)—has a flexible, modular structure that affords opportunities for local curriculum design right though to the end of schooling. NCEA is part of a National Qualifications Framework (NQF) that extends to post-school learning pathways. Thus there are additional curriculum design opportunities and challenges for secondary schools as they create coherent pathways through and beyond the senior

secondary years, taking account of the great diversity of learning needs of young adults about to leave their school years behind them to head in many different life directions (for a discussion of these possibilities, see Bolstad & Gilbert, 2008).

The *Effective Pedagogy* section of NZC (see Figure 1) also has accountability-related dimensions. It introduces a model of *Teaching as Inquiry* that charges teachers with seeking and acting on evidence about the impact of their teaching on their students' learning. Here *collective* cycles of inquiry (i.e., formal planning and reporting activities) are underpinned by *individual* accountability for the learning and progress of students in each teacher's classes.

Building a complex whole from the parts

In theory, if all the parts of this complex curriculum framework come together harmoniously, we might expect the whole to be more than the sum of the parts. In a learning *system*, knowledge *emerges in action* and transcends the limitations of the individual system components (Capra, 2002; Davis & Sumara, 2010). If that ideal could be achieved, every New Zealand student would experience learning opportunities at an appropriate level of challenge. They would be making good progress towards robust yet personally meaningful learning goals. All the teachers would also be learning and growing as they reflected individually and collaboratively during ongoing cycles of curriculum design and review. This is the vision but it is obviously just an ideal. In practice things are far from perfect. Building the plane while continuing to fly it is far from simple! Some schools have embraced the opportunity to work out how best to educate their students, and how to make all the parts fit together into a coherent, vibrant whole. Others have not. What makes the difference? This report identifies some likely contributing factors and these in turn point to additional support that might prove helpful for schools that are still in the beginning stages of implementation of NZC.

New curriculum thinking for new times

At the start of the new century pressure from outside education began to impact on curriculum thinking. New thinking from the OECD included the development of a set of *key competencies* to define learning outcomes that transcend the traditional focus on acquisition of content and practical skills, and to do so in an assessable manner so that the educational success of OECD member nations could be compared (Rychen, 2004). This new development both responded to, and potentially added to, the accountability pressures facing schools, while also bringing with it profound implications for rethinking schools' work.

The development of the "front-end" of NZC (vision, values, principles, key competencies and effective pedagogy sections) reflected emergent future-focused imperatives in a number of ways. The vision statement is for all young people to become "confident, connected, actively involved lifelong learners" (Ministry of Education, 2007, p. 8). The five *key* competencies were derived from the OECD originals and adapted in consultation with the education and business

communities (Rutherford, 2005). The principles that guide local curriculum decision making direct attention to the importance of learning-to-learn, educating students for their futures, holding high expectations for all learners, responding appropriately to the diversity of students now in New Zealand's schools and respecting the commitments of the Treaty of Waitangi.

Much of this aspirational front-end of NZC was shaped by a high-level team of representatives drawn from right across the education sector. This large group took part in a consultative, iterative series of "co-construction" activities, guided and supported by MOE, across several years. For example one nationwide research and consultation exercise resulted in the description of NZC values. These are intended to underpin curriculum thinking and also be a focus of explicit teaching and learning (Keown, Parker, & Tiakiwai, 2005). The actual writing of the front-end detail typically took place in smaller collaborative teams, at least for early drafts, and these drafts were then critiqued by the wider group. No doubt at least in part because of this co-construction, the front part of NZC has generally been favourably received in schools (Cowie et al., 2009; Schagen, in press).

A curriculum of two halves

Simultaneously with the high-level development work of the future-focused components, the learning area components of NZC were being developed by subject writing teams. Their brief, arising from an earlier Curriculum Stocktake, was to streamline and update the 1990s documents, but not to redevelop them.[1] Timing precluded a sequential focus, which made it difficult for most curriculum teams to get to grips with and integrate novel aspects such as the key competencies with the more traditional curriculum content. The unintended result of this simultaneous development, by differing teams using differing processes and working to differing mandates, is a curriculum of two halves.[2]

Schools are now required to integrate the front-end (future-focused) and back-end (revised and updated learning area guidance) for themselves as they develop their local curriculum. Curriculum Implementation Exploratory Studies (CIES) commissioned by MOE have found that doing so successfully calls for considerable sophistication in curriculum thinking and has proved thus far to require an iterative, extended period of professional learning (Cowie et al., 2009).

---

[1] In the event the Technology and Social Sciences learning areas were substantially redeveloped. Aspects of both had been contested in the 1990s and were relitigated. The Social Science team also attempted to create a common conceptual framework across quite disparate senior secondary subjects—geography, history and economics. Learning languages was separated from English to create an eighth learning area.

[2] This is much clearer in hindsight than it was at the time. I was one of a very small number of people who were part of a back-end (subject) writing team, and also a member of the larger group that contributed to the front-end development, yet the full complexity of integrating these two halves has only gradually become clear to me as I have carried out research such as that reported here and in the CIES project.

Support for the implementation of NZC

NZC was released to schools in draft form in 2006. Feedback from all schools was sought and acted on before the final form of the document was released in late 2007. In theory, this timing gave all schools at least two years to explore the intent of NZC and decide how they would respond before the stated implementation date of February 2010.

Those who chose to begin exploring possible curriculum changes as soon as they saw the new developments in the wind—called "early adopter" schools in the CIES studies—have now been effectively working on giving effect to NZC for four or five years. Many of them had seen parts of the curriculum as it was being constructed, usually because their leaders were involved in the process in some way. Some schools were making changes that aligned with the intent of NZC well before it was widely available, based on other professional learning.[3] For such schools NZC came as a confirmation of directions in which they were already headed, not as a bolt out of the blue (Cowie et al., 2009; Hipkins, Cowie, & Boyd, 2009).

Some schools did not appear to engage with NZC until it became obligatory to at least appear as if they were doing so. At the time of the 2009 survey, *all* schools should have been involved in a process of exploration and response to the new curriculum but there were already indications that some secondary schools were only just getting underway (Education Review Office, 2009). It may be that secondary teachers were reluctant to face yet another round of change after the sweeping changes of the 1990s, then NCEA in the early years of this century. Anecdotal experience suggests that this reluctance was exacerbated if teachers perceived that what was required was essentially a compliance response—yet again rewriting all their course documentation while continuing the real business of teaching to NCEA standards much as before.

Meanwhile, MOE supported the introduction of NZC in a range of ways. Schools were given several "teacher only" days in 2008 and again in 2009. Most appeared to use these to involve the whole-staff in shared learning about the intent of NZC, especially as signalled by the new front-end features such as key competencies. Research in early adopter schools showed there was no one "right" way to get started (Cowie et al., 2009) and schools were encouraged to simply plunge in and regard implementation as a learning journey rather than a one-off compliance activity.

School leaders were encouraged to attend whole-day courses led by their peers or by School Support Advisers, and some principals joined Principal Professional Learning Groups (PPLG clusters) where their implementation journey was facilitated by an experienced professional who already had a good grasp of the intent of NZC. Other MOE support was provided via a range of paper-based resources sent to schools and the development of a website called The New Zealand Curriculum Online (http://nzcurriculum.tki.org.nz/) dedicated to discussing curriculum issues,

---

[3] For example, the principal of one of the early adopter primary schools in the CIES was nearing completion of a PhD on self-regulated learning, which gave her a head start on understanding the intent of the key competencies.

hosting official MOE resources, including commissioned background papers, and posting narratives of successful school implementation actions and ideas.

Compared to NCEA, which was a similarly momentous policy change for secondary schools, more research was commissioned on the early stages of NZC implementation. The CIES studies, already mentioned, have now completed two rounds of exploratory case studies in schools known to be early adopters. The researchers in this project were charged with generating insights into both the successes and challenges of early implementation, so that MOE could provide more targeted support to later adopting schools as the need arose. Findings from the first round of CIES were posted on The New Zealand Curriculum Online website so that schools could also access them directly (Cowie et al., 2009) and several *Education Gazette* supplements were developed to convey what were seen as key implementation messages to a practitioner audience.

Snapshot research across a wider range of schools was provided by the Monitoring and Evaluating Curriculum Implementation (MECI) project and by Education Review Office (ERO) during their regular school visits (Education Review Office, 2009, 2010). A synthesis of all this early work has recently been prepared (Schagen, in press). Although this synthesis had not been released at the time this report was written it had been circulated to professionals actively working to support and research NZC implementation. NZCER researchers were aware of its content, including the finding that primary schools seemed to be somewhat ahead of secondary schools and that principals were generally more positive than teachers about the extent to which NZC-related practices had already been put into place (Schagen, in press).

3. Learning about NZC

This section reports principal and teacher perceptions of the opportunities provided (principals) and experienced (teachers) to learn about NZC. As Section 2 outlined, NZC explicitly requires schools to develop a local curriculum that responds to the learning needs of their students, in the context of their local community. The phrase "giving effect to NZC" has often been used to indicate that both careful interpretation and localised responses are required.

In order to give effect to NZC schools first need to develop a good understanding of the key messages in the national framework, exploring the intent of the various new features such as key competencies in relation to what they know of their own students and community. However, secondary schools also need to interpret the potential impact of the front-end features on the manner in which the back-end content is:

- organised into courses (there are, for example, timetable considerations)
- interpreted in relation to the "essence statements" (i.e., the concepts and understandings that really matter are clarified and justified)
- subsequently taught (where the pedagogical advice section of NZC must be taken into account)
- reflected in any school/subject assessment plans created (with implications for NCEA choices as well as for other school-based assessment and for reporting)
- checked against the principles that are intended to underpin all these other decisions.

As outlined in Section 1, seeing how all the pieces are intended to fit together as a local curriculum is designed was an important early challenge as schools began to learn about NZC. Seeing this overall pattern with clarity has necessitated considerable professional learning for secondary school leaders and teachers, given NZC's various points of potential departure from traditional secondary school practice. In addition to MOE-sponsored learning opportunities outlined in Section 1, many subject associations took up the challenge of supporting teacher learning via local meetings and national conferences. The secondary teachers' union, the PPTA, organised a nationwide series of one-day workshops to provide peer-led learning along similar lines to the "Jumbo Days" that supported the initial implementation of NCEA. The CIES research also pointed to learning opportunities that some principals strategically engineered by freeing teachers to visit colleagues in other schools, in order to explore implementation ideas together and observe in each other's classrooms (Cowie et al., 2009). Thus there were, in theory, multiple opportunities for teachers to learn about NZC, both individually and collectively.

Why the nature of professional learning opportunities is important

Even before NZC was introduced, an evaluation of curriculum innovation in five secondary schools had pointed to the importance of collaborative learning to develop shared understandings of the intent of the innovation (Boyd et al., 2005). Research of how key competencies were understood and given effect in early adopter schools reinforced this finding (Boyd & Watson, 2006; Hipkins et al., 2009).

Learning together as a whole-staff affords opportunities to:

* develop a shared understanding of the school's vision and values—everyone needs to learn to "walk the talk" if these are to be lived in practice
* identify and critique links between curriculum practice in classrooms and wider aspects of school life that signal the "hidden curriculum" (what really matters in this school)—for example, some early adopter schools have explored links between key competency development and the adoption of restorative justice processes to address discipline issues (Hipkins *et al.*, 2009)
* develop a shared language for planned pedagogical innovations—for example, doing this has been a common first step in developing an understanding of what key competencies will look like when demonstrated in classrooms (Boyd & Watson, 2006)
* avoid mixed messages about expectations—this is particularly important in secondary schools where students are likely to have a number of teachers in the course of a day
* identify opportunities for creating a more coherent curriculum by exploring potential links and overlaps between courses and learning areas
* explore and develop plans for structural changes such as the introduction of longer learning periods—research shows that the intent of this type of innovation must be understood by all teachers or some will subvert the intention of longer learning periods by resorting to "business as usual" (Hipkins, with Shanks, & Denny, 2008).

These whole-school learning challenges also apply at the level of faculty and subject teams, where they are joined by other considerations such as consistency of interpretation of any shared new courses that may be planned. This has particular equity implications where a common assessment is shared by multiple classes with different teachers. If one teacher neglects to address some of the intended understandings and skills, for whatever reason, students in this class may face a common assessment task for which they have not had the same chances as other students to adequately prepare.

For which parts of NZC did collaborative learning occur?

With learning challenges such as those outlined above in mind, we were interested to explore principals' and teachers' perceptions of the nature of the learning opportunities they had

experienced. A bank of items asked about *where* the various components of the curriculum had been explored: in whole-staff meetings; in curriculum teams; via personal learning experiences. Respondents could select any or all of these, or they could indicate that this aspect of the new curriculum had not yet been a focus.

The next eight tables compare the principal and teacher responses to each of the listed components. Most principals and many teachers reported having encountered three front-end components (the vision, values and principles) in whole-staff explorations, with fewer respondents having explored these components in teams or individually. The pattern is different for the revised and updated achievement objectives, which were more likely to have been explored in teams. Congruent with this, the front-end components most closely associated with the achievement objectives (i.e., the essence statements and the curriculum design and review section) were also more likely to have been explored in teams. The key competencies and the section that provides advice on pedagogy sit somewhere between these two patterns: they were most often explored by the whole-staff, yet also likely to have been explored by teams in around half the respondents' schools.

Exploring the vision and values statements

Tables 1 and 2 suggest that, by early in Term 3 2009, the values and vision statement had been a focus of whole-staff learning in most secondary schools, at least as far as principals were concerned. The percentage of teachers who thought they had experienced these same "whole-school" opportunities was somewhat lower, with a small number perceiving they had not yet focused on these important changes that signal the overall intent of the new curriculum as a whole.

Table 1 **How the values had been explored by mid-2009**

Where encountered	Principals (n=187) %	Teachers (n=870) %
Explored as a whole-staff	95	78
Explored in teams	38	39
Explored individually	18	19
Not yet a focus	-	3

Numbers add to more than 100 because multiple responses were possible

Table 2 **How NZC vision statement had been explored by mid-2009**

Where encountered	Principals (n=187) %	Teachers (n=870) %
Explored as a whole-staff	95	76
Explored in teams	35	34
Explored individually	16	14
Not yet a focus	2	6

Numbers add to more than 100 because multiple responses were possible

Principals are responsible for leading curriculum change in their schools so we would expect their responses here to accurately reflect the intended focus of the whole-school learning. Research in early adopter schools has pointed to the value of distributing curriculum leadership across a wider team and over 90 percent of the associate and deputy principals who responded (n=52) said they had learnt about NZC vision and values in whole-school settings. They also said this for exploring NZC principles and key competencies.

Some teachers, however, may not have been present, or not paying attention. Teachers who did not work in one of NZC learning area groups (the "other" category for the "subject cluster" variable—see Appendix B) were less likely than all other teachers to identify whole-school exploration of the vision statement as an opportunity they had experienced and this pattern also held for exploring NZC principles. This could mean that ancillary teachers with no clear subject teaching responsibilities were left out of some whole-school learning events.

Exploring the principles

Other implementation research has suggested that the principles might not have received quite the same levels of early scrutiny as the values and vision of NZC (Cowie et al., 2009). To an extent the next table supports this finding, with somewhat fewer principals reporting this as a focus of whole-school exploration. The teachers, however, perceived that the principles had received similar attention to the values and vision.

Table 3 **How the principles had been explored by mid-2009**

Where encountered	Principals (n=187) %	Teachers (n=870) %
Explored as a whole-staff	88	73
Explored in teams	35	36
Explored individually	13	15
Not yet a focus	2	6

Numbers add to more than 100 because multiple responses were possible

Exploring the key competencies and effective pedagogy sections

While key competencies show a similar pattern to the NZC vision, values and principles as far as whole-school explorations are concerned responses in the next table are notable for the increased frequency of exploration by smaller teams. Compared to the vision, values and principles there is also a modest increase in percentages of individual principals and teachers who said they had undertaken a personal exploration of their features. Key competencies are arguably the single most different and future-focused change between NZC and the 1990s curriculum documents which doubtless accounts for this increased level of scrutiny in settings other than (presumably mandatory) whole-school learning.

Key competencies have the potential to impact directly on how curriculum is taught and this increased level of team and personal scrutiny could also reflect this realisation. A very similar response pattern for the effective pedagogy section of the curriculum (Table 5) supports this as a possible interpretation.

Table 4 **How the key competencies had been explored by mid-2009**

Where encountered	Principals (n=187) %	Teachers (n=870) %
Explored as a whole-staff	91	81
Explored in teams	51	56
Explored individually	21	26
Not yet a focus	-	1

Numbers add to more than 100 because multiple responses were possible

Table 5 **How the effective pedagogy section had been explored by mid-2009**

Where encountered	Principals (n=187) %	Teachers (n=870) %
Explored as a whole-staff	85	65
Explored in teams	55	49
Explored individually	24	26
Not yet a focus	1	5

Numbers add to more than 100 because multiple responses were possible

Exploring implications for curriculum design and review

Compared to the above response patterns, there is another change for the curriculum design and review aspect of the curriculum. These NZC pages offer advice for working with and making changes to the current curriculum, as opposed to setting out new directions per se. In view of this shift from aspirations to specific actions, it seems understandable that this part of NZC was more likely to have been explored in teams than in whole-school settings, although nearly half the principals did report whole-school exploration.

Table 6 **How the curriculum design and review section had been explored by mid-2009**

Where encountered	Principals (n=187) %	Teachers (n=870) %
Explored as a whole-staff	48	37
Explored in teams	67	59
Explored individually	18	25
Not yet a focus	4	8

Numbers add to more than 100 because multiple responses were possible

A similar pattern holds for the learning area statements (sometimes called "essence" statements) and for the achievement objectives, although here we see an increase in percentages of teachers reporting that this part of the curriculum had not yet been a focus (Tables 7 and 8).

Table 7 **How the learning area statements had been explored by mid-2009**

Where encountered	Principals (n=187) %	Teachers (n=870) %
Explored as a whole-staff	25	24
Explored in teams	74	51
Explored individually	18	24
Not yet a focus	7	16

Numbers add to more than 100 because multiple responses were possible

Table 8 **How the achievement objectives had been explored by mid-2009**

Where encountered	Principals (n=187) %	Teachers (n=870) %
Explored as a whole-staff	24	26
Explored in teams	75	56
Explored individually	25	30
Not yet a focus	8	12

Numbers add to more than 100 because multiple responses were possible

Differences related to role in school, subject area and school decile

Reflecting their leadership roles, deputy and associate principals were more likely than other teachers to say they had taken part in team learning about the learning area essence statements and the achievement objectives. As we might expect given their roles, faculty leaders were more likely to report undertaking individual explorations of the design and review section of NZC. The most experienced teachers (11+ years' teaching) were more likely to say the whole-staff had explored both the key competencies and effective pedagogy sections of NZC. Teachers with between 0–2 years' experience were *less* likely to say the whole-staff had explored the vision statement.

Mathematics and science teachers were less likely to report whole-school exploration of the learning area essence statements and achievement objectives but this difference did not hold for team or individual explorations. Perhaps some of them paid less attention until their active participation became unavoidable? (Indications of resistance to change from some teachers of these subjects will be described in sections to come.)

Teachers in deciles 1 or 2 schools were less likely, and teachers in deciles 9 or 10 schools more likely, to say they had undertaken *team-based* explorations of the: principles; values; key competencies; effective pedagogy; curriculum design and review; and achievement objectives.

This pattern suggests that initial whole-school learning was less likely to be followed up in faculty or cross-curriculum teams in the low-decile schools. Teachers in deciles 1 or 2 schools were also less likely to have made an individual exploration of effective pedagogy.

Thinking about implications for curriculum change

At the start of this section the importance of developing shared curriculum values and understandings was highlighted as a reason for collaborative learning about NZC. What we see in this section is a general pattern of shared whole-staff learning about many of the front-end features of NZC but a greater likelihood of team-based explorations of the back-end that contains the specifics of the learning area frameworks (essence statements and achievement objectives). This is understandable given that at some point all secondary teachers need to focus on the direct implications of curriculum change for the subjects they personally teach. However, what seems to have been assumed is that, having developed a collective understanding of the new (front-end) features of NZC, teams will be able to carry that new learning into a coherent and consistent translation of its implications for their respective subject areas.[4] No doubt this would be easier to achieve if NZC had clear and specific links between the aspirational front sections and the back learning area detail but, as outlined in Section 1, NZC's history is one of development as a document of two halves.

The ideal resolution for this dilemma would seem to be to undertake ongoing whole-staff *and* team explorations, so that detailed planning and school-wide curriculum development can remain attuned. However, just 13 percent of teachers said they had explored the learning area statements as both whole-staff and faculty teams by mid-2009, and just 14 percent said they had explored the achievement objectives in both whole-school and team settings. Given that finding shared professional learning time is an ongoing challenge (see Sections 7 and 8), this seems not especially likely to happen unless it comes to be seen as a priority (see the argument for this in Section 9).

Since it seems to be up to individuals and teams to work out how to apply the front-end features of NZC to their subjects, what sorts of changes do they believe will be needed? The next section reports on beliefs about what curriculum implementation should entail. Some of these beliefs might have shifted in response to learning about NZC, but others are likely to be deep-seated and not even consciously recognised. Transforming long-held and commonly shared beliefs is challenging. At the very least teachers need learning experiences that do make the space to explore tacit beliefs in ways that resonate with their values and their perceptions of the teacher role (Timperley, Wilson, Barrar, & Fung, 2007).

---

[4] One of the eight principles, *coherence*, includes the recommendation that the school curriculum should "make links within and across the learning areas" (Ministry of Education, 2007, p. 9).

4. What changes will NZC entail?

This section compares principal and teacher responses to the question *How important do you think it is for your school to do the following things as part of the process for implementing the New Zealand Curriculum?* Responses were invited to 16 different possible actions, using a 5-point Likert scale from very important to not at all important. Figure 2 shows the changes that principals believe to be important for giving effect to NZC, in descending order of frequency. The equivalent data for teachers are then presented in Figure 3.

A focus on pedagogy

NZC contains explicit messages about features of pedagogy that are appropriate to achieving meaningful learning for all students. The "Effective pedagogy" section outlines the importance of:

- creating supportive learning environments;
- encouraging reflective thought and action;
- helping students see the relevance of their new learning;
- facilitating shared learning;
- helping students make connections to prior learning and experience;
- supplementing traditional learning with e-learning opportunities; and
- providing sufficient opportunities to learn (for example encountering new learning a number of times, in different tasks and contexts) (Ministry of Education, 2007, pp. 34–36).

The suggestion is made that traditional "content coverage" may need to be reduced to make space for more interactive ways of working. The need for strong communication between teacher and learners is further emphasised by the introduction of a model of "teaching as inquiry" that requires the teacher to explore the actual impact of their teaching on student learning. (Section 7 explores some implications of enacting such inquiries in the wider school context, as well as in teachers' own classes.)

Figures 2 and 3 suggest that *changing aspects of pedagogy* is indeed widely seen as important for giving effect to NZC. "Change aspects of pedagogy" was the item given an overall top ranking by principals (a near unanimous 95 percent said it was quite or very important). The same item was given overall second ranking by teachers (81 percent said it was quite or very important). However, the response from teachers was not unanimous, with 11 percent of them saying they were not sure if this would be important and 7 percent disagreeing. Deputy and associate principals were the teacher group most likely to agree that changing pedagogy would be very important.

Figure 2 **Principals' views of what needs to be done to implement NZC (n=187)**

Legend: No response | Not at all important | Not very important | Neutral/ not sure | Somewhat important | Very important

Item	Not very important	Neutral/not sure	Somewhat important	Very important
Change aspects of pedagogy	2	20		75
Rewrite schemes and/or unit plans	3	36		52
Make greater use of authentic contexts	10	44		41
Use more self and/or peer assessment	13	47		36
Give students a voice in curriculum planning	6	17	45	32
Seek Maori community input into the curriculum	16	21	45	27
Create more pathways through senior secondary school	4 9	18	39	30
Redevelop school vision and/or values	6 13	14	33	33
Seek parent input into curriculum	10	27	42	19
Reorganise format of school reports	3 16	21	39	20
Seek community input into curriculum	3 10	27	43	16
Look at how the new national standards relate to our year 9 programme	5 13	24	45	13
Introduce new types of courses	3 14	27	41	14
Create means of assessing key competencies	9 16	24	33	19
Redesign NCEA assessment	4 16	31	37	11
Restructure timetable	6 14	31	31	17

%

Three other items that imply changes in pedagogy were also rated as important or somewhat important by at least three-quarters of the principals: make greater use of authentic contexts (85 percent); use more self- and/or peer assessment (83 percent); and give students a voice in curriculum planning (77 percent). Two of these changes were also seen as important or somewhat important by more than two-thirds of the teachers: make greater use of authentic contexts (70 percent); use more self- and/or peer assessment (69 percent). However, teachers were much less likely than principals to think it would be important to give students a voice in curriculum planning (53 percent).

Figure 3 **Teachers' views of what needs to be done to implement NZC (n=870)**

Legend: No response | Not at all important | Not very important | Neutral/Not sure | Somewhat important | Very important

Item						
Rewrite schemes and/or unit plans			15	37	52	
Change aspects of pedagogy		16	11	41	40	
Look at how the new national standards relate to our Year 9 programme		23	16	45	33	
Make greater use of authentic contexts		14	21	42	28	
Create more pathways through senior secondary school	3	8	19	38	31	
Use more self and/or peer assessment	2	7	19	48	21	
Reorganise format of school reports	4	14	20	41	20	
Redesign NCEA assessment	5	10	23	36	24	
Introduce new types of courses	4	11	25	35	23	
Create means of assessing key competencies	9	12	18	34	24	
Seek Maori community input into the curriculum	5	13	25	39	17	
Redevelop school vision and/or values	7	15	22	34	21	
Give students a voice in curriculum planning	5	14	26	38	15	
Seek community input into curriculum	5	18	29	32	14	
Seek parent input into curriculum	6	18	30	30	15	
Restructure timetable	8	20	26	27	17	

%

Associate and deputy principals were more likely than other teachers to say that making greater use of authentic contexts would be important. Teachers of mathematics and science were more likely than teachers of other subjects to say that giving students a voice in curriculum planning would *not* be important.

Teachers in deciles 1 or 2 schools were more likely than those in higher decile schools to agree that giving students a voice in curriculum planning would be important or very important. This pattern also held for mid-career teachers (between three and 10 years' experience). There were indications that these associations with decile and stage of career were interrelated.

Making changes to school documentation

Curriculum planning is one type of documentation that ERO checks when visiting schools. Section 1 predicted that the outcomes-driven curriculum changes of the 1990s might carry over in the perception that making changes to schemes of work would be an important aspect of implementation of NZC. The data in Figures 2 and 3 appear to bear this out: 88 percent of principals and 89 percent of teachers said this would be important or very important to implementation. It was the top-ranking item for teachers and second-ranked item for principals.

Another important type of documentation relates to the school charter and the vision and values that have been identified as important to the school. More principals (66 percent) than teachers (55 percent) saw it as important or very important to redevelop the school vision and values. The difference could be role-related because principals must liaise with their BOT as the representatives of the community to shape or revise the charter. The differences of opinion about the importance of revisiting the school vision and values could relate to whether this is seen as a compliance exercise or an important driver for bringing NZC's intent to life in the school. In early adopter schools exploring the vision and values *together* was an important part of developing a shared understanding of the changes that NZC would entail (Cowie et al., 2009; Hipkins et al., 2009). Some schools have developed a visual metaphor that serves as a touchstone for communication within the school and between the school and the community.

Just over half the mathematics and science teachers were unsure or thought it would be unimportant to redevelop the school's vision and values—more than any other subject group. Deputy and associate principals, and those in careers/transition/guidance roles, were more likely than other teachers to see this as very important.

Changing assessment and reporting processes

More teachers (60 percent) than principals (48 percent) thought it would be important or very important to redesign NCEA assessments. This was one of two items about which greater numbers of principals were uncertain (the other was restructuring the timetable). Fewer teachers were uncertain (23 percent) and these differences doubtless reflect teachers' roles in shaping and carrying out the actual assessments for NCEA. Exactly how such assessments might change, and in what way changes might reflect NZC priorities, cannot be ascertained from this research. This question could be worthy of further investigation given the tendency for NCEA to continue to drive curriculum thinking (Hipkins, 2010).

One possibility for showing *on paper* that NZC has been implemented might be to show that new aspects such as key competencies are taken seriously because they are assessed (Hipkins, 2009). Just how this might be done has been controversial. Key competencies are supposed to be demonstrated *in use* and this requires non-traditional assessment formats, at least for those teachers who are more accustomed to assessing acquisition and understanding of traditional academic "content". These complexities might explain why there was some disagreement and

relatively higher levels of uncertainty that creating the means to assess key competencies would be important or somewhat important (52 percent of principals and 58 percent of teachers saw this as important; 24 percent of principals and 18 percent of teachers were unsure; 25 percent of principals and 21 percent of teachers saw this as not important).

NZC is explicit about the need to engage the support of families, whānau and communities to help connect students' learning to their wider lives (this is one of the eight NZC principles). Reports are one means by which such communication has traditionally taken place, at least from school to home, and creating clearer lines of communication might arguably be aided by revising the format of school reports. Another reason for such revision might be to report on new aspects of learning such as making progress in strengthening key competencies. One item asked how important it might be to reorganise the format of school reports. Again, just over half of each group (59 percent of principals and 61 percent of teachers) saw this as important or very important.

Relative to teachers with other roles, guidance counsellors and careers/transition teachers were more likely to say it would be important to create a means of assessing key competencies. The most experienced teachers (11+ years' experience) were more likely than other teachers to rate this as not very or not at all important (24 percent of this group, compared to 17 percent of midcareer teachers and 8 percent of early career teachers). The most experienced teachers were also the least likely to be unsure, suggesting that they had more confidence in their convictions either way.

Making changes to school structures

As Section 1 discussed, NZC requires schools to develop a local curriculum within the overall national framework, and to show how this meets the learning needs of their own students. One way for secondary schools to do this could be to create more pathways through the senior school, leading on to different types of work and/or further study options. There was a widely held understanding that this type of structural change would be an important or somewhat important aspect of NZC implementation (69 percent of both principals and teachers agreed).

Another way to meet a wider range of learning needs, or perhaps to create greater coherence in the overall curriculum (as required by one of the eight NZC principles) is to introduce new types of courses. Just over half of each group saw this as important or very important (55 percent of principals, 58 percent of teachers). A similar number of principals (58 percent) saw it as important or very important to look at how the new National Standards relate to the school's Year 9 programme. Interestingly, more teachers (78 percent) saw this as important or somewhat important. Although we cannot tell in what way these teachers thought their Year 9 programmes should change, it is interesting that half of the teachers who agreed in principle with the idea of giving students more say in their learning (specifically, they strongly disagreed that there is too much emphasis on student voice nowadays—see Section 7) also saw it as very important to

review the school's Year 9 programme against the National Standards. This clear association perhaps suggests that they had finding appropriate ways to meet students' learning needs in mind.

There was close agreement between the two groups about the relative lack of importance of restructuring the timetable. Just 48 percent of principals and 44 percent of teachers said this would be important or very important and it was the lowest ranking item on both lists. However, around a quarter of the teachers and a third of the principals were unsure if this would be important.

Teachers in low-decile schools were more likely to see the introduction of new types of courses as important. Congruent with this, they were also more likely to see timetable restructuring as important. Again, mathematics and science teachers were the least likely subject grouping to see timetable restructuring as important.

Bringing other "voices" to curriculum implementation

Research on implementation of NZC suggests that some secondary teachers' views might be lagging behind, or at least not in full agreement with those of their school leaders (Schagen, in press). The data reported in this section thus far show some differences between the two groups but these differences become greater for those items that suggest bringing other voices to curriculum decision making as an important aspect of NZC implementation. The next table summarises the differences for these items.

Table 9 **Items related to opening up curriculum decision making to include students, families and members of the wider community**

Item	% important or very important		
	Principals (n=187)	Teachers (n=870)	Difference
Give students a voice in curriculum planning	77	53	24
Seek Māori community input into the curriculum	72	56	16
Seek parent input into curriculum	61	45	16
Seek community input into curriculum	59	46	13

Factor analysis revealed a strong degree of coherence in the manner in which individuals responded to these four items (principals, $\alpha=0.89$; teachers, $\alpha=0.92$). Individuals who disagreed with one were likely to disagree with them all, and vice versa. We called this factor *community input*.

Teachers of mathematics and science were more likely than other teachers to see student, parental, community and Māori input into the curriculum as not important. Again, teachers in deciles 1 and 2 schools, and mid-career teachers, were likely to see all of these as important aspects of NZC implementation.

Responses to an item set elsewhere in the surveys suggested that almost all principals, teachers, parents and trustees support the idea of involving parents/whānau in discussing *their own child's* learning progress, and in making decisions about this learning (although 10 percent of teachers and 9 percent of parents were unsure about the decision-making aspect). However, there were more varied views on whether parents/whānau should be involved in making decisions about *learning in general* at the school. Over a quarter of the parents and teachers disagreed with this idea or were unsure about it. While nearly half the teachers (44 percent) did agree that their community had realistic expectations of the school, 35 percent were unsure and 22 percent thought they did not. By contrast, principals were much more positive, with 74 percent of them agreeing that expectations were realistic.

How views about implementation align with other aspects of teacher thinking

As reported above, the four items in Table 9 constituted a factor called *community input*. Responses to the balance of items shown in Figures 2 and 3 also showed associations with each other, albeit not quite as strongly correlated (principals, α=0.072; teachers, α=0.082). We called this factor *NZC-related changes*. There was only a moderate correlation between these two factors (r=0.061) so they do seem to be tapping into somewhat different belief sets.

Seeking to round out the picture of other influences linked to curriculum thinking, these two factors were cross-tabulated with a wide range of other survey questions. Possible influences highlighted by the patterns found are shown in bold below.

Associations with demographics

In addition to the decile-related differences described above, there were indications that teacher responses were related to the **student composition** of the school. The higher the percentage of Māori students on the roll the more likely teachers were to rate community input as very important.

Associations with morale and work fulfilment

There were no significant differences in the views of principals who reported differing **morale** levels. However both *community input* and *NZC-related changes* were strongly associated with levels of teacher morale. The higher their morale, the more likely teachers were to rate the suggested NZC changes as very important. The converse also held. Teachers reporting satisfactory or poor morale were more likely to rate NZC changes as not important or not at all important.

Teachers who agreed overall that these aspects of curriculum implementation would be very important were more likely to identify a mix of the following as among their **main achievements** in the last three years: beginning implementation of NZC; better meeting the learning needs of a

group of students; implementing an innovative programme; achieving a positive or improved learning environment; improved student assessment for learning; use of new pedagogies/teaching approaches; increased student engagement levels in class; and an increase in their own knowledge and skills.

Differing patterns of teacher responses to NZC

The pattern that emerges from the cross-tabulations of the individual item responses and the factor associations with other survey questions points to the possibility that teachers have responded to NZC in one of two different ways.

Many secondary teachers do appear to be fully engaged with curriculum conversations. They are considering the change implications of NZC's key messages, along with new possibilities for interaction and curriculum input. This group is likely to include more experienced teachers and senior leaders (the two go together). There are beginnings here of the suggestion that a reinforcing spiral of success is engaging and encouraging these more responsive teachers to keep learning and evolving their practice. This picture will become clearer in the sections still to come.

The contrasting group of teachers appear not to be as engaged, and they are less likely to see change as important. There are already some indications that mathematics and science teachers are relatively more likely to be in this group, compared to teachers of other subjects. Again, this pattern will become clearer in the sections to come, with some indications that the pattern might relate to the conservatism often associated with the pedagogy of these subjects.

Potential for alignment between NZC changes and other school initiatives

The principals' survey included a question about initiatives that are likely to have an impact on the wider school climate/values (i.e., the so-called "hidden curriculum" of the school). From a list of seven possible initiatives they were asked to indicate *which of the following your school currently has, and how long it has been running in your school*. The next figure shows the results.

It appears that most secondary schools have anti-bullying programmes that have been in place for at least two years and in many cases more than three years. Just 9 percent of principals said they did not have such a programme or did not say either way. The pattern is very similar for the other two more traditional initiatives: student leadership/mentoring of other students and identification and support for at-risk students.

Figure 4 **Initiatives related to the wider school climate/values**
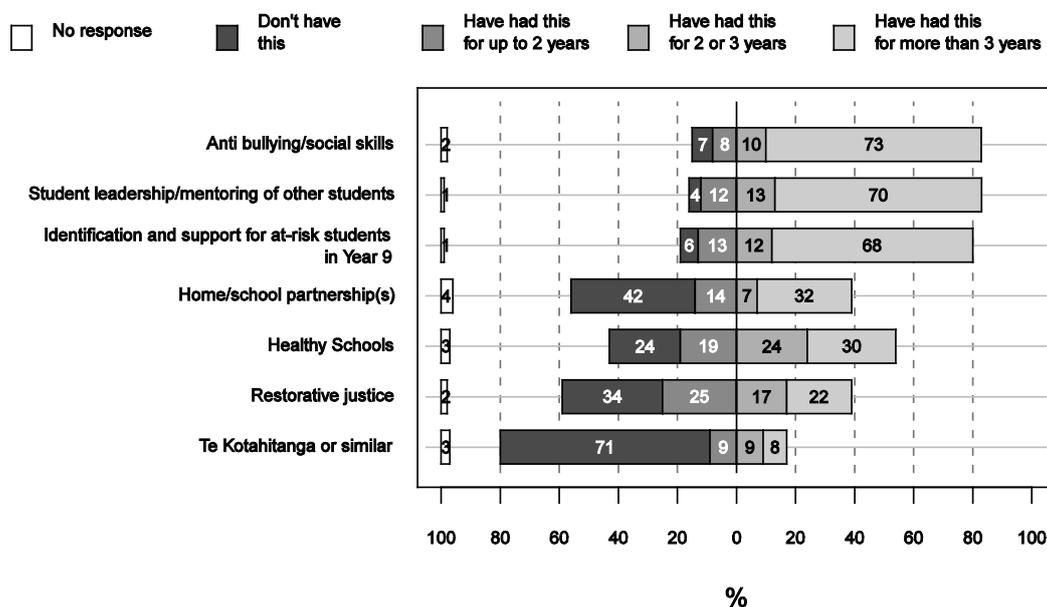
The pattern changes when we consider the items that are more explicitly values-linked. Within the front part of NZC this formerly "hidden" aspect of curriculum is now explicitly noted as making a contribution to overall NZC implementation. For example, the values statement in NZC notes that:

> Every decision relating to the curriculum and every interaction that takes place in a school reflects the values of the individuals involved and the collective values of the institution. (Ministry of Education, 2007, p. 10)

Some of the initiatives selected for this question adopt explicit positions with respect to their underpinning values:

• Te Kōtahitanga seeks to support Māori students to enjoy success *as Māori* (which is also made explicit in MOE policy document Ka Hikitia).
• Healthy Schools and Restorative Justice initiatives are framed by socio-ecological values that acknowledge the role played by contexts and relationships in determining how individuals behave and make choices.
• Establishing home/school partnership initiatives is an indication that increased levels of school–community interaction are valued.

None of these are as common as the more traditional initiatives. In the case of Te Kōtahitanga it should be noted that only schools with high numbers of Māori students on the roll have been funded by MOE to take part so we would expect to see that many schools do not have such a programme. MOE also developed the home/school partnership initiative, which 53 percent of the principals said they had used.

The Restorative Justice initiative is voluntary and open to any school to adopt. All but one of the 41 schools whose principals reported having a restorative justice programme also had an anti bullying/social skills initiative that had been in place for more than three years.[5] The school that was an exception had had such a programme for between two and three years. This pattern raises interesting questions about the relationship between having prior experience of a more basic type of social skills initiative and subsequently adopting a more challenging and explicitly values-laden model. Is it that taking up a restorative justice programme is simply congruent with the wider values already in place in the school for a number of years? Or is it that a certain level of confidence in implementing basic social skills programmes provides a necessary foundation for more complex social skills initiatives that adopt specific philosophical and values positions? This question bears further investigation. We checked and found no obvious pattern of associations between principals' beliefs of what curriculum implementation would entail (Section 2) and their identification of any one of the above extracurricular initiatives in the school.

Principals of deciles 1 or 2 schools were more likely to say the school had a restorative justice programme, and that they took part in Te Kōtahitanga or a similar initiative. In these low-decile schools such programmes were likely to have been in place for at least two to three years.

---

[5] No other significant associations between the seven initiatives were found.

5.   Learning experiences that teachers value

Section 3 explored high-level changes that might be made in response to NZC implementation and reported the widespread perception that it would be important to change aspects of pedagogy. But what might this actually mean in terms of specific learning experiences that teachers orchestrate for students? This section describes the value that teachers say they place on a range of potential learning experiences and the next section asks them to say how often these types of experiences are offered to their students.

The item set reported in this section was worded: *Thinking about the learning experiences you plan for your classes, how much do you value each of the following?* The set then listed 11 possible types of learning experiences and the teachers responded via a 5-point Likert scale (strongly value, value, neutral/not sure, not much value, no value).

Implications of key competencies for students' learning experiences

Many sorts of learning experiences could have been described for the item set discussed in this section. An exhaustive list was not possible because of space and time constraints for the overall survey. We chose to adapt a set of items from the Competent Learners longitudinal study, about which we already had considerable insights, and which had been devised with the key competencies in mind (Wylie, Hipkins, & Hodgen, 2008).[6] A focus on the difference key competencies might make to pedagogy is apt. Exploratory research has shown they have the potential to bridge the front-end/back-end divide in NZC. They do this by reframing traditional content-focused teaching to enact the future-focused front-end messages in ways that make a demonstrable difference in classroom practice (see, for example, Bolstad, Roberts, Boyd, & Hipkins, 2009; Bull, Hipkins, Joyce, & MacIntyre, 2007). Features of the key competencies that exemplify this potential are now briefly outlined and linked to specific items in the survey question set.

---

[6]   NZC describes five key competencies: *managing self; relating to others; thinking; using language, symbols and texts; participating and contributing*. They were adapted from OECD work that sought to define a core set of competencies that every individual needs in order to lead a successful life in a well-functioning society (Rychen & Salganik, 2003).

A participatory ethos for key competencies

By definition, key competencies are used by everyone as they "live, learn, work, and contribute as active members of communities" (Ministry of Education, 2007, p. 12). They are developed in social contexts and strengthen over time as students adapt what they already know and can do when putting their growing competencies to work in new contexts. Curriculum challenges here include linking new school learning to students' lives in meaningful ways and giving them appropriately challenging opportunities to *use* their new knowledge and skills in ways that further strengthen their competencies. Items from the survey that reflect this participatory dimension of pedagogy include:

- Making connections with things in the students' lives outside school
- Including inquiries about real things/issues
- Providing hands-on/practical activities
- Finding out about students' interests.

A learning-to-learn connection

NZC positions key competencies as "key to learning in every learning area. The development of the competencies is both an end in itself (a goal) and the means by which other ends are achieved" (Ministry of Education, 2007, p. 12). *Learning to learn* is one of the eight NZC principles. The definition given for this principle adds a reflective dimension to the participatory ethos outlined above:

> The curriculum encourages all students to reflect on their own learning processes and to learn how to learn. (Ministry of Education, 2007, p. 9)

The potential link between key competencies and learning-to-learn is further exemplified in the *Design and Review* section of NZC where the last paragraph under the heading *Key Competencies* says:

> With appropriate teacher guidance and feedback, all students should develop strategies for self-monitoring and collaborative evaluation of their performance in relation to suitable criteria. Self-assessments might involve students examining and discussing various kinds of evidence, making judgements about their progress, and setting further goals. (Ministry of Education, 2007, p. 38)

Items from the survey that potentially reflect this participatory learning-to-learn key competency/ pedagogy link include:

- Finding out about and working with students' current understandings
- Giving students time to think and talk about how they are learning
- Getting students to assess each other's work and give feedback
- Sharing assessment decision making with students.

Most teachers are likely to say they already try to find out what interests students and what they know and can do. However, key competencies add additional dimensions to pedagogy by placing an emphasis on the metacognitive/reflective dimensions of learning. Students need to develop an informed awareness of their own thinking and learning progress. Teachers cannot help students make personal decisions about these matters unless they first take steps to uncover student thinking and meaning making. With this in mind, a third dimension of pedagogy for key competency development potentially adds yet another challenging dimension to teachers' work.

A focus on acts of meaning making

The key competency titled *using language, symbols and texts* was called *meaning making* in an early curriculum draft. The intention reflected here is to support students to learn, over the years of school, how meaning is made via the various cultural tools and processes used for creating and conveying knowledge. NZC somewhat cryptically describes this as "working with and making meaning of the codes in which knowledge is expressed" (Ministry of Education, 2007, p. 12). The nature of each discipline is in focus here. For example, the Nature of Science is an overarching strand that is intended to be integrated with the more traditional knowledge components in the Science learning area.

Research has shown that *using language, symbols and texts* is the key competency least likely to be understood as schools first explore NZC (Boyd & Watson, 2006). Because of its unfamiliarity and philosophical dimensions it is hard to encapsulate as succinct statements of potential learning experiences. Those we used were:

• Integrating literacy components where possible
• Discussing different ways of looking at things/different interpretations
• Integrating content from several subjects/learning areas.

The first of these items links to the literacy dimensions that are evident in the title of the key competency and hence cues a relatively "surface" level reading of its intent. The third has the potential to highlight differences in meaning making only *if* the knowledge-building conventions of the different learning areas are contrasted. Again, it is only potentially an example of this specific key competency/pedagogy link. This item could also have been positioned as potentially illustrating the participatory dimensions of competencies because integrated studies tend to take "authentic" contexts as the mechanism that gives meaning to the integration.

The learning experiences that the teachers valued

The links to key competencies outlined here may not have been in teachers' sights when they responded to these items. Many teachers would still have been in the early stages of exploring the idea and intent of key competencies. Research in early adopter schools has shown that an understanding of their potential develops via an iterative cycle of deepening insights over time,

and there does not seem to be any way of short-circuiting this learning (Cowie et al., 2009). We cannot know for sure how deeply the responding teachers did understand the potential NZC resonances of the learning experiences discussed above. Nevertheless the pattern of their responses could help inform ongoing professional learning in this area and we will return to this question shortly. The next figure shows the extent to which the various learning experiences were valued by the responding secondary teachers.

Figure 5 **The learning experiences that teachers said they value (n=870)**
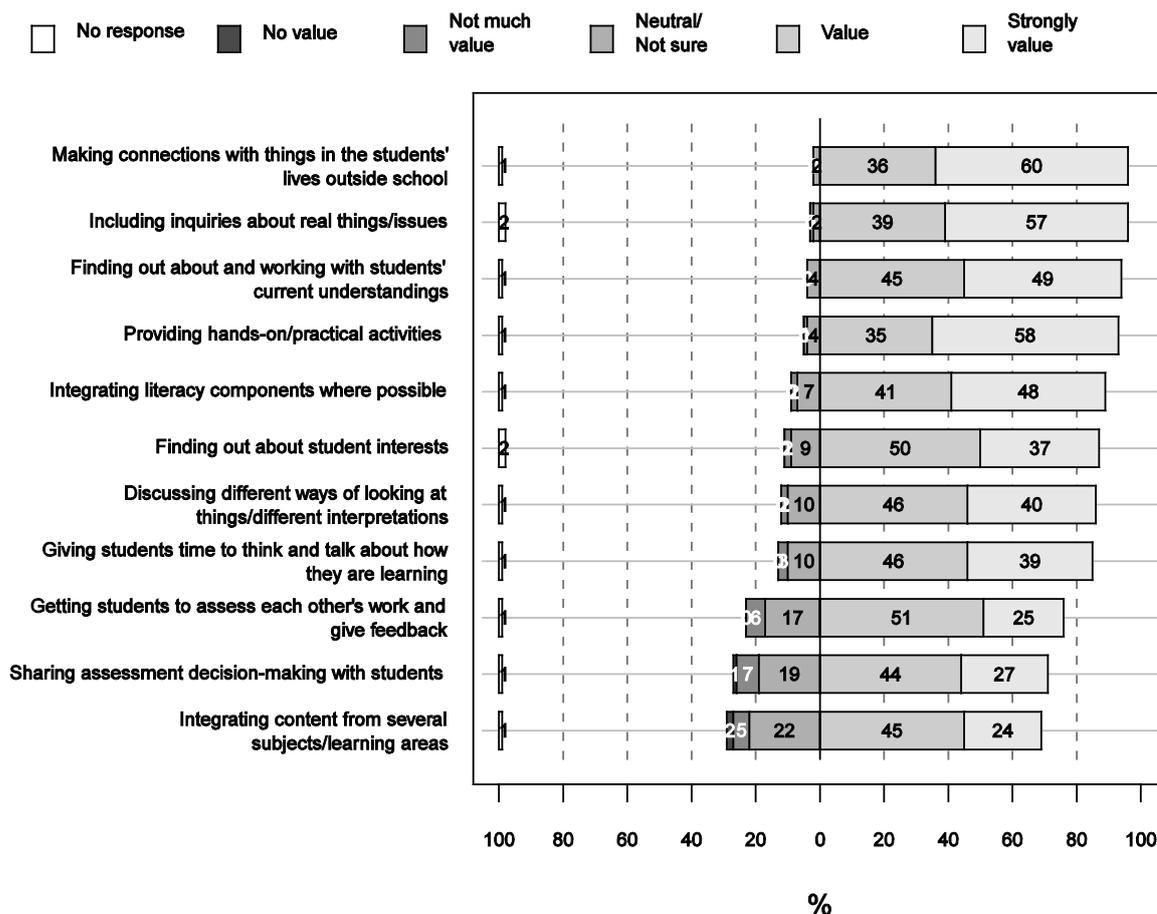
Figure 5 shows that most of the described learning experiences are indeed highly valued by many secondary teachers. Links between school learning and life outside school (the two top-ranked items) were valued by almost all the teachers. Even the bottom-ranked items were valued by between two-thirds and three-quarters of respondents.

The ranking order is interesting. Arguably the highly valued learning experiences at the top of Figure 5 could have cued at least some of the teachers to think they "already do that" without necessarily recognising the potential for making transformative links to the newer features of NZC. Increased levels of uncertainty around the nontraditional learning-to-learn items could support such an interpretation. What the lower ranked items have in common is a shift to greater

power sharing as students are drawn into making learning, and specifically assessment, decisions. About a fifth of the teachers were unsure whether they valued such practices and a few were quite clear that they did not.

As we might predict, given the snapshot that emerged in Section 3, mathematics and science teachers were less likely than their peers to say they strongly valued almost all of these practices. The only exception was hands-on practical work. Around half the teachers in most subject groupings, including mathematics and science teachers, said they strongly valued this. Indeed this has long been seen as a means of engaging students in their learning. Teachers of health, PE, technology, transition, careers, and special education placed an even higher value on practical learning; 80 percent of this group of teachers said they strongly valued practical learning.

Mathematics and science teachers reacted particularly strongly to the possibility of sharing assessment decision making with students. Whereas between 28–39 percent of the other teacher groups said they strongly valued this, just 12 percent of science and mathematics teachers did so. They were more likely to choose neutral/uncertain (30 percent of them compared to 13–16 percent of teachers in other subject groupings) which suggests that the intent of this practice is perhaps unclear to some of them as yet. This pattern resonates with findings from the Competent Learners project when students were aged 16. Compared with all other subjects, mathematics and sciences were more likely to be rated by the students as their least favourite subjects and there were indications, from both the students and their teachers, that the types of learning experiences discussed in this section were less likely to happen in those least favourite classes (Wylie et al., 2008).

There were no decile-related differences, or differences related to length of teaching or role in the school.

Did teachers interpret the suggested learning experiences in ways that link to the intent of NZC?

Given the links described at the start of this section, the high value that many teachers place on the practices described in Figure 5 suggests that *in principle* NZC's directions should be appealing to teachers. Widespread levels of approval for the curriculum suggest that this is indeed so (see, for example, Cowie et al., 2009). However, we cannot assume that teachers do actually make these links to NZC's new directions for themselves and some patterns in the data suggest they may not.

For example, Figure 5 shows that almost all the teachers (96 percent) agreed that making connections with students' lives outside school was a learning experience they valued or strongly valued. Yet fewer of them (70 percent) said that they thought curriculum implementation would entail making greater use of authentic contexts (Figure 3). It could be that some teachers interpreted the "making connections" item as being about using passing references as these

cropped up serendipitously, rather than planning to deliberately locate learning in authentic contexts.

Similarly, most teachers (94 percent) agreed that they value or strongly value finding out about and working with students' current understandings, which implies at least some flexibility with curriculum content and pacing, and a degree of active student involvement in assessment (which 71 percent valued or strongly valued). Yet Figure 3 shows that just 53 percent thought that implementing the curriculum would entail giving students a voice in curriculum planning. Again, it is entirely possible that the teachers did not connect finding out about and working with students' current understandings with the idea of "student voice". Some teachers could be interpreting greater involvement of students in decision making about learning as an abdication of their discipline-specific expertise, rather than as opportunities for co-construction of learning where they use their own expertise in new ways.

Associations between learning experiences and "student voice"

A set of statements related to teachers' professional learning afforded an opportunity to further explore teacher thinking about students' active involvement in learning. One item in this bank said *there is too much emphasis on "student voice" and similar ideas nowadays*. A quarter of the teachers agreed or strongly agreed with this statement, a third were unsure and just over a third disagreed or strongly disagreed (see Section 7).

Cross-tabulations revealed that teachers who strongly *disagreed* that there is too much emphasis on student voice were also more likely than the other teachers to strongly value every one of the learning experiences in Figure 5 except the provision of hands-on/practical work. In other words, placing a high value on learning experiences that potentially provide more space for students' active involvement in determining learning directions is associated with recognition of the importance of including an element of student voice in the classroom. By contrast, teachers who said they merely valued these experiences (i.e., a less emphatic response) were more likely to be unsure about the idea of student voice, or to agree that there is too much emphasis on this. Illustrating this potential contradiction, half of all the teachers who said they valued making connections with things in students' lives outside school nevertheless also agreed or strongly agreed that there is too much emphasis on student voice.

The introduction to this section briefly outlined the new possibilities that elements such as key competencies and learning-to-learn might bring to conventional classroom experiences. The pattern of associations described for the "student voice" responses supports the argument that many secondary teachers have not yet made connections between learning experiences they already value and new directions signalled by NZC. Specifically, they may not see the potential for "student voice" in a range of learning experiences they say they value, particularly if they do not appreciate the meta-level conversations students need to engage in—acts of meaning making are now an explicit focus for learning, not just something that happens or does not.

Associations between learning experiences and student engagement

One question in the teacher survey asked for a response to the statement: *Today's students are much harder to engage than secondary students were five years ago.* Views on this were divided: strongly agree, 18 percent; agree, 33 percent; neutral/not sure, 21 percent; disagree, 22 percent; and strongly disagree, 3 percent. Teachers who strongly disagreed with this statement (i.e., they see no difference in engagement levels in recent years) were more likely to say they strongly valued giving students opportunities to discuss different ways of looking at things and having them assess each other's work and give feedback. An implication we might draw is that students find these sorts of highly interactive learning experiences engaging when teachers do offer them.

A key competencies factor

There was a strong association between responses to the individual items discussed in this section. We called this factor *key competencies* to highlight the reasons for the selection of items (α=0.85). Those who valued any of the learning experiences described tended to value many of them. Those who were less inclined to value such learning experiences tended to value few or none of them.

Associations with morale and work fulfilment

As for the two curriculum implementation factors, there was an association between the *key competencies* factor and teacher morale. The higher teachers' self-reported morale, the more likely they were to strongly value the described learning experiences.

Teachers who agreed overall that the various learning experiences listed are valuable were more likely to identify a mix of the following as main achievements in the last three years: improved *student achievement; improved student behaviour*; beginning implementation of NZC; better meeting the learning needs of a group of students; implementing an innovative programme; *improved teaching programme*; achieving a positive or improved learning environment; improved student assessment for learning; use of new pedagogies/teaching approaches; increased student engagement levels in class; and an increase in their own knowledge and skills. These achievements are the same as those listed for NZC *implementation* factor discussed in Section 3, with the addition of the three items in italics.

Again, we see indications of a positive spiral of achievement and success: the first two items in italics could well indicate positive payoffs in terms of improved achievement and behaviour in class when teachers enhance their pedagogy along the lines advocated in NZC.

First indications of differing understandings and valuing of "student voice"

This section has reported that teachers do indeed value a wide range of learning experiences that are potentially congruent with new directions signalled by NZC features; for example, the key

competencies and the learning-to-learn principle. However, the learning experiences about which some teachers had reservations had in common an element of "student voice" in their descriptions. This was particularly apparent for items that suggested the possibility of making assessment activities an opportunity for learning via greater student involvement in decision making. What are the implications of this pattern?

In 2009, MOE released a high-level policy discussion document titled *Directions for Assessment in New Zealand* (shorthanded as DANZ). Drawing from the results of an extensive meta-synthesis (Hattie, 2009) the advice presented to MOE pinpointed greater student involvement in making informed decisions about their learning progress (via the appropriate use of assessment feedback) as the type of change most likely to lift achievement across the board (Absolum, Flickton, Hattie, Hipkins & Reid, 2009). DANZ recommends that the whole education system should focus on enhancing "assessment literacy"—for students, teachers, parents and all those in the tertiary sector who support the work of schools. Arguably the focus on appropriate (i.e., valid and reliable) assessment procedures, and the learning-focused interpretation and use of results, mainly cues professional learning in the areas of knowledge and skills. What the findings of this section highlight is the importance of the values that teachers hold and these are likely to be linked to deep-seated beliefs about their roles and responsibilities.

The indications of differences in values that we see for some mathematics and science teachers should be carefully considered in this light. It would be easy to "label" these teachers as out of step with directions signalled by NZC innovations such as key competencies but this would be unhelpful and likely do many dedicated teachers a disservice. Burgeoning research in both science and mathematics education suggests there are strong philosophical drivers for the values that teachers of these subjects hold, and that these are related to the nature of the subjects they teach, and the *purposes* they perceive for teaching them.[7] The importance of making space for exploring the tacitly held deep drivers of teachers' work is highlighted here. The tensions in values discussed in this section are doubtless an important underlying reason for the identification of making space to explore teachers' beliefs as a key feature of effective professional learning programmes (Timperley et al., 2007).

Transforming deeply held beliefs and values is unsettling and hard personal/professional work. The challenges cannot be underestimated. The links to teacher morale reported in this section could be important here. Awareness of seeming out of step, and not really appreciating why this

---

[7] NZCER has recently completed a policy discussion document that draws on science education research to identify four main purposes for science education: preparing students for a career in science; equipping students with practical knowledge of how things work; building students' science literacy for informed participation in science-related issues and debates; and developing students' skills in scientific thinking and their knowledge of science as part of their intellectual enculturation (Bull, Gilbert, Barwick, Hipkins, & Baker, 2010). These four purposes are potentially in conflict with each other yet elements of all of them are apparent in NZC and the framework does not clarify their relationship to each other, or to the years of schooling. In the absence of such guidance we should not be surprised that many science teachers continue to privilege the purpose that seemingly dominated their own education—coverage of a specified body of content, with a tacit focus on preparing selected students for a career in science.

might be so, is no doubt demoralising. So is feeling one's work is not valued, especially in a context of working very hard in the face of continuous change. This section contains potentially fruitful indications that teachers who have seen the deeper implications of NZC's new directions are enjoying their work and experiencing greater success in engaging their students. This could be the "carrot" for other teachers to follow suit, but only if they experience professional learning opportunities that do go to the heart of the challenges they face when rethinking their work.

6. The enacted curriculum in 2009

Teachers were asked to think about *how often your students are able to do* the learning opportunities discussed in the previous section. They responded to a 4-point Likert scale (most of the time, quite often, sometimes, never/almost never).

Some items were reworded to focus on what the students would experience. For example, the teacher action *finding out about and working with students' current understandings* became the student experience *explore and challenge their current understandings*. In this way the possibility was reduced that teachers would interpret items as being limited to their own actions and choices, with the potential for "we already do that" responses as discussed in Section 4. Now the focus was drawn more directly to student participation. Figure 6 on the next page shows the results.

The top ranking items in Figure 5 remain so in Figure 6. Almost all teachers said they valued making connections with things in students' lives outside school, but 26 percent now said that students make these connections only "sometimes" (72 percent said this happened quite often or most of the time). The activity most likely to happen most of the time was taking part in hands-on practical activities (providing hands-on practical activities in the previous item set). Again, the combined quite often/most of the time response was 72 percent. This item thus has a top equal ranking with making connections to things in students' lives. These two types of experiences are arguably staples of competent, engaging traditional teaching. They need not imply dimensions of key competency development, although as we saw in Section 4 the potential is there. At the very least, this is a good foundation for further teacher learning and pedagogical innovation.

Integrate literacy components where possible moved up from fifth ranking for value to be third ranked for likely frequency of occurrence (67 percent quite often/most of time). Just 2 percent of respondents said this never or almost never happened for their students. Considerable professional learning resources have been directed to programmes designed to strengthen pedagogies for literacy and literacy-across-the-curriculum. Section 7 shows teacher learning in this area has had an impact and we see that impact reflected by the relatively high frequency of occurrence.

Finding out about and working with students' current understandings was third ranked for valuing. Again this could be seen as a traditional teacher responsibility: they are likely to be formatively checking whether students have gained the specific understandings they intended (e.g. whether students have understood a science concept in the same way that a scientist would). However, the opportunity for students to explore and challenge *their* current understandings was estimated to happen quite often by less than half the teachers (41 percent) and most of the time by just 19 percent. Here the focus of learning conversations could be seen to extend beyond intended (correct) understandings to encompass a more deliberate consideration of students' alternative

conceptions and ideas. Where teachers hold transmissive views of learning they might see this wider focus as potentially confusing for students, and therefore to be avoided.

Figure 6 **Teachers' estimates of how often students experience specific types of learning opportunities (n=870)**
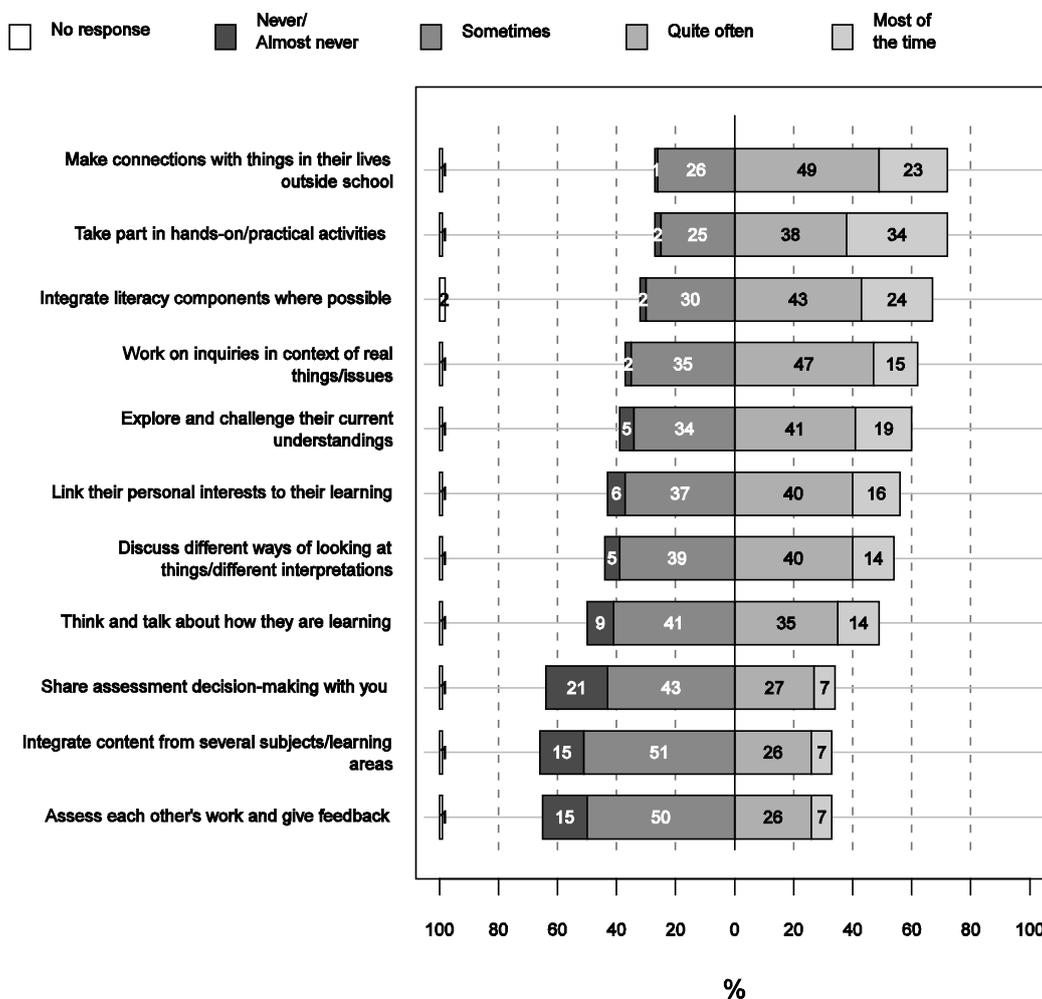
With some minor changes of relative position, the bottom ranked items for teacher valuing remain the bottom ranked for estimated frequency of occurrence. Just 7 percent of teachers said that their students shared assessment decision making with them most of the time, or assessed each other's work and gave feedback, or had opportunities to integrate learning from several subjects or learning areas. Thus the teacher practices that would afford such opportunities to students appear to happen on a regular basis in only a small number of cases.

Differences in learning opportunities by subject area

There were a number of indications that students may experience different learning opportunities in different subjects. Teachers of English or languages were more likely than teachers of other

subjects to say their students had opportunities to do the following most of the time: integrate literacy components where possible; think and talk about how they are learning; assess each other's work and give feedback; and integrate content from several subjects. Teachers of English, together with teachers of social sciences, arts and commerce subjects were more likely to say their students had opportunities most of the time to: discuss different ways of looking at things/different interpretations; explore and challenge their current understandings; link their personal interests to their learning; and work on inquires about real issues.

Congruent with the high value they placed on practical work, teachers of health, PE, technology, transition, careers and special education were more likely than other teachers to say their students took part in hands-on/practical activities (60 percent of this group said this happened most of the time).

Teachers of mathematics and the sciences were the *least* likely to say their students could *very often* take part in many of the listed experiences. For example, in mathematics or science students were less likely to very often: take part in inquiries about real issues (9 percent of maths/science teachers compared to 18–19 percent of English and social sciences and arts teachers); make connections with things in their lives outside school (13 percent compared to 28–30 percent of English and social sciences and arts teachers); and discuss different ways of looking at things/different interpretations (6 percent compared to 21–22 percent of English and social sciences and arts teachers).

Some mathematics and science teachers gave strong negative responses to items connected with assessment. More than a third (37 percent) said their students never or almost never shared in assessment decision making, compared to 13–16 percent of all other teachers. More than a quarter said students never or almost never assessed each other's work and gave feedback (27 percent compared to 7–13 percent of teachers of other subjects). A similar pattern was found for allowing students opportunities to link their personal interests to their learning. Eleven percent of mathematics and science teachers said their students never or almost never did this compared to 2–5 percent of teachers of other subjects.

Other associations

Teachers who were faculty leaders or specialist classroom teachers were the most likely to say their students had hands-on/practical learning experiences most of the time.

Teachers in deciles 9 or 10 schools were more likely to say students had opportunities to explore and challenge their current understandings most of the time. Teachers in mid-decile schools were less likely than those in either high- or low-decile schools to say their students had opportunities to work on inquiries about real issues most of the time.

Teachers who disagreed that today's students are harder to engage were more likely to say their students could at least quite often: work on inquiries about real issues; think and talk about how they are learning; and assess each other's work and give feedback.

Comparing teacher valuing of learning experiences and students' learning opportunities

A comparison of Figures 5 and 6 shows a much lower frequency of occurrence than the value teachers attach to the described learning experiences would suggest. The next table summarises the frequency differences between Figures 5 and 6, ranked by the size of the difference, beginning with a substantial 43 percent difference between teachers' reported valuing of student involvement in self- and peer assessment and its likelihood of being experienced by students quite often or most of the time. Even hands-on practical work appears to happen considerably less often than its valuing suggests should be the case.

Table 10 **Differences between responses to matched items (Figures 5 and 6)**

Item	Teacher responses % (n=870)		
	Value or strongly value	Do most of time or quite often	Difference
Getting students to assess each other's work and give feedback	76	33	43
Sharing assessment decision making with students	71	34	37
Giving students time to think and talk about how they are learning	85	49	36
Integrating content from several subjects/learning areas	69	33	36
Including inquiries about real things/issues	96	62	34
Finding out about and working with students' current understandings	94	60	34
Discussing different ways of looking at things/different interpretations	86	54	32
Finding out about student interests	87	56	31
Making connections with things in students' lives outside school	96	72	24
Integrating literacy components where possible	89	67	22
Providing hands-on/practical activities	93	72	21

The introduction to this section noted that the refocused wording of the items might have drawn attention to the student-centred intent of the learning experiences listed. Whereas teachers might have been thinking mainly about what *they* did when they responded to the values question, rewording of the opportunities question directed them to think about what *students* did. If teachers value student input to learning mainly under conditions over which they keep full control (e.g., they question students about their interests and then decide whether to make further reference to these) then we might expect to find some differences as shown in the table above. If this reasoning is correct then teachers' beliefs about the element of "student voice" in the described

experiences could underpin the differences. Another question in the survey afforded an opportunity to seek evidence to check this interpretation.

Associations with "student voice"

The statement that *there is too much emphasis on student voice or similar ideas nowadays* was cross-tabulated against teachers' estimations of how often students took part in the described learning experiences. The pattern was very similar to the one found for the value that teachers placed on these experiences (see Section 4).

Teachers who *strongly disagreed* that there is too much emphasis on student voice were also more likely than other teachers to say that students could do the following most of the time or quite often: integrate literacy components (79 percent of this group); work on inquiries about real issues (78 percent); explore and challenge their current understandings (77 percent); make connections with things in their lives outside school (75 percent); discuss different ways of looking at things/different interpretations (72 percent); link their personal interests to their learning (68 percent); and think and talk about how they are learning (65 percent). Again, we see an association between providing more opportunities for students' active involvement in determining learning directions and support for including an element of student voice in the classroom. Teachers who strongly support the idea of student voice do appear to be "walking the talk".

Not surprisingly, there was also a strong association between agreement that there is too much emphasis on student voice and almost never or never having students assess each other's work and give feedback. This particular type of activity was further explored in relation to NZC focus on learning-to-learn and this is the theme discussed next.

Making changes that support *learning to learn*

Another item set in the survey sought more detail about how often practices related to learning-to-learn occurred in teachers' classes. The question asked: *How are students in your classes involved in taking responsibility for their learning? Please say how often you think the majority of your students have these experiences in your classes.* Teachers responded via the same 4-point scale used for learning experiences (most of the time, quite often, sometimes, never/almost never).

Figure 7 lists a range of learning experiences that could be seen as having learning-to-learn components and presents a snapshot of teachers' perceptions of students' opportunities to do these things. The pattern revealed by these responses might have been predicted by the value/practice gap discussed above. While teachers might think greater student involvement in certain assessment activities is a good idea in principle (Figure 5) in practice many of the learning experiences described in Figure 7 were not happening very often in 2009.

Figure 7 Teachers' estimation of students' "learning-to-learn" experiences (n=870)

Legend: No response | Never/Almost never | Sometimes | Quite often | Most of the time

Experience	No response	Never/Almost never	Sometimes	Quite often	Most of the time
Students carry out independent inquiry assignments	3	17	41	31	8
Students are involved in individual goal setting	2	11	48	27	11
Students have opportunities to critique examples of actual work of a range of quality	3	27	38	23	8
Students take part in peer tutoring	3	19	50	25	4
Students peer review each other's work	2	20	48	26	3
Students identify their own learning needs, e.g. learning logs	2	34	41	19	4
Students are involved in collaborative goal setting	2	28	47	18	5
Students are involved with setting of topics/context to be taught	3	48	36	11	3
Students take part in electronic learning conversations/blogs or etc. (e.g., using Moodle)	3	60	25	10	2
Students involved with setting of expected outcomes/standards	3	45	39	10	2
Students co-create own NCEA plan with you	6	64	20	7	3
Students involved with setting of assessment tasks	3	66	26	4	

%

It should be noted that some of these experiences, by their very nature, are likely to be episodic. While students might hope to talk about their learning and meaning making on a daily basis, they would likely become exasperated if they were required to set individual goals for every lesson, or if they were mainly required to work on independent inquiry assignments. With this caveat in mind, the two top-ranked learning-to-learn experiences are reported here by whether they happen at least sometimes: involvement in individual goal setting (86 percent sometimes or more often); and carrying out independent inquiry assignments (80 percent, sometimes or more often). It seems that many students do have these types of *individual* learning experiences at least some of the time. Setting personal goals and working on individual inquiries are relatively traditional pedagogical approaches that appear to have resonated with key NZC messages for many teachers. For example, the key competency *managing self* is often linked to goal setting. "Self-monitoring" is explicitly mentioned in the *School Curriculum Design and Review* section of NZC as something that students should develop strategies for. Goal setting is an obvious first step in doing this. Self-management is also an evident component of completing an independent inquiry, and

this type of activity is often used as a vehicle for integrating several subjects via rich inquiry topics (Cowie et al., 2009).

When we consider experiences that we might expect students to have more regularly if their teachers had key competency development in mind it is evident that there is still some way to go with implementation of this aspect of NZC. Section 4 noted that competencies are likely to be strengthened when learning includes metacognitive dimensions. For example, opportunities for students to reflect on their own thinking and learning might come via the regular keeping of learning logs, but just 23 percent of the teachers said this happened quite often or often. Some teachers are using e-learning affordances such as blogs or interactive programs like Moodle to support shared learning conversations and these need not be restricted to real time during the school day. However, just 12 percent of the teachers said their students would have such experiences often or most of the time and 60 percent said this would happen never or almost never. Peer tutoring and peer reviewing of work are somewhat more common (29 percent of teachers said these happen quite often or most of the time). However, these are evidently not yet commonly experienced by many students. Again, the lowest ranked items all related to student involvement in assessment.

Associations with subjects taught

Teachers from across the subject range variously said their students almost never or never did the things described but the consistent pattern is that more of the mathematics and science teachers said this than teachers from any other subject grouping. Mathematics and science teachers were more likely than teachers of any other subjects to say they never or almost never involved students in:

- setting of assessment tasks (84 percent maths/science cf. 54–64 percent of all others)
- setting of contexts/topics to be taught (79 percent maths/science cf. 33–36 percent all others)
- co-creating an NCEA plan (76 percent maths/science cf. 54–63 percent all others)
- setting of expected outcomes/standards (67 percent maths/science cf. 34–40 percent all others)
- collaborative goal setting (48 percent maths/science cf. 17–23 percent all others)
- critiquing examples of actual work of a range of quality (46 percent maths/science cf. 12–29 percent all others)
- identifying their own learning needs (45 percent maths/science cf. 27–34 percent all others)
- peer reviewing of each other's work (32 percent maths/science cf. 12–17 percent all others)
- carrying out independent inquiry assignments (28 percent maths/science cf. 10–16 percent all others)
- individually setting goals (20 percent maths/science cf. 5–11 percent all others).

The differences listed here cover all but two of the items in the learning-to-learn set. No subject-related differences were found for e-learning and peer tutoring. Interestingly, the frequency gap was widest for setting of contexts/topics to be taught, with just 21 percent of mathematics and science teachers doing this at least sometimes, compared to 64–67 percent of other teachers. This

supports the suggestion made in Section 5 that many mathematics and science teachers see coverage of specified content as a main purpose for their teaching.

Changes over time

In the 2006 secondary survey some items shown in Figure 7 were included as a yes/no tick box set under the heading "students taking responsibility for their learning". The change of format to Likert scales means caution is needed when comparing responses between 2006 and 2009. The next table does this by adding all the 2009 responses that indicated at least some use of a learning-to-learn strategy. The assumption here is that 2006 teachers who ticked the box would have selected the "sometimes" category at the very least (and may well have selected "quite often" or "most of the time" but we cannot know this). With these caveats, the next table does show quite marked increases in the use of these strategies over time, though as Figure 7 clearly shows, most of these learning-to-learn experiences happen sometimes at best and are not yet in regular use.

Table 11 **Comparison of 2006 and 2009 teacher responses to matched items**

How students are involved in taking responsibility for their own learning	2006 (n=818) yes %	2009 (n=870) sometimes or more %
Students involved in individual goal setting	63	86
Students peer review each other's work	47	77
Students involved with setting expected outcomes/standards	19	42
Students identify their own learning needs	31	64
Students involved with setting topics/context to be taught	21	50
Students involved with setting assessment tasks	8	33

Relationships between learning to learn and beliefs about student voice

Recall that a quarter of the teachers believed there is too much emphasis on student voice nowadays. The learning-to-learn actions described above require a high degree of interaction between a teacher and their students so we might predict a close relationship between responses to the learning-to-learn items and an individual's attitude to student voice.

Congruent with the patterns already reported, teachers who did *not* think there is too much emphasis on student voice were more likely to have students set goals *collaboratively*. There was, however, no equivalent association between *individual* goal setting and beliefs about student voice. Teachers who strongly agreed there is too much emphasis on student voice were just as likely to have students set individual goals as those who strongly disagreed. Thus it did not appear

that teachers associated individual goal setting with whatever it is they *don't* value about the idea of student voice.

Teachers who are more supportive of the idea of student voice were also more likely to have students act as peer *reviewers.* What collaborative goal setting and peer reviewing have in common is a shift in the manner in which teachers use their expertise. Student voice is enlisted to support explicit discussion about acts of learning and the challenges inherent in those—that is, learning-to-learn conversations.

Teachers who agreed or strongly agreed that there is too much emphasis on student voice were more likely than other teachers to say students never or almost never took part in setting: topics or contexts to be taught; assessment tasks; and assessment outcomes/standards. Nor were their students as likely as those of other teachers to have opportunities to critique actual examples of work of a range of quality. It seems that teachers who are opposed to the idea of student voice do associate the pedagogical changes it might entail with tasks that have traditionally been the province of their own expertise and judgement.

There was no clear pattern of association between the position taken on student voice and having students: identify their own learning needs; work on independent inquiry projects; take part in e-learning conversations; take part in peer tutoring; or co-create an NCEA plan. With the exception of NCEA and e-learning items, these are relatively traditional learning activities, albeit with a high level of interaction possible in most cases. Thus teachers who think there is too much emphasis on student voice are no more or less likely than those who support the idea of student voice to use these more traditional types of learning-to-learn activities at least some of the time. This again supports the suggestion that some teachers do not recognise the potential for a student voice component in interactive learning activities such as those listed here. Helping teachers to refocus familiar learning activities to include explicit learning-to-learn dimensions might be a productive way to build bridges between traditional practice and the new directions signalled by NZC.

Student experiences and learning-to-learn factors

There was high consistency between a teacher's responses to the individual items in the learning experiences item set (s*tudent experiences,* α=0.86). There was also high consistency between each individual's responses to the learning-to-learn item set (*learning to learn*, α=0.83). As the next table shows, there were moderately strong correlations between the three factors that directly related to teachers' perceptions of students' learning experiences in their classes.

Table 12 **Teacher correlations (r) between classroom learning factors**

	Key competencies	Student experiences
Learning to learn	0.45	0.66
Key competencies		0.51

The correlation is strongest between *student experiences* and *learning to learn* (r=0.66) suggesting that similar influences on teachers' thinking underpinned their responses to both item sets discussed in this section of the report. Teachers who already offer learning experiences with the potential to strengthen key competencies are also more likely to already use teaching approaches that include learning-to-learn dimensions. There is also a moderately strong association between *key competencies* and *student experiences* (r=0.51), and *key competencies* and *learning to learn* (r=0.45). This pattern suggests that valuing the types of learning experiences that could strengthen students' key competencies makes it more likely that teachers will offer such experiences and will use learning-to-learn approaches as part of their teaching. The slightly weaker associations could mean that some teachers who value the types of teaching and learning described in both item sets have nevertheless yet to offer such experiences regularly.

There was no significant association between the *learning-to-learn* and *student experiences* factors and the decile of a teacher's school. However, the higher the percentage of Māori students on the roll, the less likely teachers were to be strongly supportive of the *student experiences* factor.

Associations with morale/main achievements

Teachers reporting high morale were more likely to give an overall high rating to the *student experiences* factor. Interestingly, this association did not hold for the *learning-to-learn* factor, so some different influences may be in play here.

Associations between the *student experiences* factor and *learning-to-learn* factor and main achievements as a teacher were very similar to those already reported for *NZC implementation* and *key competencies* factors (see Sections 4 and 5). Table 13 on the next page summarises the overall pattern of associations for the four *NZC implementation* factors. One interesting new association shown here is between actually offering the sorts of learning experiences that could strengthen students' key competencies and feeling able to involve parents in the learning programme.

The overall pattern of associations gives clear indications that teachers who have been making the sorts of changes aligned with NZC's directions are already seeing positive returns for their investment of time and effort. In addition to the sense of achievement they gain personally, they perceive that their students are benefiting from more engaging learning and increases in achievement levels.

Table 13 **Summary of associations between four teacher factors and main achievements as a teacher (n=870)**

Main achievements in last three years	NZC changes	Key competencies	Student experiences	Learning to learn
Begun implementation of NZC	✓	✓	✓	✓
Positive/improved learning environment	✓	✓	✓	✓
Used new pedagogical approaches/teaching practices	✓	✓	✓	✓
Increased student engagement level in my classes	✓	✓	✓	✓
Implementation of an innovative programme	✓	✓	✓	✓
Better meeting needs of a particular group of students	✓	✓	✓	
Improved student assessment for learning	✓	✓	✓	
Improved student achievement		✓	✓	✓
Improved teaching programme		✓	✓	✓
Increased my own knowledge/skills	✓	✓		
Improved student behaviour		✓		
Parents more involved in learning			✓	

Are discipline issues a barrier to pedagogical change?

One question asked teachers to indicate how often they experienced student behaviour that caused serious disruption to their teaching: often; sometimes; or rarely/never. Just 16 percent of teachers said these behaviours often happened, 45 percent said they happened sometimes and 37 percent said they happened rarely or never.

Teachers who said they often experienced serious disruption to their teaching because of student behaviour were less likely than all other teachers to say that there were consistent school-wide approaches to discipline, and that they could get timely support for problems with student behaviour or with their teaching. They were also less likely to think there was support for taking risks in their teaching. As the next table shows, responses to this item also showed associations with three of the teacher factors discussed so far. Taken together, these associations point toward being in control in the classroom as one enabler of pedagogical innovation.

Table 14 **Associations between teacher factors and experiences of disruptions to teaching (n=870)**

Factor	Nature of association
NZC-related changes	Rating low on this factor was associated with often experiencing disruption.
Key competencies	Rating high on this factor was associated with rarely or never experiencing disruption.
Student experiences	Rating high on this factor was associated with rarely or never experiencing disruption.

Teachers who said they often experienced serious disruption to their teaching were relatively more likely be in deciles 1 or 2 schools and less likely to be in deciles 9 or 10 schools. One-third of all the teachers who said they experienced serious disruption to their classes were mathematics or science teachers, who made up only 16 percent of the teachers responding.

We cross-tabulated the responses to the disruption question with indications of a collaborative learning climate in the school (see Section 7). Teachers who said that their classes were often seriously disrupted by poor student behaviour were *less* likely than their peers to say that sharing of the following was very good/generally happens: assessment resources; knowledge of individual students; teaching ideas; ideas for helping students improve their achievement; setting of useful achievement targets; analysis of student achievement to guide teaching and learning; and discussion of assessment results to help students improve. They were also more likely to rate the sharing of lesson planning as poor or very poor/nonexistent. There is a strong sense here that this small group of teachers are isolated from traditional types of sharing and also from collaborative inquiry into teaching and learning. Whether the student behavioural issues they must often cope with are cause or symptom of their relative professional isolation is a moot point. Either way this relative isolation could be a barrier to curriculum change for this small group of teachers.

Supporting teacher learning for curriculum change

The findings in this section resonate with other research that has reported teachers' reluctance to share decision-making power with students when it comes to matters of assessment of learning. Involving students in setting assessment tasks has been lowest ranked of various pedagogical innovations investigated in other NZCER research projects. These include *Shifting Balances* which explored the early implications of NCEA for teaching (see, for example, Hipkins & Neill, 2006) and adoption of new Computer Algebraic Systems (CAS) in junior secondary mathematics classrooms (Neill & Maguire, 2006). The teachers who took part in *Shifting Balances* were adamant that assessment was their responsibility, especially when it was NCEA-related and therefore high stakes for both them and the students (Hipkins & Neill, 2006).

Assuming that similar views have influenced teachers' responses to the types of pedagogical changes explored in this section, it is likely that professional learning focused on developing

strong links between traditional formative assessment activities and NZC-related changes such as making greater use of "student voice" and adding a learning-to-learn focus to lessons might help teachers rethink the ways in which they use their expertise to support students to take more responsibility for their own learning. There are indications in this section that some teachers are already seeing positive pay-offs when their students enjoy variety and higher levels of participation in their learning experiences, and when they adopt learning-to-learn approaches.

What will it take to involve more teachers in the types of pedagogical changes that some of their peers have already made? A recent small project that involved talking with focus groups of both primary and secondary teachers (Joyce, Spiller et al., 2009) identified teacher *and student* beliefs about the *nature of learning* to be "fundamental" to: creating space for the adoption of self-assessment strategies; building a classroom culture where students are encouraged to take an active role in their own learning; and creating a "school-wide culture of self-assessment". However, a paper already published from the 2009 NZCER National Survey discusses evidence that fostering a school-wide culture of collective, collaborative learning is not common as yet, and seems to be a challenging change for secondary schools to achieve (Wylie, 2010). This theme is further explored in the next section.

7. Support for pedagogical change

Sections 5 and 6 focused on the curriculum thinking and actions of teachers as *individuals*. This section broadens the frame. The responses are still the thinking of individual teachers, but their responses are now located within the wider contexts of their work, including collaborative actions taken for curriculum implementation. The section begins with a discussion of collaborative professional inquiry, framed by the idea of "teaching as inquiry" presented in the *Effective Pedagogy* section of NZC. Individual inquiry is no doubt happening in many teachers' classrooms but the focus here is on the learning conditions that support teachers to undertake this professional work together. Research suggests that creating the conditions to distribute leadership of professional learning is one indicator of effective school leadership (Robinson, Hohepa, & Lloyd, 2009; Wylie, 2010). Questions asked of teachers about the principals' leadership are discussed in the latter parts of this section.

Teaching as collaborative inquiry

The NZC emphasis on aspects such as learning to learn, values and key competencies is supported by an *Effective Pedagogy* section where effectiveness is defined immediately under the main heading as "teacher actions promoting student learning" (Ministry of Education, 2007, p. 34). This section includes advice on approaches to assessment and introduces a model of "teaching as inquiry" (Ministry of Education, 2007, p. 35) that directs attention to the purposeful gathering of data about what and how well students are learning, in order to adjust teaching programmes to meet specific, identified learning needs and challenges.

Two-thirds of teachers said they had explored this NZC effective pedagogy section as a whole-staff, and almost half of them had done so in faculty teams (Section 2). Presumably discussion of the teaching-as-inquiry model formed part of this exploration. Research in "early adopter" schools revealed some initial confusion between teaching-as-inquiry and inquiry learning as a pedagogical approach for student-directed inquiry. Such confusion has been reported in ERO's national reports of NZC implementation, by the MECI project and by the CIES project (Schagen, in press). The CIES project reported, however, that once schools saw connections between the model presented in the curriculum and whole-school professional learning programmes such as the numeracy project or AtoL (Assess to Learn) they began to see how to give effect to this aspect of NZC in ways that aligned powerfully with these other programmes' ideas about best practice (Cowie et al., 2009).

Collegial inquiry into student achievement patterns

Teaching as inquiry, like many whole-school professional learning initiatives, focuses on relationships between assessment, curriculum and pedagogy. As well as adopting formative assessment and learning-to-learn strategies in the classroom, there is an emphasis on information sharing and collaborative inquiry as teachers build new professional understandings together. Teachers were asked to describe the quality of five aspects of school culture, using the 5-point Likert scale shown in the next figure. The results suggest that these collegial inquiry activities were not yet a regular part of the working lives of more than half the responding teachers.

Figure 8 **Extent to which achievement-focused conversations inform ongoing teaching and learning (n=870)**
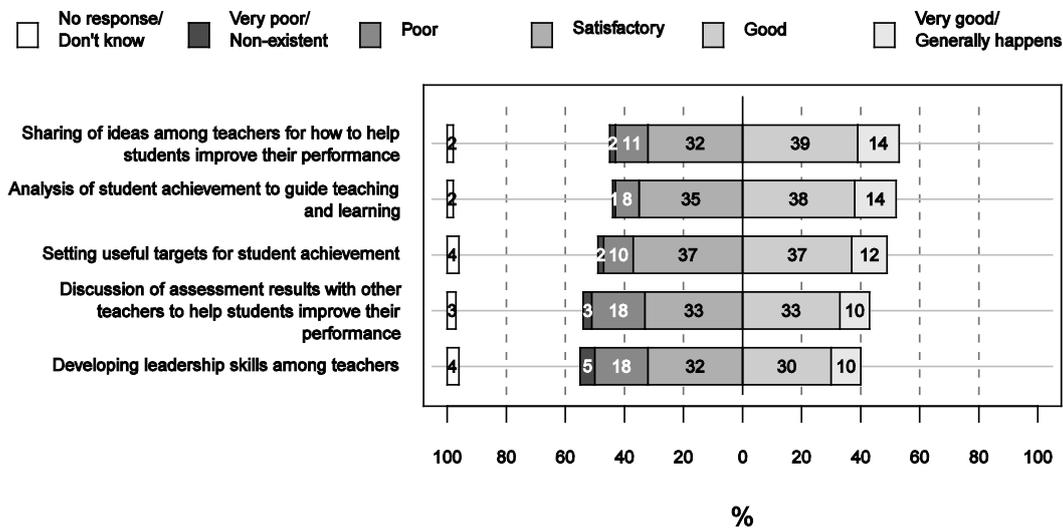
Teachers in mid-decile schools were less likely than their peers to say that setting of useful targets for student achievement was very good/generally happened in their school. Teachers in deciles 1 or 2 schools, and early career teachers were more likely to say that sharing ideas for how to help students improve their performance was very good/generally happened, and that teachers discussed assessment results to help students improve their performance.

Collaboration for sharing of ideas and resources

Whereas Figure 8 focuses on collegial sharing related to assessment and achievement, Figure 9 describes five more traditional aspects of teacher collegiality. Notice that the types of sharing described in the figure below tend to happen more often than those described above and frequencies for the *very good* rating are higher. Most teachers experience this sort of support and interaction, at the very least to a satisfactory degree.

Figure 9 **Extent to which teachers in the school co-operate and share (n=870)**
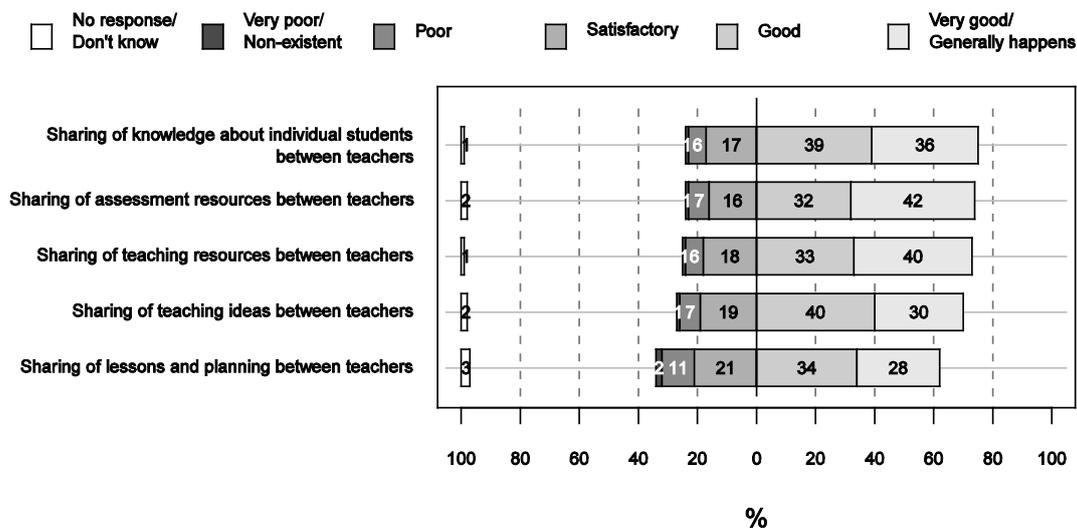
Teachers in deciles 1 or 2 schools were more likely than all other teachers to agree that sharing of lesson planning is very good/generally happens. Mathematics and science teachers were more likely than those of other subjects to say that sharing of assessment resources was very good/generally happens. Year 0–2 teachers were more likely to say sharing of knowledge about individual students was very good/generally happens.

Figures 8 and 9 indicate that sharing does happen in most schools, but it is more typically related to the traditional activities of teaching—sharing ideas, resources and lesson plans—rather than to sharing assessment information and exploring its meaning for ongoing learning, as outlined in the model of *Teaching as Inquiry* and also in the *School-wide assessment* advice in the *Design and Review* section of NZC (Ministry of Education, 2007, pp. 37–42).

As already noted in Section 6, teachers who said that their classes were often seriously disrupted by poor student behaviour were *less* likely than their peers to be sharing ideas and resources or taking part in collaborative inquiry into teaching and learning.

Factors for the two sets of responses

The items in Figure 8 formed a factor that we called *Achievement–focused sharing* (α=0.85). The items in Figure 9 formed a factor that we called *Teacher co-operation* (α=0.90). These alpha levels suggest that where these inquiry or sharing activities happen at all, it is likely that all or most of them happen. The *Achievement–focused sharing* and *Teacher co-operation* factors were moderately strongly associated (r=0.60) suggesting that they do tap into the same sets of collegial values despite their different foci, but also have some differences.

As we have seen for other factors, both *Achievement–focused sharing* and *Teacher co-operation* factors were associated with teacher morale. Teachers who rated both types of sharing as happening more often were also likely to report very good morale. Teachers who reported very

poor morale were likely to be in the lowest grouping for both co-operation and sharing of assessment and achievement ideas and decision making.

Teachers in the top grouping for both factors were more likely than other teachers to say their main achievements included beginning implementation of NZC; and having a positive/improved learning environment in their classes. Teachers in the top grouping for the *Achievement–focused sharing* factor were also more likely to identify implementation of an innovative programme as a main achievement. It seems that the teachers who are most actively involved in collegial professional inquiry are making links to NZC, making changes accordingly and reaping the benefits of doing so.

Leading professional learning in the school

Teachers were asked to *rate your agreement with the following statements about your principal,* using a 5-point Likert scale. The 17 items described attitudes and actions related to the principal's professional leadership of the school. Figure 10 on the next page shows the results.

The overall pattern suggests that many teachers hold their principal in high professional regard: 77 percent agreed that the principal promotes and models the values of the school; 76 percent agreed that their leader was a person of high integrity; 74 percent said the principal showed personal and professional respect for the staff.

There are also indications that many secondary principals are seen to be taking an active role in professional development alongside the teachers (70 percent) and that they are knowledgeable about teaching and learning (69 percent). There is, however, something of a drop in agreement that the principal leads useful discussions about the *improvement* of teaching and learning (59 percent). Nevertheless, this is an encouraging picture for supporting the types of school-wide professional inquiry discussed above.

Notice that the higher levels of uncertainty mainly relate to items where teachers were asked to make a judgement about what others might think (all the staff; different ethnic communities served by the school; the wider community) or about situations that might not have been part of their direct experience (conflict resolution; admitting personal mistakes). In these respects some teachers may have felt distanced from the principal's leadership work, or they may have simply felt they had no right to make a judgement.

Some teachers did disagree that the principal had the respect of all the staff (26 percent); that they resolved conflict quickly and fairly (20 percent). There was a strong correlation between an individual's responses to these items ($\alpha=0.97$) so the disagreement shown across the items is likely to have come from the same small number of individuals.

Figure 10 **Teachers' views of principal's professional leadership**
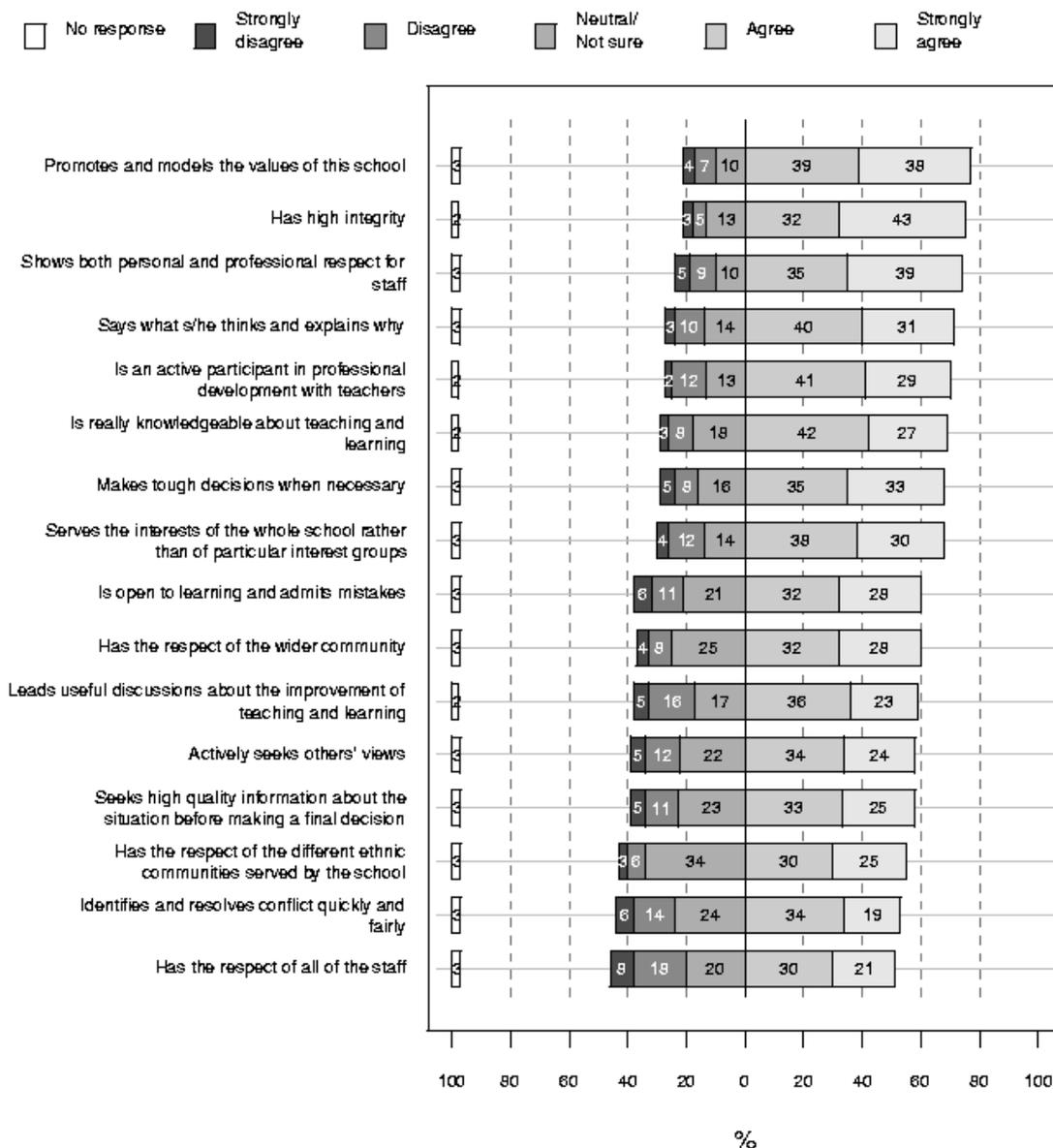
Teachers in deciles 1 or 2 schools were more likely to strongly agree that the principal leads useful discussions about the improvement of teaching and learning while those in deciles 9 or 10 schools were more likely to be unsure. There were no other decile-related differences for the individual items. Nor were there any positive associations between individual items and the subjects that teachers taught.

Mid-career teachers (3–10 years' experience) were *less* likely than other teachers to *strongly* agree that their principal: is really knowledgeable about teaching and learning; promotes and models the values of the school; has high integrity; and makes tough decisions when necessary. Teachers who were senior leaders (acting principal/deputy principal role) were more likely to strongly agree the

principal has integrity. Perhaps some leadership dimensions become more obvious when teachers are in a position to work more closely with the principal.

Associations with morale and professional engagement

Cross-tabulating teachers' morale with the *principal leadership* factor revealed the same pattern of associations as reported for the various curriculum-related factors in the earlier sections of the report. Teachers with very good morale were more likely to rate their principal's leadership very highly. Teachers with poor or very poor morale were likely to be at the "disagree" end of the continuum of responses to this collection of items (i.e., to hold their principal's leadership in relatively poor regard compared to their peers).

Associations between leadership and other factors

To what extent do teachers' perceptions of the quality of the principal's leadership impact on implementation of NZC? The next table shows associations between the *principal leadership* factor and all the other factors discussed so far. The table also compares the relative strength of these associations with associations between the other factors.

What we see along the top row of Table 15 are very weak associations between principal leadership and factors that relate to what individual teachers value and enact in their classrooms. By contrast there is a moderately strong association between principal leadership and *achievement-focused sharing.* This is of a similar strength to the associations between the three factors that capture individuals' curriculum thinking and values *(community input, NZC-related changes,* and *key competencies*). The only stronger associations are between the two factors that capture indications of actual classroom practice (*student experiences* and *learning to learn*) and between the two factors discussed in this section (*achievement-focused sharing* and *teacher co-operation).* Thus the principal's leadership of curriculum change appears to make its strongest impact at the level of shared professional learning.

Table 15 **Teacher correlations (r) between *principal leadership* and other factors**

	NZC changes	Comm input	Key comps	Student experience	Learning to learn	Achvmnt sharing	Teacher co-op
Principal leadership	.07	.08	.07	.06	.03	.51	.30
NZC changes	-	.55	.47	.22	.23	.11	.03
Community input		-	.53	.24	.27	.16	.06
Key competencies			-	.51	.45	.22	.12
Student experiences				-	.66	.23	.09
Learning to learn					-	.21	.07
Achievement - focused sharing						-	.60

As might be predicted, given the associations with individual items listed earlier in this section, a high rating for any of the factors discussed in this section (*teacher co-operation, achievement-focused sharing* and *principal leadership*) was associated with rarely or never experiencing disruption in a teacher's class. Additionally, a low rating on any one of these three factors was associated with a greater likelihood of saying support in the school for taking risks in teaching was poor or very poor. Yet the table above shows that the collegial sharing/leadership factors are only weakly correlated with teachers' curriculum values and what they do in their individual classrooms. The overall pattern suggests that being collegially networked in the school community is associated with strong and confident classroom practice, whatever specific shape that may take.

Collegial inquiry and sharing as a foundation for pedagogical change

This section provides evidence of the impact of principals' professional leadership on fostering a collegial learning climate in the school. It is less clear that teachers who are active participants in collegial inquiry are necessarily making changes in response to NZC. A direct relationship between professional leadership and NZC-related changes happening in teachers' classes is not yet evident. This might reflect the relatively early stage of NZC implementation when the survey was taken. Many teachers would still have been learning about the curriculum and relating it to their *current* practice. Earlier sections of the report have suggested that confronting the more transformative implications of NZC still lies ahead for many teachers, who might not yet have apprehended that changes in pedagogy will require more of them than improving on "business as usual". In this very demanding time of change, keeping collegial professional inquiry on track and ongoing would seem to be a vitally important part of the leader's role.

Given this challenge, it is concerning that many of the principals feel that other aspects of their role get in the way of devoting sufficient time to pedagogical leadership.[8] More encouragingly, it seems that many of them are willing to share the leadership of professional learning with their senior management team, who do support them (86 percent agreed that their senior leaders support them). A number of earlier sections have reported instances where teachers who are also senior leaders expressed views that were better aligned with NZC's new directions than those of some other teachers. This could be seen as one indication of leadership teams pulling together to lead curriculum change in the school. Other research has found that NZC implementation is assisted by distributing the leadership of the necessary professional learning (Cowie et al., 2009).

---

[8] Principals showed relatively high levels of agreement with statements relating to other aspects of the role that got in the way of providing pedagogical leadership: paperwork (77 percent); student welfare issues (71 percent); and financial and property management (67 percent). Sixty-eight percent of principals said they could not schedule enough time for the pedagogical leadership part of the role.

© NZCER

8. Curriculum-related professional learning

One finding from studies of curriculum implementation in "early adopter" schools is that learning about NZC can be enhanced when teachers are supported to build coherent links between their learning about the intent of NZC and other curriculum-related professional learning initiatives (Cowie et al., 2009). Some professional learning initiatives have focused on ways to generate the rich assessment information that would inform such conversations (EHSAS, AtoL).[9] The NZC focus on teaching as a *process of inquiry* (Ministry of Education, 2007, p. 35) also points to the importance of adopting approaches that generate rich formative assessment information. But do teachers see connections between their wider professional learning and the challenges of giving effect to NZC? This section documents teachers' opportunities to undertake a wide range of curriculum-related professional learning initiatives, and their perceptions of the impact that those opportunities have had on their thinking and on their practice.

The impact of professional learning teachers had undertaken

One question in the survey asked: *What has been your experience of the following professional learning/development initiatives, contexts or situations?* No time period was specified. Teachers were given a list of professional learning initiatives that included all the main MOE-funded programmes over the several years, not including their in-school work for NZC implementation reported in Section 3. They were asked to indicate if they had taken part and, assuming they answered yes to that, if it had *changed my thinking for the better* and/or *improved my practice.* The next table is ranked according to how many people took part overall. Teachers could tick one, two or three of the participation options. If no box was ticked we assumed they had not taken part (the right-hand column in the next table).

Eleven percent of the responding teachers did not select any of the items, indicating that they had not experienced any of these professional learning opportunities. Participation patterns for other teachers were: 1–2 programmes, 29 percent; 3–5 programmes, 38 percent; and 6 or more programmes selected, 22 percent.

The most commonly experienced professional learning was literacy/literacy across the curriculum, with 73 percent of teachers having taken part. The next most frequently experienced professional learning opportunity was a PPTA curriculum support day (69 percent took part). Both of these initiatives would have been widely available—the first funded by MOE and the

---

[9] Extending High Standards Across Schools; Assess to Learn.

second by a combination of MOE and PPTA's own funding. Numeracy across the curriculum, AToL and ICT PD were also funded by MOE although availability of resources (including advisors) meant that only a limited number of schools could take part at any one time.

Table 16 **Teachers' curriculum-related professional learning experiences (n=870)**

Type of professional learning initiative	Took part only %	Changed thinking/ improved practice %	Did not take part %
Literacy, or literacy across the curriculum	22	51	27
PPTA curriculum support day	43	27	31
Using a new assessment tool (asTTle, PAT or similar)	34	32	34
Inquiry learning	16	36	48
ICT PD cluster or similar	17	26	57
Learning area conference or similar	10	32	59
Assessment for learning (AtoL or similar)	19	19	62
Numeracy, or numeracy across the curriculum	17	21	63
Te Kōtahitanga or similar	11	17	71
Learning-to-learn initiative	8	14	77
Higher education study (MEd or similar)	6	15	79
Action research or similar with outside researcher	6	12	82
EHSAS cluster or similar	8	11	82
Education for Sustainability	5	7	88
Education for Enterprise	6	5	89
Environmental education	4	6	91

Rows may not add to 100 because of rounding

Sixty-six percent of teachers said they had taken part in professional learning about a new assessment tool (asTTle, PAT or similar). This could have been school- or even team-specific learning and would likely have been funded from the school's own professional learning budget. In some cases, doing this might have been a precursor to the types of achievement-focused inquiries discussed in Section 7.

At the other end of the range just 82 teachers in total (9 percent) said they had taken part in environmental education programmes, with only slightly higher numbers for Education for Sustainability and Education for Enterprise. Rounding out the lowest rankings was participation in an EHSAS cluster. Not all teachers would have had the opportunity to participate in such a cluster, given their contestable nature, and the cessation of funding for some of these initiatives when the Government changed in 2008.

Teachers in deciles 1 or 2 schools were more likely to have taken part in Te Kōtahitanga and to say it had improved their practice. (As already noted, this programme was targeted to schools with a high percentage of Māori students on the roll, and these do tend to be low-decile schools.) They were also more likely than other teachers to say that taking part in literacy or literacy across the curriculum had improved their practice. Teachers in deciles 9 or 10 schools were the least likely to have taken part in learning about a new assessment tool, or to have attended a PPTA curriculum support day.

Teachers of English and languages were more likely to say they had taken part in an assessment for learning programme, and when they had done so to say it had changed their practice. (In a related effect specialist classroom teachers, many of whom were English teachers, said this too.) English and languages teachers were also more likely to have taken part in an inquiry learning programme that changed their thinking or a literacy programme that changed their practice. Mathematics and science teachers were more likely to have taken part in numeracy across the curriculum, and when they had done so to say it changed their thinking or changed their practice. These teachers were also relatively more likely to have taken part in a PPTA curriculum support day (62 percent of them, compared to 49 percent of social science teachers who were the least likely to have taken part).

Faculty leaders were more likely than other teachers to say that taking part in a learning area conference had changed their thinking. Senior leaders and specialist classroom teachers were more likely to say they had undertaken a higher education course that had changed their thinking and/or improved their practice.

The impact of professional learning

One way to analyse this data is to calculate the *relative proportions* of participants who reported impacts on thinking and action. What percentage of those taking part reported that they were sufficiently influenced to make changes in one or both these areas of potential response? The next table re-ranks the initiatives according to their overall influence on self-reported change.

Table 17 **The relative impact of the various professional learning programmes on changes teachers said they made (n=870)**

Type of professional learning initiative	% of all those who said they took part who also made changes in thinking and/or practice
Learning area conference or similar	77
Higher education study (M Ed or similar)	74
Literacy, or literacy across the curriculum	69
Inquiry learning	68
Action research or similar with outside researcher	65
Learning-to-learn initiative	63
ICT PD cluster or similar	61
Te Kōtahitanga or similar	60
Environmental education	59
Education for Sustainability	58
EHSAS cluster or similar	57
Numeracy, or numeracy across the curriculum	55
Assessment for learning (AtoL or similar)	50
Using a new assessment tool (asTTle, PAT or similar)	48
Education for Enterprise	48
PPTA curriculum support day	38

This analysis points to the relatively greater impact of *voluntary* learning opportunities such as conferences that teachers typically attend in their "holiday" time and personal higher education study, which is likely to take place outside school hours unless teachers have study leave. Teachers who choose to do these things are likely to be highly committed professionals who have identified areas of interest they wish to pursue so this pattern is what we might expect to see. Along with action research projects, higher education study is likely to include both theoretical and practical components, and to make spaces to support and sustain the rethinking of personal ideas and theories. This is one of the hallmarks of quality professional learning identified by the recent Best Evidence Synthesis (Timperley et al., 2007) so there are no real surprises that it is very likely to impact on thinking and practice.

Literacy across the curriculum is typically experienced as "whole-school" professional learning and hence has an element of compulsion, yet it was relatively more influential on thinking and practice than other whole-school professional learning opportunities listed. Seventy percent of those who said they took part reported a change in thinking, or practice, or both (19 percent had made changes in *both* areas). AtoL is a similar large-scale whole-school programme but it appeared to be relatively less successful in stimulating change. The least influential overall was

the PPTA curriculum support day which was a "one-off" event that relied on volunteer facilitators, supported by a package of materials generated by a national team.

Unlike the nationally focused programmes, it would be hard to make any generalisations about the goals and content of learning that took place in EHSAS clusters, given that each was designed and implemented independently. While there was likely to be some regional variation in programmes linked to School Support Advisory Services and selected private providers (literacy across the curriculum, AtoL, numeracy, ICT PD, Education for Sustainability etc.) these programmes would likely also have many similarities, and certainly would share common learning goals, as negotiated with MOE when they were funded.

Perceptions of the value of professional learning

Following on from the item bank about specific initiatives, the next question invited teachers to respond to 17 statements about the *overall* value and impact of these learning experiences on their practice. The next figure shows the results.

Most (80 percent) of teachers identified sharing ideas with colleagues as the best part of structured professional learning and 70 percent of them believed that experimentation with new ideas would be supported and encouraged in their school. However, just 51 percent said they had opportunities to observe and talk about their colleagues' work if they had a specific change in mind and even fewer (27 percent) had opportunities to observe and talk with teachers in other schools. Forty-three percent said that their school leaders showed the way by modelling inspiring professional learning.

Similar to the item set on specific initiatives, around three-quarters of the teachers reported at least some impact on practice from structured professional learning (74 percent). Involvement in professional activities beyond the school (for example, in NCEA-related moderation or standards-development processes) had contributed to the professional growth of nearly half the sample (47 percent).

In view of the discussion above about evidence of changes in thinking and in action, it is interesting to note that just 41 percent of teachers thought their professional learning had provided opportunities to explore deeper ideas and theories that might underpin new curriculum practices. Yet 63 percent said their learning had left them wondering if students could do more than teachers typically expect so, clearly, their thinking was being challenged at some level! Deep thinking requires time but just 52 percent of respondents perceived that quality time for their learning was provided in the course of their working day.

Figure 11 **Teachers' perceptions of the impact and value of their professional learning (n=870)**
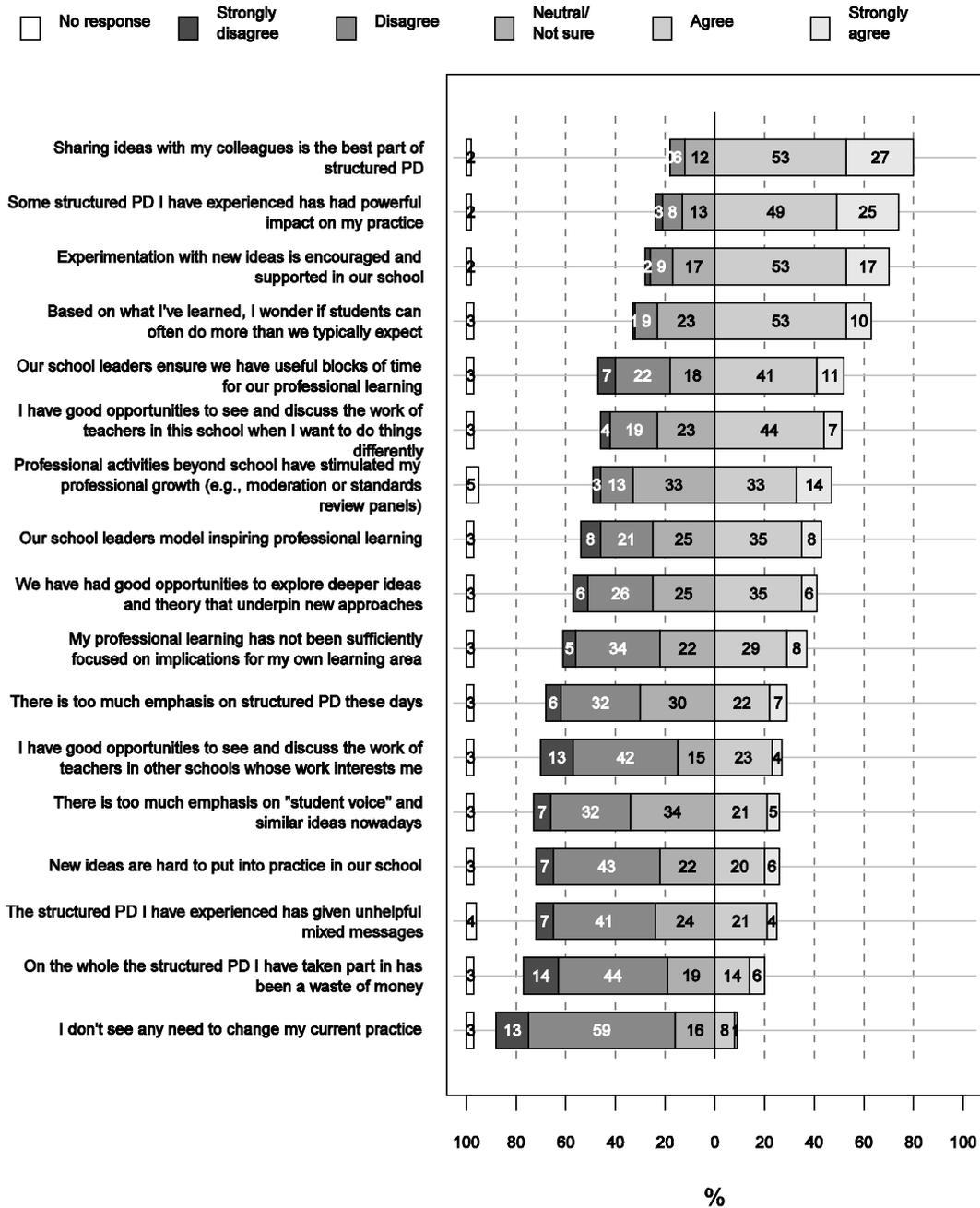
This item bank also contained a number of negatively worded items. Notice that these rank lower than all the positive items except opportunities to observe teachers in other schools. Over a third of the teachers (37 percent) would have preferred their professional learning to be more focused on their own learning area and 26 percent said new ideas would be hard to put into practice in

their school. A quarter of the teachers perceived that they had experienced unhelpful mixed messages in their professional learning and 20 percent saw it as a waste of money.

Associations with other variables

Teachers in mid-decile schools were more likely to *strongly* agree that structured PD they had taken part in had been a waste of money and had given mixed messages. They were also more likely to think there is too much emphasis on structured PD these days. Teachers in high-decile schools were more likely to disagree that structured PD had given them mixed messages.

Mathematics and science teachers were more likely to agree that structured PD had been a waste of money (25 percent of them agreed, compared to 18–19 percent of teachers of other subjects). They were also more likely to be unsure if experimentation with new ideas was encouraged and supported in the school. Social science/arts/commerce teachers were more likely to strongly agree that professional activities beyond the school had stimulated their professional growth.

Early career teachers (0–2 years' experience) were *less* likely than other teachers to agree that there is too much emphasis on structured PD or that professional activities beyond the school have stimulated their professional growth: 57 percent of them were not sure about the latter and 43 percent of them were not sure about the amount of emphasis on structured PD. No doubt these patterns reflect their relative lack of experience in their teaching careers thus far. Encouragingly, these early career teachers were more likely to strongly agree that experimentation with new ideas is encouraged and supported, and that school leaders ensure they have useful blocks of time for their professional learning.[10] Just over half the year 0–2 teachers (52 percent) disagreed or strongly disagreed that there is too much emphasis on student voice, compared to 42 percent of mid-career teachers and 36 percent of highly experienced teachers. Perhaps some generational differences are reflected in this pattern?

Mid-career teachers were more likely to agree that good ideas are hard to put into practice in the school. They were also less likely to agree that the school leaders ensure they have useful blocks of time for their professional learning, or that they have good opportunities to explore the deeper ideas and theory that underpin new approaches. Teachers with 11+ years' experience were over-represented in the small group who were unsure whether there was a need to change current practice (19 percent of them, compared to 10–11 percent of other teachers). They were also more likely to disagree that their professional learning was not sufficiently focused on their own learning area.

Senior leaders were more likely to disagree that structured PD gave unhelpful mixed messages, that is was a waste of money or that it did not relate to their learning area. Along with specialist classroom teachers they were also more likely to disagree that new ideas are hard to put into

---

[10] Year 1 and 2 teachers are not expected to carry full teaching loads. Their schools are legally obliged to provide additional release/learning time so it is encouraging to see this indication that this is happening.

practice in the school. These differences doubtless reflect the roles of these two groups in leading change in the school.

The relationship between professional learning experiences and NZC implementation factors

Individuals made either predominantly positive or predominantly negative responses to the professional learning item bank, with the strongest association being for the positive responses. Factor analysis revealed a degree of coherence in the responses:

- *The positive items made one factor (α=0.80) that we called Engaged by professional learning.*
- *The negative items made another factor (α=0.73) that we called Professional learning unhelpful.*

The essence of the items that make up the positive factor is that professional learning was seen as: relevant; satisfying; able to be acted on; and linked to deeper ideas. The somewhat lower alpha for the *Professional learning unhelpful* factor makes sense because the negatively worded items covered different sorts of situations: mixed messages; irrelevant or hard to enact ideas; feelings of coercion (at least hinted at); and professional learning that was not directly related to the teacher's own learning area. Note that just 9 percent of teachers saw no need to make any changes in current practice, so it is not that they are disinterested in learning.

When scores for these factors were categorised into five levels approximating the Likert scales for the individual items, the overall frequency distribution of responses for each factor was as follows.

Table 18 **Overall teacher views of the worth of their professional learning (n=870)**

Categorised response levels	Engaged by professional learning	Professional learning unhelpful
Strongly agree	6	4
Agree	9	14
Neutral/not sure	44	25
Disagree	22	21
Strongly disagree	17	34

Columns may not add to 100 because of rounding

It seems that around half the teachers saw some value in their professional learning (i.e., they did not rate it as unhelpful) but it is less evident that they have a clear sense of just where that value might lie (nearly half were in the overall neutral category for responses to the positively worded items). Patterns of associations with these categorised responses included:

- Teachers who were more engaged by their professional learning were also more likely to have high or very high morale.

- Teachers in deciles 3–8 schools were more likely to strongly agree or agree that their professional learning had been unhelpful. Teachers in deciles 9 or 10 schools were more likely to strongly disagree that this was the case.
- The higher the percentage of Māori students on the roll the more likely teachers were to disagree that their professional learning had been worthwhile.

There was a moderate inverse association between the two professional learning factors (r=-0.40). We would expect teachers who rated higher for one of these to rate lower for the other but the moderate level of correlation indicates that they are focused on somewhat different aspects of the professional learning experience. The next table sheds some light on this by showing relationships between the two teacher professional learning factors and the three factors related to the professional learning climate in the school.

Table 19 **Teacher correlations (r) between professional learning and school learning climate factors**

	Achievement-focused sharing	Teacher co-operation	Leadership
Engaged by professional learning	0.60	0.42	0.59
Professional learning unhelpful	-0.28	-0.17	-0.25

This pattern shows a moderately strong association between the factor *Engaged with professional learning* and experiencing the learning climate of the school as collegial and well led. This pattern makes sense given that the items focus on sharing learning, being inspired by the learning modelled by school leaders and having opportunities to discuss and try out new ideas. The association between *Professional learning unhelpful* and the same three aspects of the school learning climate is much weaker. This also makes sense because the focus of the items that make up this factor is weighted more towards *personal* perceptions and values, which are not necessarily those of the school staff overall.

To what extent does the overall experience of professional learning impact on implementation of NZC? The next table shows associations between the five NZC implementation factors described in earlier chapters and the two professional learning factors. Associations here are much weaker, with the inverse relationship somewhat stronger than the positive one. One possible explanation for the weak positive association is that engagement with professional learning could result in teaching and learning changes that *strengthen current practice* rather than changing it. As we saw in earlier sections, some of the more transformative intent of NZC (e.g., giving more say to students) does not yet appear to sit easily with deeply held values concerning the teacher's role.

Table 20 **Teacher correlations (r) between professional learning and curriculum implementation factors**

	NZC changes	Community input	Key competencies	Student experiences	Learning to learn
Engaged by professional learning	.13	.17	.20	.18	.17
Professional learning unhelpful	-.27	-.36	-.36	-.20	-.15

Association between professional learning factors and teaching experiences

Rating *low* on the *Engaged by professional learning* factor was associated with a greater likelihood of often experiencing disruptions to teaching. Congruent with this, rating *high* on the *Professional learning unhelpful* factor was also associated with often experiencing disruptions to teaching.

Rating *low* on the *Engaged by professional learning* factor was associated with a greater likelihood of rating support in the school for taking risks in teaching as poor or very poor. Congruent with this, rating *high* on the *Professional learning unhelpful* factor was also associated with rating support in the school for taking risks in teaching as poor or very poor.

These associations reinforce the picture from earlier sections: for the small number of teachers who struggle with their classroom practice it seems very likely that this situation is a barrier to engaging with pedagogical change.

Learning and change as a source of professional pride

All three NZCER National Surveys of Secondary Schools have asked teachers about their main professional achievements over the past three years. The list from which they could choose includes many changes that might be made in response to the sorts of professional learning experiences outlined above. The next table compares these three sets of responses. Note that five new items were added in 2009.

Many teachers gain a sense of achievement from their professional learning—this was the top-ranked item in both 2006 and 2009. In one sense this doubtless reflects the huge effort that has been put into the provision of professional learning programmes over the last few years. Recall that only 11 percent of the responding teachers said they did not do any professional development.

In 2009, just over half the teachers had gained a sense of achievement from trying out new approaches to pedagogy and just under half from NZC implementation and increased student engagement (all new items).

Assessment for learning and designing/refining NCEA assessments appeared to have waned somewhat as main achievements. It could be that teachers who felt they had successfully made changes in these areas in 2006 simply moved on to new challenges.

Table 21 **Teachers' main achievements in the past three years**

Achievement	2003 (n=744)	2006 (n=818)	2009 (n=870)
Increase in my own knowledge and skills	45	73	70
Positive/improved learning environment	46	63	56
Improvements in student achievement	30	52	54
Used new pedagogical approaches/teaching practices			51
Begun implementation of New Zealand Curriculum			48
Improved teaching programme	34	57	48
Increased student engagement level in my classes			46
Better meeting needs of a particular group of students	25	37	38
Refined/introduced new NCEA assessments	46	52	36
Implementation of an innovative programme	23	38	33
Improvement of student behaviour			28
Improved student assessment for learning	18	38	23
Parents more involved in learning	3	11	12
Nothing has really changed			2

Cross-tabulations revealed strong patterns of associations between reporting implementation of NZC as a main achievement and also nominating one or more of the other items in the above table that could also be seen as related to the vision and intent of NZC. The only items from the main achievement list that were not significantly associated with NZC implementation were "improvement of student behaviour" and "nothing has really changed".

Associations with the professional learning factors

Teachers at higher levels on the *Engaged by professional learning* factor were more likely than those at lower levels to identify all of the following as main achievements in the past three years: begun NZC implementation; improved student achievement; implementation of an innovative programme; and improved student assessment for learning. Those teachers who felt their professional learning had been a worthwhile experience, and one that they had opportunities to apply in their own work, were also more likely to have taken personal professional pride in four areas of achievement which all potentially relate to implementation of the new curriculum.

Teachers at the highest levels for the *Professional learning unhelpful* factor were the *least* likely to say they had taken pride in NZC implementation. By contrast, those at the lowest levels for the

Professional learning unhelpful factor were the most likely to say they had taken professional pride in: implementing an innovative programme; introducing new pedagogical approaches/ teaching practices; and increasing their own knowledge and skills.

What we can say overall is that those teachers who reported more positive professional learning experiences were also more likely to be experiencing a sense of achievement from classroom innovation and change. Which comes first is a moot point. Doubtless, success in one breeds success in the other. However, when we consider that many professional learning initiatives are national in scope (if not in execution) it does seem that experiencing similar learning opportunities need not lead to the same types of changes or indeed to any changes at all. This observation directs attention to the possible barriers to change that teachers perceive to hamper any innovations they might otherwise wish to try out. This is the focus of Section 9.

9. What teachers see as barriers to curriculum change

This section looks at the barriers that teachers perceive to hinder curriculum change. The item bank that probes these views was revised and updated in 2006 and again in 2009. Many of the original items were retained so it is possible to look at patterns of change over time.

Overall agreement that there are barriers to curriculum change has fallen since 2006, but not to the level of 2003.

Table 22 **Percentage of teachers who see barriers to change**

	2003 (n=744)	2006 (n=818)	2009 (n=870)
% who agreed there are barriers to making curriculum changes	62	85	78

Early-career teachers were *less* likely than more experienced teachers to say there were barriers to making changes in the curriculum they taught, but 12 percent of them were not sure (compared to 2–5 percent of other teachers). Teachers in mid-decile schools were more likely than those in low or high-decile schools to agree that there were barriers to making curriculum changes.

English and languages teachers were less likely than teachers of other subjects to say there were barriers to making changes in the curriculum they taught.

In 2009 nearly half the teachers (44 percent) cited three barriers or fewer. A small number (8 percent) appeared to perceive many barriers, ticking eight or more of the 19 listed items (see Table 23).

The nature of barriers that teachers identified

Table 23 lists the 19 survey items in descending order of frequency of mentions in 2009 and compares these responses with the equivalent 2006 and 2003 data. Blank spaces to the left of a row indicate the timing of additions. For example, the 2006 survey added a second NCEA item to take account of the potential pressures on teachers' thinking and planning time as they design and moderate assessments. In 2009 an item on principal commitment was added in view of recent research that shows how important the leadership and professional learning climate created in the

school can be for successful and sustainable curriculum change (Cowie et al., 2009; Robinson et al., 2009).

Six items showed a big drop in frequency mentions, as indicated by the grey shading on the relevant rows. Perceptions of the national curriculum as an impediment to change have halved. So has the belief that individual teachers do not have the authority to make changes to the curriculum they teach. The numbers who saw diversity as an impediment of curriculum change have fallen by almost half. All three shifts are likely to be related to the realisation that NZC provides the freedom to innovate and build a curriculum responsive to local needs, an aspect of the curriculum that has met with widespread approval (Cowie et al., 2009).

Table 23 **Teachers' perceptions of barriers to curriculum change (2003, 2006, 2009)**

Barriers to making curriculum changes	2003 (n=744) %	2006 (n=818) %	2009 (n=870) %
Lack of time	50	68	65
NCEA requirements		47	38
Lack of teaching resources	26	37	36
Classes too big		37	33
Time taken for NCEA assessments	40	42	30
Poor student behaviour	27	27	28
Lack of money	24	31	28
Classes too diverse		39	24
Wrong kind of PD	14	20	22
Lack of PD	13	22	20
National curriculum requirements	32	30	15
Lack of staff commitment	7	18	19
Staffing levels	14	19	15
Too few people in my department			15
I don't have authority		25	11
Timetabled periods too short		10	10
Parents' expectations	7	16	5
Lack of principal commitment			5
Lack of BOT commitment		3	2

Percentages add to more than 100 because multiple responses were possible

The time taken for NCEA assessments, while still an issue for around a third of the teachers, also showed a strong drop in levels of concern. NCEA requirements are still seen as a barrier by more than a third of teachers, down from nearly half the teachers in 2006. This view is doubtless related to perceptions that NCEA continues to drive the curriculum.

Perceptions that parental expectations hinder change have fallen by two-thirds (albeit from a relatively low response rate in 2006, and dropping back to 2003 levels). Perhaps the curriculum focus on community engagement is quietly beginning to bear dividends. All of the decreases highlighted by the shaded rows are encouraging signs for ongoing curriculum experimentation and change, assuming the trends continue. However, this optimism must be tempered by the lack of change for other items over the best part of the last decade.

Lack of time continued to be seen as an impediment to change by almost two-thirds of the responding secondary teachers. Other barriers identified by at least a quarter of the teachers were lack of teaching resources, large classes, poor student behaviour and lack of money.

Associations with other variables

Teachers in deciles 1 or 2 schools were *more* likely to identify lack of staff commitment and lack of professional development as barriers to curriculum change. They were less likely than other teachers to identify large classes and NCEA requirements as barriers. Teachers in mid-decile schools were more likely to identify lack of money, lack of teaching resources and NCEA requirements as barriers. Teachers in deciles 9 or 10 schools were *less* likely to identify lack of money, lack of teaching resources, wrong kind of professional development or student behaviour as barriers.

English and languages teachers were *less* likely than teachers of other subjects to identify the following as barriers: lack of time; lack of PD; NCEA requirements; classes too big; and classes too diverse. Mathematics and science teachers were *more* likely to identify student behaviour and time taken for NCEA assessments as barriers to making curriculum changes. Teachers of the practical subject cluster were *more* likely to say that timetabled periods were too short to make changes.

Early-career teachers were the *least* likely to identify lack of time, lack of professional learning and time taken for NCEA assessments as barriers to curriculum change. Mid-career teachers were *more* likely to identify lack of staff commitment as a barrier.

Senior leaders (acting principal/deputy principal) were *less* likely, and faculty leaders *more* likely than other teachers, to see lack of time as a barrier to curriculum change. Faculty leaders were also *more* likely to see the following barriers: lack of professional development; time taken for NCEA assessments; and too few people in the department. Specialist classroom teachers were relatively *less* likely to see NCEA requirements or large classes as barriers to change. Classroom teachers with no other responsibilities were over-represented in the small group who said they did not have the authority to make changes.

What we see here is that *combinations of contextual factors* play a part in the barriers that teachers perceive: where they are in their careers; who they work with; the roles they hold; the subjects

they teach; how well their school is resourced; and their school's structures and processes. All of these come together in different ways for different teachers.

Associations between barriers and views about NZC implementation

We now turn to an analysis of relationships between the barriers that teachers perceive and their views of NZC implementation and their professional learning. The results of the analysis are reported in two different ways. First we report the results of cross-tabulations that checked for patterns of association between the above list of possible barriers and all the factors described in the preceding sections of the report. Following that the same overall results are reported thematically; that is, by overall patterns of associations with specific *types* of barriers.

Associations between barriers and curriculum factors

We found an overall pattern of associations where teachers at the lowest end for any one of the factors discussed in the previous sections were also more likely to have identified implementation barriers. The next two tables summarise the patterns for this type of association. Any barriers that are not listed did not feature as significant associations.

Table 24 **Summary of associations between NZC teacher factors and barriers (n=870)**

Barriers	NZC changes	Community input	Key competencies	Student experiences	Learning to learn
Lack of time			✓	✓	✓
NCEA requirements			✓	✓	✓
Lack of teaching resources			✓	✓	✓
Classes too big				✓	✓
Time taken for NCEA assessments			✓	✓	✓
Poor student behaviour	✓	✓	✓	✓	✓
Lack of money					
Classes too diverse		✓	✓	✓	✓
Wrong kind of PD		✓	✓	✓	
Lack of PD		✓	✓	✓	✓
National curriculum requirements				✓	✓
Staffing levels		✓			

Some barriers that do not appear on NZC list above are identified in the next table (e.g., perceptions of not having the authority to make changes and of a lack of staff commitment). These associations make sense if teachers feel powerless to influence change beyond their own classrooms.

Table 25 **Summary of associations between collegial sharing and professional learning teacher factors and barriers (n=870)**

Barriers	Achievement-focused sharing	Teacher co-operation	Principal leadership	Engaged by professional learning	Professional learning unhelpful[11]
Lack of time	✓			✓	✓
NCEA requirements	✓				✓
Lack of teaching resources	✓	✓		✓	✓
Classes too big	✓	✓		✓	✓
Time taken for NCEA assessments				✓	✓
Poor student behaviour	✓	✓	✓	✓	✓
Lack of money	✓	✓	✓	✓	✓
Classes too diverse	✓	✓		✓	✓
Wrong kind of PD	✓	✓	✓	✓	✓
Lack of PD	✓	✓	✓	✓	✓
National curriculum requirements	✓			✓	✓
Lack of staff commitment	✓	✓	✓	✓	
Staffing levels	✓		✓	✓	✓
I don't have authority	✓	✓	✓	✓	✓
Timetabled periods too short				✓	
Parents' expectations				✓	
Lack of principal commitment			✓	✓	✓
Lack of BOT commitment				✓	

The overall pattern of associations suggests that if teachers cannot find a way to make productive use of their professional learning in their school context, almost anything can seem like a barrier

---

[11] Note that the pattern reverses for the *Professional learning unhelpful* factor, where a high level was associated with being more likely to identify barriers.

to curriculum change! Notice that almost every barrier is associated with the two professional learning factors (i.e., two right-hand columns of Table 25).

Two of the barriers themselves relate specifically to professional learning. From Table 23 we know that wrong kind of PD was a barrier for 22 percent of the teachers and lack of PD was a barrier for 20 percent. Eleven percent of the teachers ticked *both* of these as barriers. Notice that there is an association between these two specific barriers and being in the lowest grouping for almost every factor (see relevant *two rows across* both tables; they are grey-shaded).

There was a different pattern of association between some barriers (NCEA requirements; classes too diverse; lack of teaching resources) and *principal leadership*. These were more likely to be seen as barriers by those in the middle-to-low group for responses to the *principal leadership* factor (i.e., they were not in the lowest grouping).

Associations with barriers to making curriculum changes by theme

The associations summarised in the above two tables are now clustered and discussed thematically. Note that the survey question asked about making "changes to the curriculum you teach", not barriers to NZC implementation per se. Teachers could have been thinking about changes that they did not see as linked to NZC. However, the pattern of associations between perceived barriers to curriculum change and the three NZC factors related to specific classroom practices (key competencies; learning to learn; and student experiences factors) suggests it is not unreasonable to associate views about curriculum change in general and NZC changes in particular in the thematic discussion that follows.

Barriers linked to indications of learning conditions in the class

Teachers who identified *poor student behaviour* as a barrier were likely to be in the lowest grouping for every one of the factors in the above two tables. It is interesting that this was the only instance of NZC *changes* factor being associated with a specific barrier. Since this factor concerns changes teachers *thought* NZC might entail (as opposed to changes they valued or had actually tried to make) it might be that poor student behaviour impedes some teachers from even contemplating changes. Conversely, it might be that students behave badly in response to experiencing a limited range of teaching practices.

The pattern is similar where teachers identified *classes too diverse* as a barrier. The only two factors not associated with this barrier were *NZC-related changes* and *principal leadership*. The types of changes to teaching and learning that could help teachers cope with diversity by offering more opportunities to interact with students and more opportunities for collegial sharing of ideas are the very things that are less likely to be happening in these teachers' classes and in their professional interactions.

Teachers who identified *classes too big* as a barrier were more likely to be in the lowest group for the following factors: *student experiences; learning to learn; NCEA; teacher co-operation; achievement-focused sharing* and the two professional learning factors. Large classes present

some similar and some different challenges to diverse classes so what is *not* associated with both barriers is as interesting as what is. Compared to the list for diversity as a barrier *community input* and *key competencies* are missing from the list of factors associated with large classes as a barrier. So we do not get the same signals that not valuing student voice and more interactive/ participatory learning opportunities is what is at issue here. Rather it seems likely that sheer numbers of students can be a barrier to offering these types of opportunities in very big classes.

Lack of time as a barrier

Teachers who identified *lack of time* as a barrier to curriculum change were more likely to be in the lowest group for the following factors: *key competencies; student experiences; learning-to learn; achievement-focused sharing* and the two professional learning factors. As we have seen, teachers who do not appear to take an active part in collegial learning are less likely to be making the sorts of changes implicated by the three factors related to teachers' own classrooms. Additionally, the classroom actions described by the individual items in both the *student experiences* and *learning-to-learn* factors require some changes in the way classroom time is used, so that space is made for greater levels of student–teacher interactions. Thus the overall pattern suggests there are two different dimensions to lack of time as a barrier, but that lack of teacher learning time and perceived lack of opportunity to use classroom time differently might well interact with each other.

NCEA as a barrier

There is still a wide-spread perception that NCEA drives the curriculum in secondary schools (Hipkins, 2010). However in 2009 only 38 percent of teachers saw NCEA requirements as an actual barrier to curriculum change, so others have doubtless found ways to reconcile NCEA assessments and any curriculum changes they may have wished to make. Those teachers who did identify NCEA as a barrier to curriculum change were more likely to be in the lowest grouping for the following factors: *key competencies; student experiences; learning to learn; NCEA;*[12] and *achievement-focused sharing* and the two professional learning factors.

The *time taken for NCEA assessments* was seen as a barrier by 30 percent of the teachers. With the exception of the *achievement-focused sharing* factor the pattern of associations is the same as for NCEA requirements as a barrier. Teachers who are experiencing NCEA as a barrier are the least likely to value or offer the sorts of learning experiences that could help students develop their key competencies, or their learning-to-learn capabilities. They are also the least likely to feel they have benefited from any professional learning opportunities they may have experienced. Finding essentially the same combination of associations for both NCEA-specific barriers is suggestive of a conservative approach to teaching and hence, presumably, to assessment itself. Exploration of the deeper drivers for change could help to dispel the sense that NCEA is a barrier to curriculum change.

---

[12] A factor based on statement about attitudes to NCEA, as discussed in *The Evolving NCEA* (Hipkins, 2010).

Lack of teaching resources as a barrier

Teachers who identified *lack of teaching resources* as a barrier to curriculum change were more likely to be in the lowest group for the following factors: *key competencies; student experiences; learning-to learn; NCEA; achievement-focused sharing; teacher co-operation* and the two professional learning factors. Again, the first three items in this combination are suggestive of a conservative approach to teaching but it is interesting that here they are specifically associated with a need for teaching resources. This suggests that investment in good exemplar materials could provide the support that some teachers need to change their practice in directions signalled by NZC.

Lack of money as a barrier

Teachers who identified *lack of money* as a barrier were likely to be in the lowest ranking group for the following factors: *NCEA; teacher co-operation; achievement-focused sharing; principal leadership* and the two professional learning factors. With the possible exception of NCEA, these do not relate to changes teachers might make in their individual learning programmes but rather to school-wide and collegial learning factors.

Teacher agency and NZC as a framework curriculum

NZC is a framework curriculum that gives schools and teachers explicit permission to design a local curriculum to meet their own students' learning needs:

> Curriculum is designed and interpreted as a three-stage process: as the national curriculum, the school curriculum, and the classroom curriculum. The national curriculum provides the framework and common direction for schools, regardless of type, size, or location. It gives schools the scope, flexibility, and authority they need to design and shape their curriculum so that teaching and learning is meaningful and beneficial to their particular communities of students. In turn, the design of each school's curriculum should allow teachers the scope to make interpretations in response to the particular needs, interests, and talents of individuals and groups of students in their classes. (Ministry of Education, 2007, p. 37)

This quote makes it clear that professional agency needs to be exercised at all levels in the school: by the school leaders in designing an overall framework the school's curriculum; by teams according to the specific curriculum aspects they address (e.g., faculty teams in secondary schools); and by each teacher as they design and enact learning in their classrooms. If all teachers understood NZC as providing this sort of permission, we would not expect to see any say that national curriculum requirements are a barrier to making changes in the curriculum they teach. Encouragingly, the numbers of teachers perceiving this type of barrier have halved since 2006 and now stand at just 15 percent. Congruent with this is the halving of the number who perceived they did not have the authority needed to make changes—down to just 11 percent. Clearly most teachers do recognise the agency NZC grants them, even if they see other barriers to making curriculum changes.

As Section 2 outlines, building a local curriculum based on NZC is a complex design challenge. Understanding NZC's intent and then interpreting this within the local context has been a focus of both "whole-school" and "team-based" professional learning opportunities (Section 3). Directly or indirectly, a curriculum focus is likely to have been part of many professional learning opportunities reported in Section 8. All such opportunities take time, and it is not surprising that lack of time was the most commonly selected barrier to curriculum change. However, this barrier is also likely to involve a number of other considerations (it was also the highest rated barrier in both previous NZCER National Surveys of Secondary Schools, which preceded the introduction of NZC). Not least of these could be the way time is used in the classroom, which in turn relates to the purposes teachers see for learning in their classes and the outcomes they value for their students. Learning in the senior secondary school has traditionally been associated with gaining qualifications as a main outcome, with the requirements for high-stakes assessment as the de facto curriculum (Section 2). In view of this, it is interesting that perceptions of NCEA as a barrier to curriculum change have fallen, even though many teachers do still perceive that it drives curriculum (Hipkins, 2010). We anticipate more changes in this area in 2012 when the standards review has been completed and, at least in theory, NCEA and NZC will be more closely aligned.

Strong collegial interactions bring their own time demands but there are clear indications in both this section and previous sections that taking part in these is associated with curriculum innovation and change. One new insight to emerge in this section is that teachers who feel they lack the personal authority to make curriculum changes are likely to be at low end of responses for all the factors that imply a dimension of *collegial* interaction and learning (e.g., both professional learning factors, achievement-focused sharing, teacher co-operation and principal leadership). We don't see the same pattern of associations between lack of personal authority as a barrier and NZC factors that capture changes teachers might make in the relative privacy of their own classes (Table 24). So it is not as if these teachers feel they cannot make changes if *they* want to. This in turn implies they think others will not allow certain types of changes, for whatever reason. Yet the very thing that might help these teachers have the confidence to take up the agency NZC grants then—i.e., collegial learning, especially in relation to NZC and perhaps NCEA changes—is the very thing they appear to be missing out on. Relationships between the personal and collegial dimensions of agency, innovation and change are likely to be complex and different for different teachers. This dilemma bears further investigation.

10. "Student voice" as an indicator of teacher orientation to NZC

The first section of this report noted that, compared to NCEA, there has been considerably more research commissioned to gather insights into the actions of schools in the early stages of learning about and giving effect to NZC (recently synthesised by Schagen, in press). The title of our report reflects both the complexity of this process and its ongoing, evolving nature. Schools cannot stop, take stock, redesign and then start again. They have no option but to "build the plane while flying" if they perceive that significant change is required.

At the time of the 2009 NZCER National Survey of Secondary Schools many schools were still considering the likely impacts of NZC on their practice, at both school-wide and classroom levels. Full implementation was not mandatory until 2010 and other research was already suggesting the learning journey entailed could well take considerably longer than that (see, for example, the CIES study of Cowie et al., 2009). In this context this report provides valuable baseline data which can be revisited at the time of the next NZCER National Survey of Secondary Schools in 2012.

Research in the CIES early adopter schools has suggested that actions already taken should be best viewed as interim, and likely to be revisited in a recursive pattern of drawing on more recent insights to rethink those actions already taken. This is particularly applicable to the least familiar new features such as the key competencies and the emphasis on learning-to-learn. These are complex constructs that can be understood to have both surface and deeper layers of meaning and pedagogical possibilities. As deeper insights come into view schools and individuals may be compelled to reconsider aspects of implementation they thought they had completed. Acknowledging this dynamic and ongoing aspect to implementation led some of the school leaders in the CIES study to identify living with uncertainty and open-ended learning as an important implementation challenge (Cowie et al., 2009, Hipkins et al., 2009).

To these findings this report adds considerable detail about what teachers perceive to be important aspects of NZC implementation in their classrooms and what they say they already do. The items used to explore aspects such as teachers' views of key competencies describe specific types of classroom action, which affords rich opportunities to explore the *how* of implementation not just the *what*. In this report the principals tend to play a supporting role—the main focus is on what teachers think and do. This is not to say principal views and actions are not important to implementation. On the contrary the factor analysis reveals they have an important part to play in leading by example by creating an achievement-focused learning environment in the school, but teachers must be the drivers of change in actual classroom practice.

Bearing in mind that the survey was taken in the early stages of NZC implementation, an important challenge for the analysis was to look for indications of areas where additional support might be fruitfully provided for ongoing teacher learning. With this challenge in mind, the focus of this penultimate section of the report is on the relationship between teachers' understanding of, and views about, "student voice" and the manner in which they had (as of mid-2009) gone about giving effect to NZC. As outlined next, pedagogies that involve students in various types of learning conversations are a key ingredient in designing and implementing a local curriculum that meets identified needs of a specific group of students. The section synthesises evidence of differences in teachers' orientations to various pedagogical practices that entail an element of student voice and identifies opportunities for ongoing professional learning. First, however, it is important to explore the potential scope of the very idea of "student voice".

The scope of "student voice" as a pedagogical idea

"Student voice" is a catch-all phrase that appears to be underpinned by at least five different types of pedagogical application, each of them linked to a different body of theory that is likely to be invisible to, or at best tacitly understood by, teachers. Although they are described separately here, there are also many potential points of intersection between these five pedagogical traditions.

Idea 1: Formative assessment

Recent professional learning initiatives such as AtoL are underpinned by *constructivist theories of learning,* whether teachers are aware of this or not. The central assumption is that students actively build their own meanings for the learning experiences they encounter, and these will not necessarily be the meanings intended by the teacher. If teachers are not aware of the ways in which students understand the intended ideas/skills they cannot effectively determine "next learning steps". Thus the "voice" of students here entails ascertaining how they have understood the intended learning. This is illustrated by the "learning inquiry" question "What happened as a result of the teaching, and what are the implications for future teaching?" in the *Teaching as Inquiry* model in NZC (Ministry of Education, 2007, p. 35).

Idea 2: Inquiry learning

Student inquiry pedagogies have also been strongly associated with NZC implementation. Here the "voice" of students pertains to the identification and pursuit of questions that interest them and, at best, link meaningfully to their lives beyond school. The CIES research found that many schools first engaged with inquiry pedagogies via ICT professional learning programmes, typically before NZC arrived in the school (Cowie et al., 2009). ICT providers often presented models of inquiry that supported students to use the Internet to strengthen their information literacy skills, with the added bonus of providing a means of integrating curriculum content from several different learning areas. To the extent that this idea is theorised, it is likely to be linked to

James Beane's concept of "big ideas" that are important for learners because they help students find meaning in life and its bigger questions. Thus is it likely to be read as a means of *engaging and motivating* students. The deeper origins in Dewey's quest for a *pragmatic theory of knowledge* to help make sense of rapidly changing social times (Menand, 2001) are likely to be invisible to most teachers and professional learning providers.

Idea 3: Student leadership

The CIES early adopter schools often drew students into wider community conversations about the school's curriculum as they went about giving effect to NZC. Typically student leader groups were consulted and their representatives may, in turn, have consulted other students. The "voice" component here draws on a long tradition of developing some students' leadership skills, and has been closely associated with the key competency *participating and contributing*. Underpinning this interpretation of voice are deeper *sociological* ideas about democracy and self-determination within the constraints of existing societal structures. A related "voice" component can be found in the *Values* section of NZC (Ministry of Education, 2007, p. 10) where values clarification pedagogies are outlined and linked to "community and participation for the common good".

Idea 4: Self-regulation, learning to learn

Again, these pedagogies draw on long-established educational traditions, in this case underpinned by *psychological theories of personal development*. The "voice" component entails supporting students to increase their self-awareness and ability to regulate their own behaviour and thinking. Again, the essence of this tradition can be read at a superficial level, as has often happened with the key competency *managing self*, but there are deeper layers of ideas related to increasing agency and autonomy.

Idea 5: Responding to diversity

This pedagogical tradition has its origins in equity concerns that acknowledge the rights of all students to be engaged by their learning, regardless of their different individual starting points and any special learning needs. Thus the "voice" component here relates to a responsiveness to individuals that is underpinned by a mix of developmental, democratic and constructivist ideas/ideals. However, recent professional learning programmes have expanded this tradition to include ideas about cultural differences that draw on *anthropological* theorising which includes ideas such as differences in "world views". Te Kōtahitanga is a good example here, as indeed is the existence of two official versions of the New Zealand Curriculum, with Te Marautanga o Aotearoa not being a direct translation of the English version. Such anthropological theorising has important equivalents outside education—for example, work in the "Social Studies of Science"

tradition.[13] However, few teachers are likely to be familiar with this contested theoretical paradigm. Complex pedagogical ideas such as working in the "third space" (where different voices come together to seek points of connection and common ground) have emerged as recent responses to research with an anthropological orientation. A number of philosophical threads (nature of culture, nature of disciplines, theories of knowledge and knowing) need to be drawn together to make sense of ideas such as "third space" so it not surprising that this type of enactment of "voice" ideas is likely to be amongst the most controversial.

These ideas get mixed together in practice

Further adding to the complex and challenging nature of "student voice" as an idea, the five areas outlined above are likely to come together in ways that obscure their differing origins and theoretical traditions. Directions for Assessment in New Zealand (DANZ) is a good example.[14] DANZ argues that active involvement of students in making decisions about their learning and assessment:

- provides the potential to integrate some front-end features of NZC such as values and key competencies with the content of the back half (see discussion of this challenge in Sections 1 and 3)
- could greatly assist teaching as inquiry (see Section 6), thereby making continuous improvement in teaching and learning more likely to be achieved
- is consistent with NZC principles (e.g., *high expectations, Treaty of Waitangi, cultural diversity, inclusion, learning to learn*)
- is likely to enhance student engagement and better prepare students for ongoing learning beyond school (also learning to learn—see Section 5).

DANZ locates active involvement of students in making decisions about their learning and assessment as the single change most likely to lift achievement for all students (Absolum et al., 2009). An important qualification is that both teachers and students do need to be *assessment capable*.[15] This recommendation was not intended to be about "feel good" or tokenistic inclusion of students' voices but rather about making appropriately-informed choices of the sort that teachers already make when they access deep professional expertise to support students' next learning steps—that is, the underpinning links are to pedagogies that provide accessible formative assessment and learning-to-learn opportunities.

---

[13] In this research tradition the researchers follow and document what scientists *actually* do, using research tools such as "actor network theory". This stands in contrast to more philosophical studies of the "nature of science" that largely rely on tidied-up accounts of what scientists *say* they do.

[14] As one of the authors, I have taken the liberty of being critical of my own thinking here. I wrote the first draft of the section that makes the bullet-pointed links summarised here.

[15] DANZ defines this capability as being "able and motivated to access, interpret and use information from quality assessments in ways that affirm or further learning".

The range of benefits DANZ outlines in support of the recommendation that improving assessment capability of teachers and students should be the focus of ongoing policy attention with the aim of lifting student achievement across the board, illustrates how different theories and philosophical traditions converge in practice. This is not inherently a "problem" because it is possible to draw coherent links between many of the *deep* ideas that underpin student voice initiatives. However, problems such as teacher resistance are likely to arise where superficial understandings lead to trivialisation of the intent of any student voice initiative.

A recent paper that outlines MOE's position on assessment policy has incorporated the recommendations from DANZ and includes six principles for all policy-related decision making about assessment. The principle that most directly reflects the idea of building assessment capability is that "the student is at the centre" of all curriculum and assessment decision making (Ministry of Education, 2010). There are, however, different ways to think about the implications of this principle. For example, if teachers see this as a matter of competing balances, a "zero-sum game" in which giving more say to the students means taking away input from the teacher, then they will resist with good reason (Davis & Sumara, 2010). As Davis and Sumara point out, what is needed instead is a view of learning as a "dynamic complex pairing" (p. 857) in which teachers and learners co-produce the knowledge that emerges as they interact. This idea arises from complexity theories of knowledge and knowing[16] and is likely to be unfamiliar to many teachers. This is yet one more unfamiliar philosophical and theoretical thread to add to the multiple dimensions of "student voice" outlined above. No wonder teachers' views of the value that should be attached to "student voice" diverge, and the different positions they take are reflected in very different views of what giving effect to NZC should entail.

Recapping teachers' views of student voice

One item in the bank that probed teachers' views of their professional learning said *there is too much emphasis on "student voice" and similar ideas nowadays*. Twenty-six percent of the teachers agreed or strongly agreed with this statement, 34 percent were unsure and 39 percent disagreed or strongly disagreed (see Section 8). Thus views were split almost into thirds, with a small weighting towards disagreement (i.e., towards being supportive of the idea of student voice). It will be interesting to see if the balance tips further by the time of the next NZCER National Survey of Secondary Schools in 2012.

A similar picture was evident for an item from the bank that explored potential actions to implement NZC: *give students a voice in curriculum planning*. Fifty-three percent of teachers agreed, 26 percent were unsure and 19 percent disagreed. Principals were also asked this question and 77 percent of them agreed, with just 6 percent disagreeing and 17 percent unsure (Section 4).

---

[16] The associated pedagogical tradition is called enactivism, but this idea appears to have gained little purchase in New Zealand as yet (or elsewhere?).

Student involvement in curriculum planning could be seen as one subset within all the possible ways the idea of "student voice" might be given effect. When the two items were cross-tabulated we found that just over a quarter of the teachers (27 percent) agreed that there is too much emphasis on student voice, yet these same teachers also saw it as important to give students a voice in curriculum planning. The seeming contradiction might reflect differences between being asked to think about a concrete action (curriculum planning) and about an "in-principle" idea.

For teachers, being supportive of the idea of student voice in principle (e.g., disagreement that there is too much emphasis on student voice) is associated with:

- placing a high value on the types of learning experiences that could potentially provide students with opportunities to strengthen their key competencies (Section 4)
- actually offering students these types of learning experiences in class (Section 5)
- enacting learning-to-learn strategies that make expected achievement an explicit focus of classroom conversations—between students as well as with the teacher (Section 5)
- generally seeing value in curriculum-related professional learning (Section 7)
- being a senior leader in the school or a specialist classroom teacher and thus by implication being directly involved in shaping and supporting the school's professional learning programme.

Te Kōtahitanga is an example of a "voice" initiative underpinned by ideas about responding appropriately to diversity, with its emphasis on supporting and assisting Māori students to experience success *as Māori.* Sixty percent of the teachers who took part in Te Kōtahitanga said it had changed their practice, leaving another 40 percent who presumably took part but made no changes. Do we see indications of links to student voice? Section 4 reported that the *community input* factor was more strongly supported by teachers in schools with high numbers of Māori students on the roll, and Te Kōtahitanga was preferentially offered to such schools. Cross-tabulation of the *community input* factor with teachers' experiences of professional learning programmes did indeed reveal that teachers who took part in Te Kōtahitanga, *and* who said they had changed their thinking or practice as a result, were more likely to agree or strongly agree with the *community input* factor. One of the four items that made up this factor is "give students a voice in curriculum planning". No doubt a range of considerations influenced teachers' thinking but here we see an association between one indication of in-principle support for the idea of student voice and self-reports of making actual changes in classroom practice that are congruent with directions signalled by NZC (in the case of Te Kōtahitanga the principles of inclusion and Treaty of Waitangi are arguably in the centre of the frame).

A further confirmation of the pattern comes from a cross-tabulation of the views of changes important to NZC (Section 4) and the statement that there is too much emphasis on student voice. Seventy percent of the teachers who strongly disagreed with this statement (i.e., they support the idea of student voice in principle) thought it would be important to change aspects of their pedagogy as part of NZC implementation. In addition to the statements covered by the *community*

input factor, there were associations between being supportive of student voice and perceiving that NZC implementation would require:

- making greater use of authentic contexts
- using more self- and peer assessment
- making more pathways though the senior secondary school
- looking at how the National Standards relate to teaching and learning programmes in Year 9.

The first two of these items link to student inquiry and self-regulation dimensions of "voice" respectively. The second two indicate an awareness of the need to accommodate the different learning needs of different students. This does not necessarily imply an element of student voice, but as we have seen is likely to originate from the same theoretical space as voice initiatives as a response to diversity.

This pattern of associations between making changes congruent with NZC and in-principle support for the ideas of student voice suggests that a focus on why this idea matters might help unlock actual classroom change in response to NZC. Are there elements in the tacit pedagogical thinking of teachers who have not made changes that could be brought into view and explored with NZC-related curriculum changes in mind?

Opportunities to explore the idea of "student voice"

Since enacting the ideal of student voice could potentially be a change maker, but is clearly challenging for some teachers, it is important to recap evidence of grounds for objections that are likely to be sincerely but tacitly held, as well as grounds for valuing more active student participation in their learning. The following synthesis points to opportunities to open up professional learning conversations that might help some teachers develop a deeper understanding of possibilities for giving effect to NZC.

Just 9 percent of teachers said they saw no need to make changes in the curriculum they teach (Section 4) which suggests most teachers are aware of the need to learn about ways to change their practice as they give effect to NZC. This report also provides grounds for believing that teachers *will* make changes when convinced of the need to do so. Most do appear to have a strong sense of professional agency (as evidenced by low and declining numbers who do not perceive they have the authority to make changes—Section 9).

The potential for cross-curriculum conversations

This report describes a clear pattern of learning area-related associations. Teachers of mathematics and sciences were relatively more likely to be opposed to a whole range of practices that could be seen to have a strong element of student voice, both in principle (Section 5) and in practice (Section 6). They were also less likely to invite student input into topic selection, and indeed the whole range of learning-to-learn strategies outlined in Section 6. Teachers of these

subjects were less likely to say that exploring the vision and values would be important to NZC implementation (Section 4), or to acknowledge that whole-school exploration of some of the front-end features of NZC had taken place (Section 3). The overall pattern of associations supports other research that shows that the focus for teachers in these discipline areas tends to be on curriculum coverage, achieved by the use of strong traditional pedagogies (Bull et al., 2010).

As we might predict, given these associations, mathematics and science teachers were somewhat more likely than teachers of any other subject area to agree that *there is too much emphasis on student voice and similar ideas these days*. The next table summarises subject-specific differences for the four main learning area clusters used for cross-tabulation purposes.

Table 26 **Subject teachers' views about statement: *there is too much emphasis on student voice these days***

Learning area cluster	Agree/Strongly agree %	Neutral/Not sure %	Disagree/Strongly disagree %
Mathematics, sciences	32	40	25
Technology, PE, health, transition, careers, special education	27	33	37
Social sciences, arts, commerce	21	36	42
English, languages	21	26	52

Columns may not add to 100 because of rounding

Notice that agreement levels (i.e., expressing reservations about the idea of student voice) range between 21–32 percent whereas more supportive views range between 25–52 percent. Notice too the relatively high levels of "not sure" responses across most of the subject clusters, including mathematics and sciences. The views of many teachers appear to be open, which points to interesting learning opportunities. Just over half the English and languages teachers already support the idea of student voice in principle, but there is across the board support, including from a quarter of the mathematics and science teachers. What possibilities do these supportive teachers see that could be shared with other teachers in collegial learning conversations? Do opportunities need to be put in place for cross-curriculum conversations to happen more often, and for more teachers? (The participation patterns reported in Section 7 suggest this need.)

The patterns of differences also suggest possibilities for exploring teachers' views of the *purposes* for learning in their subject. The essence statements of NZC do spell these out[17] but, as we have seen, taking part in *both* whole-school and within-team exploration of the essence statements and the associated learning objectives is not common (Section 3). If teachers do not have a chance to

---

[17] However, as one recent report explains for science, teachers get mixed messages where different purposes are cued by the curriculum with no associated means of determining which among them should take priority in what circumstances (Bull et al, 2010). The likelihood that many science teaching teams are not even aware of this tension points to one pitfall of requiring every school to design a local curriculum based on a relatively open framework, although specific guidance could be provided if MOE saw this as an important need.

© NZCER

think beyond traditionally held beliefs within their own subject team, it is quite likely that their views of the purposes for which students learn their subject will not have been challenged by NZC-related learning. This lack of opportunity is likely to be exacerbated where there is a sense that a teacher is isolated from collegial sharing (Sections 7 and 9) or that they are being coerced into taking part in professional learning that is not relevant to their subject as they currently understand such relevance (Section 8).

Paying attention to differences in school contexts

There are some indications of decile-related differences in attitudes to student voice. Teachers in deciles 1 or 2 schools are more likely to be very supportive of the principle of *community input* (Section 4) and there was a trend for them to be more likely to strongly disagree that there is too much emphasis on student voice and for teachers in deciles 9 or 10 schools to strongly agree with this statement (p=0.06). Teachers from across the deciles variously supported the idea but the *strongest* reactions either way showed associations with decile.

Analysis of NCEA-related responses from the 2009 NZCER National Survey suggested that different sets of pressures may be experienced by teachers in high- and low-decile schools. For teachers in high-decile schools the pressures are more about the credibility of NCEA and its impact on student motivation, compared to more traditional models of curriculum and assessment (Hipkins, 2010). For teachers in low-decile schools the pressures are more likely to relate to provision of appropriate learning pathways for students with very diverse learning needs. Again, this pattern suggests opportunities to relate ideas about student voice and NZC implementation challenges to teachers' professional concern for their students' achievement and to tacit beliefs about purposes for learning in their subjects.

So long as high-stakes assessment is seen as the main driver of learning, a focus on curriculum coverage is likely to subvert any attempts to make some teachers' practice more interactive and student-centred (see discussion on NCEA as a barrier—Section 9). This is not to say that low-decile schools are immune from the competitive pressures associated with high-stakes assessment (e.g., publication of league table comparisons) but they do seem to have been somewhat more likely to find the collective space to explore and address ways to meet diverse learning needs (Section 4). What insights might they be able to share with other schools?

Nor are teachers in high-decile schools neglecting NZC's new possibilities. Compared to their peers in low-decile schools, one advantage they appear to enjoy is the greater likelihood of teaching classes that are not disrupted by serious behavioural challenges (Section 6). Innovation is likely to be somewhat easier where teachers do not have to confront such challenges, provided they see the need for change. The report points to a need to help some teachers break the vicious spiral of teaching that does not engage students and behavioural challenges that can result when students are not engaged (Sections 6 and 9). Throughout the report there are indications that students are more engaged where learning experiences more congruent with NZC's new directions, so perhaps those teachers who have been able to enjoy cutting-edge innovation can be

given more opportunities to share their professional learning. With appropriate support and resourcing they could well be the developers of good exemplars that demonstrate how actual subject teaching could change in ways that align the front-end of NZC (as embodied in ideas such as student voice) and the back-end detail (see Sections 2 and 4).

Opportunities to theorise ideas about student voice

No matter how supportive of the idea of student voice they may or may not currently be, teachers are unlikely to arrive at a complex and multifaceted understanding of the principles behind student-centred learning without the support of professional learning programmes that are demonstrably grounded in practice yet also build coherent bridges to theory. In the absence of such learning opportunities, superficial interpretations of the intent of student voice are likely to ensure continued resistance from some teachers. The multiple origins of ideas about student voice, as outlined in the introduction to this section, suggest that building deeper theory–practice links will be no mean feat. This has implications for supporting the professional learning of the professional learning providers and of the teacher/leaders who are shoulder-tapped to develop exemplar materials for other teachers to use.

11. A tale of two teachers

This final section draws together and contextualises the patterns reported in the previous sections by presenting two hypothetical secondary teachers, each reacting in a very different way to the challenges of giving effect to a new national curriculum.

Teacher A is on a roll. In the last few months s/he has been enjoying teaching more than ever. It took Teacher A some time to be convinced that the NZC really did give schools, and indeed individual teachers, the professional autonomy to determine the best course of learning for their students. All the shared conversations about NZC helped, and so did some of the ideas in the readings judiciously selected for the school-wide professional learning programme put together by one of the deputy principals. However, NZC only really started to gel when s/he made connections between their learning area, the key front-end messages and the literacy-across-the-curriculum programme, with its focus on pedagogical approaches that were new to Teacher A. At first, the best thing was seeing how student engagement improved, followed some time later by indications that achievement levels were starting to lift. Teacher A was aware that some students who had reputations as trouble makers in other classes were working well in his/her class and enjoying greater success. This encouraged Teacher A to share new ideas with other members of the school staff during one of the regular "learning together" sessions that were now part of the school's meeting programme. Some of the other teachers were so enthused that Teacher A felt sufficiently confident to offer a workshop at the next subject association conference. Several members of the executive happened to come to the workshop and soon Teacher A was shoulder-tapped to be part of the next NCEA standards development panel, which had been organised by NZQA and MOE in consultation with the subject association. The experience of rethinking aspects of NCEA, and interacting with other similarly highly engaged peers from other schools, consolidated the gains Teacher A had already made and also resulted in new questions and new ideas to explore. Teacher A is not yet fully convinced that so-called "student voice" is not just a passing fad but s/he has begun cautiously looking into the ideas behind it, and why some people seem to think it is a good idea. One thing is certain—more change is coming!

Teacher B is feeling overwhelmed and demoralised by all the ridiculous ideas and impossible expectations that seem to be in the wind. First NCEA, which was and continues to be, far too much work, and now a new curriculum where no-one seems willing to tell Teacher B exactly what s/he is required to do. Teacher B runs a tight ship. S/he has (or rather had—things have been a bit ragged lately) excellent control of students and a focused carefully planned programme that covers the curriculum content needed for examination success. This, after all, is what counts with parents and students—and with the principal and BOT! Teacher B takes professional pride in getting students through traditional examinations and is very opposed to some of the changes

signalled by the new NCEA standards. S/he has been a reluctant attendee in school-wide professional learning programmes, seeing these as having little relevance for his/her own work. Some other staff in Teacher B's school seem to be feeling much the same. The school's leaders don't inspire confidence in this group of teachers (they, too, seem to waiting for someone else to tell them what they have to do with NZC) and what little collegial sharing is happening seems to have by-passed Teacher B, who is feeling disillusioned and yet also has a vague sense of having missed something important that could help all the runaway change make sense. S/he just wants thing to go back to the way they were some years ago.

Concluding comment

These vignettes are based on data from the previous sections, held together with contextual knowledge of wider professional activity in the secondary school sector. Teacher B is highly experienced but could equally well have been written as a beginning teacher, overwhelmed with all there is to learn. Indications of the learning challenges that face early career teachers were particularly clear in NCEA report from the 2009 NZCER National Survey (Hipkins, 2010).

The hypothetical tales have been shaped to highlight what the philosopher Onora O'Neill has described as virtuous and vicious spirals of accountability in public sector roles[18] (O'Neill, 2002). Teachers who are enjoying success in making changes that align with the intent of the new curriculum are increasingly seeing how the diverse changes fit together. Their students are likely to be more engaged and achievement results are improving as well. The positive feedback these teachers receive for their own innovation sustains and encourages them to keep going, and to cope with the uncertainties ahead. They are succeeding in keeping the "plane in the air" even while rebuilding goes on.

Teachers for whom there is no sense of coherence or purposeful new direction are in danger of being left even further behind. If they have a sense that change is too complex, or even unnecessary, they are likely to avoid any change that could lead to "crashing the plane". It would be a mistake, however, to hold them solely accountable for lack of pedagogical change. Professional meaning is made (or not) in a nested set of systems that include team, whole-school and wider-system accountabilities for change. Leadership of professional learning at all these levels is vital, and reversing the direction of the change spiral is worthy of all the help and support that can be given to teachers who appear to need this.

---

[18] She identifies similar dilemmas for police and health workers, for example.

References

Absolum, M., Flockton, L., Hattie, J., Hipkins, R., & Reid, I. (2009). *Directions for Assessment in New Zealand (DANZ)*. Wellington: Ministry of Education.

Bolstad, R., & Gilbert, J. (2008). *Disciplining and drafting, or 21st century learning? Rethinking the New Zealand senior secondary curriculum for the future*. Wellington: NZCER Press.

Bolstad, R., Roberts, J., Boyd, S., & Hipkins, R. (2009). *Kick starts; Key competencies: Exploring the potential of participating and contributing*. Wellington: NZCER Press.

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.

Bull, A., Gilbert, J., Barwick, H., Hipkins, R., & Baker, R. (2010). *Inspired by science: A paper commissioned by the Royal Society and the Prime Minister's science advisor*. Wellington: New Zealand Council for Educational Research.

Bull, A., Hipkins, R., Joyce, C., & MacIntyre, B. (2007). *Kick starts; Key competencies: The water cycle—a science journey, teacher's notes*. Wellington: NZCER Press.

Cowie, B., Hipkins, R., Boyd, S., Bull, A., Keown, P., McGee, C., with Bolstad, R., Cooper, B., Ferrier-Kerr, J., Hume, A., Mckim, A., Moreland, J., Morrison, M., Spiller, L., Taylor, M., & Yates, R. (2009). *Curriculum Implementation Exploratory Studies: Final report*. Wellington: Ministry of Education.

Davis, B., & Sumara, D. (2010). "If things were simple ...": Complexity in education. *Journal of Evaluation of Clinical Practice, 16*, 856–860.

Education Review Office. (2009). *Readiness to implement the New Zealand curriculum*. Wellington: Author.

Education Review Office. (2010). *Preparing to give effect to the New Zealand Curriculum*. Wellington: Author.

Gilbert, J. (2005). *Catching the knowledge wave? The knowledge society and the future of education*. Wellington: NZCER Press.

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-anlayses relating to achievement*. London, New York: Routledge.

Hipkins, R. (2008). The "something more" in key competencies. *set: Research Information for Teachers, 3*, 35–37.

Hipkins, R. (2009). Determining meaning for key competencies via assessment practices. *Assessment Matters, 1*, 4–19.

Hipkins, R. (2010). *The evolving NCEA*. Wellington: New Zealand Council for Educational Research.

Hipkins, R., Conner, L., & Neill, A. (2006). *Shifting balances 2: The impact of NCEA implementation on the teaching of geography and home economics*. Wellington: Ministry of Education.

Hipkins, R., Cowie, B., & Boyd, S. (2009). *The collaborative path to implementation: Insights from NZCER Curriculum Conference series*. Wellington: NZCER Press.

Hipkins, R., & Neill, A. (2006). *Shifting balances: The impact of level 1 NCEA on the teaching of mathematics and science*. Wellington: Report prepared by NZCER for Ministry of Education.

Hipkins, R., Vaughan, K., Beals, F., & Ferral, H. (2004). *Shared pathways and multiple tracks. Interim research report—second year of Learning Curves, Meeting student learning needs in an evolving qualifications regime.* Wellington: New Zealand Council for Educational Research.

Hipkins, R., Vaughan, K., Beals, F., Ferral, H., & Gardiner, B. (2005). *Shaping our futures: Meeting secondary students' learning needs in a time of evolving qualifications*. Wellington: New Zealand Council for Educational Research.

Hipkins, R., with Shanks, L., & Denny, M. (2008). Early experiences of longer learning periods at Alfriston College. *set: Research Information for Teachers, 1*, 44–49.

Ingvarson, L., Kleinhenz, E., Beavis, A., Barwick, H., Carthy, I., & Wilkinson, J. (2005). *Secondary teacher workload study report.* Melbourne: Australian Council for Educational Research.

Keown, P., Parker, L., & Tiakiwai, S. (2005). *Values in the New Zealand curriculum: A literature review on values in the curriculum: Report for the Ministry of Education*. Hamilton: Wilf Malcolm Institute of Educational Research, The University of Waikato.

Ministry of Education. (1993). *The New Zealand Curriculum Framework: Te anga marautanga o Aotearoa*. Wellington: Learning Media.

Ministry of Education. (2002). *Curriculum stocktake report*. Wellington: Author.

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

Ministry of Education. (2010). *Ministry of Education position paper: Assessment [schooling sector]*. Wellington: Author.

O'Neill, O. (2002). *A question of trust*. Cambridge: Cambridge University Press.

Robinson, V., Hohepa, M., & Lloyd, C. (2009). *School leadership and student outcomes: Identifying what works and why. Best evidence synthesis iteration [BES]*. Wellington: Ministry of Education.

Rutherford, J. (2005). Key competencies in the New Zealand curriculum development through consultation. *Curriculum Matters, 1*, 209–227.

Rychen, D. (2004). *An overarching conceptual framework for assessing key competences in an international context: Lessons from an interdisciplinary and policy-oriented approach*. Office for Official Publications of the European Communities.
http://www.cedefop.europa.eu/etv/Upload/Projects_Networks/ResearchLab/ResearchReport/BgR1_Rychen.pdf [February, 2008]

Rychen, S., & Salganik, L. (Eds.). (2003). *Key competencies for a successful life and a well-functioning society*. Cambridge, MA: Hogrefe and Huber.

Schagen, S. (in press). *Implementation of the New Zealand curriculum: Synthesis of research and evaluation*. Wellington: Ministry of Education.

Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). *Teacher learning and professional development: BES*. Wellington: Ministry of Education.

Wylie, C. (2010). Focusing leadership on adult learning: The secondary school challenge. *Journal of Educational Leadership, Policy and Practice, 25*(1), 51–66.

Wylie, C., Hipkins, R., & Hodgen, E. (2008). *On the edge of adulthood: Young people's school and out-of-school experiences at 16.* Wellington: Ministry of Education.

Notes on sample and analysis

The principal and teacher samples

All secondary school principals were invited to participate. The overall response rate was 59 percent with returns from 187 of a possible 314 secondary schools. The sample was broadly representative of the diversity of New Zealand's secondary schools. More males (68 percent) than females responded, reflecting gender differences in this role. Most of these principals (94 percent) identified as Pākehā/European. Using a prioritised ethnicity allocation process, six identified as Māori, one principal identified Pasifika affiliations and one identified Asian affiliations. Nearly a quarter (24 percent) of respondents had become principals in the last two years.[19] A further 14 percent had served between three and five years, 35 percent between six and 10 years, 16 percent between 11 and 15 y51000ears, and 10 percent over 15 years.

One in six teachers in state and state-integrated secondary schools was randomly invited to participate. Of the several thousand teacher surveys distributed, 34 percent (n=870) were returned in a sufficiently completed state to be included. Responses came from 204 of the country's 316 state and state-integrated secondary schools, ranging from a single teacher to 14 at the same school. Teacher responses are therefore not necessarily representative of each individual school. However, the responses were largely representative of the distribution of teachers in relation to school characteristics such as socioeconomic composition, size and location, with some under-representation of the largest secondary schools. Other characteristics of the teacher sample are:

- 64 percent were female, which is representative of the gender composition of secondary teachers
- 84 percent identified as Pākehā/European, 7 percent as Māori, 3 percent as Asian and 2 percent as Pasifika or as "New Zealander" respectively
- 43 percent had some management responsibility: 6 percent were senior managers, and 37 percent were middle managers (e.g., curriculum or faculty leaders)
- 6 percent had become teachers in the last two years; 10 percent had served between three and five years; 18 percent between six and 10 years; 14 percent between 11 and 15 years; and 50 percent over 15 years.

The teachers' curriculum areas

Unlike primary teachers, secondary teachers tend to specialise in just one or two of the eight learning areas of NZC. The next table shows that the responding teachers were broadly

---

[19] Up from 17 percent in 2006.

representative of this breadth of learning areas—at least some respondents taught in each of the eight learning areas. As might be expected, given that there are greater numbers of them in each school, more responses were received from teachers in the "core" learning areas (English, mathematics, science, social science) than from those in curriculum areas that are more likely to be optional for students.

Table 27 **Learning areas in which teachers taught most often**

Curriculum area	Teachers (n=870) %
English	24
Social sciences	20
Mathematics	18
Sciences	16
Technology	15
PE/Health	12
The Arts	11
Languages (including 2% Te reo Māori)	7

Numbers add to more than 100 because multiple responses were possible

The majority of teachers worked in just one of these areas (72 percent); a fifth worked in two areas (20 percent) and the remainder mainly said they worked in three to five areas. A small number of responding teachers took other roles in the school: careers and guidance teachers, 6 percent; transition, 4 percent; special education, 3 percent; a combination of business, accounting or economics, 1 percent; religious studies or IT, both also 1 percent.

Data reporting

Basic frequency responses to the Likert-scaled question banks are reported as graphs. All graphs are ordered from items to which there was greatest agreement at the top of the graph, to those where greatest disagreement was found at the bottom of the graph. The vertical midline of all graphs is positioned to the left of the strongest two response categories to highlight the extent of clear support for each statement. Note that some items need to be interpreted in reverse because of the way the statement was written.

Basic frequency data for tick-box responses are reported as tables. Percentages are rounded up or down so numbers may not always add to 100 percent.

Caution is needed when inferring meaning from comparisons of principal and teacher frequencies for matched items. In some schools no, one or a small number of teachers responded, while in some of the larger schools up to 14 teachers responded. Similarly, while trends across time are reported where possible, the composition of the actual sample in the different years of the survey

is likely to have varied. Notwithstanding these caveats, high-level comparisons can indicate differences or trends that bear closer investigation.

Notes on analysis

Selected questions from the survey were cross-tabulated with the focus questions, as was demographic data. Appendix B explains the variables routinely checked for associations with the curriculum questions discussed in the report. Only differences significant at the $p < 0.05$ level are included. At the $p < 0.05$ level, a 1-in-20 chance exists that a difference or relationship as large as that observed could have arisen by chance in random samples. Tests of significance do not imply causal relationships, simply statistical association. Although comparison of proportions alone can seem to show differences, these differences may not be statistically significant once the size of the group is taken into account.

A principal factor analysis was carried out with varimax rotation, using the SAS/STAT® analysis program. For quick reference, the factors used in this report are listed in Appendix C. Through the report, they are introduced in conjunction with the relevant question bank. The strength of the relationships between different factors is also described where this contributes to the overall picture of how NZC has been understood and enacted.

Factors were cross-tabulated with a number of other questions from the surveys. These questions were chosen for their potential to inform the main analysis by checking other possible associations and sometimes alternative explanations. For example, teacher responses could be cross-referenced to their views of their main achievements. Curriculum was just one of a range of contexts canvassed in such questions and the use of factors allowed us to check for high-level associations without getting mired in too much detail.

Cross-tabulated variables

Decile: Schools were divided into three groups: Low (deciles 1 and 2); mid (deciles 3–8); and high (deciles 9 and 10). Past experience shows that this grouping differentiates between the ends of the range more clearly than dividing the schools into groups of three/four deciles (i.e., 1–3, 4–7, 8–10).

Experience: Principals and teachers were divided into three groups by the length of time they had been teaching, or been a principal: 0–2 years; between 3 and 10 years (3–5, 6–10); 11 or more years (11–15, 15+).

Morale: The five survey categories shown in the following table were collapsed into three for cross-tabulation purposes. Because response numbers in the poor or very poor categories were low, combining them with satisfactory responses made for more evenly sized groups.

Table 28 **Principal and teacher self-reported levels of morale**

Overall morale	Principals % (n= 187)	Teachers % (n= 870)
Very good	45	26
Good	40	44
Satisfactory	12	20
Poor	2	6
Very poor	1	1
No response	1	3

Numbers may not add to 100 because of rounding

We checked and found no significant relationship between teacher morale and school decile, subject cluster, gender or teacher experience.

Role in school: Teacher respondents could nominate one of a large number of main roles. Eight groups were created for cross-tabulation purposes. Senior managers (acting principal/deputy principal), head of department/faculty leaders, deans, specialist classroom teachers and careers or guidance counsellors specifically identified this role. Teachers with management units not related to the categories just listed made another group. Classroom teachers identified this role and no other. The "other" category gathered up those who were special education teachers, sports co-ordinators, library staff and so on.

Subject clusters: Teachers nominated their teaching subject(s) from a list provided. They were divided into groups by a process of prioritisation. Those teachers who nominated English and/or

another language made up the first cluster; mathematics and science teachers made up the second cluster; the third cluster grouped teachers of social sciences, arts, commercial subjects and religious education. The fourth cluster was then composed of teachers of a range of subjects often considered more "practical" in their approach, including the various forms of technology, health and/or physical education, careers or transition subjects, guidance and special education teachers. A final (other) category was composed of all others, including those who did not nominate a subject area. English teachers were over-represented amongst the specialist classroom teachers, while mathematics and PE/health teachers were relatively more likely than other teachers to be deans.

The factors used in this report

Table 29 **Teacher factors**

Name of factor	Nature of items in factor	Cronbach's alpha
Community input	4 items related to partnership aspects of curriculum implementation	0.92
NZC-related changes	12 items that estimate the relative importance of a wide range of actions to implementation of NZC	0.82
Key competencies	11 items that describe potential learning experiences with links to key competencies. Teachers rated how strongly they valued them	0.85
Student experiences	11 key competencies items rephrased to focus on likelihood that students have this experience in teachers' classes	0.86
Learning to learn	12 items that describe experiences with learning-to-learn aspects. Teachers rated how often students experience these	0.83
Achievement-focused sharing	5 items that describe how assessment data are used in school to inform teaching and learning. Teachers rated how often this happened in their school	0.84
Teacher co-operation	5 items that describe ways for teachers to work together. Teachers rated how often this happened in their school	0.90
Leadership	16 items that seek personal views of a range of aspects of principal's leadership	0.97
Engaged by professional learning	7 items that seek teachers' views on the relevance of their professional learning, and their ability to act on it in the school context	0.80
Professional learning unhelpful	9 items that seek teachers' views on limitations of professional learning in their school context	0.73

Table 30 **Principal factors**

Name of factor	Nature of items in factor	Cronbach's alpha
Community input	4 items related to partnership aspects of curriculum implementation (subset of implementing curriculum—see below)	0.89
NZC implementation	16 items that estimate the relative importance of a wide range of actions to implementation of NZC	0.82
Principal leadership	10 items related to professional leadership and ability to distribute this across school/BOT etc.	0.73