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Great expectations—

enhancing learning and strengthening teaching in primary schools with diverse student populations through action research

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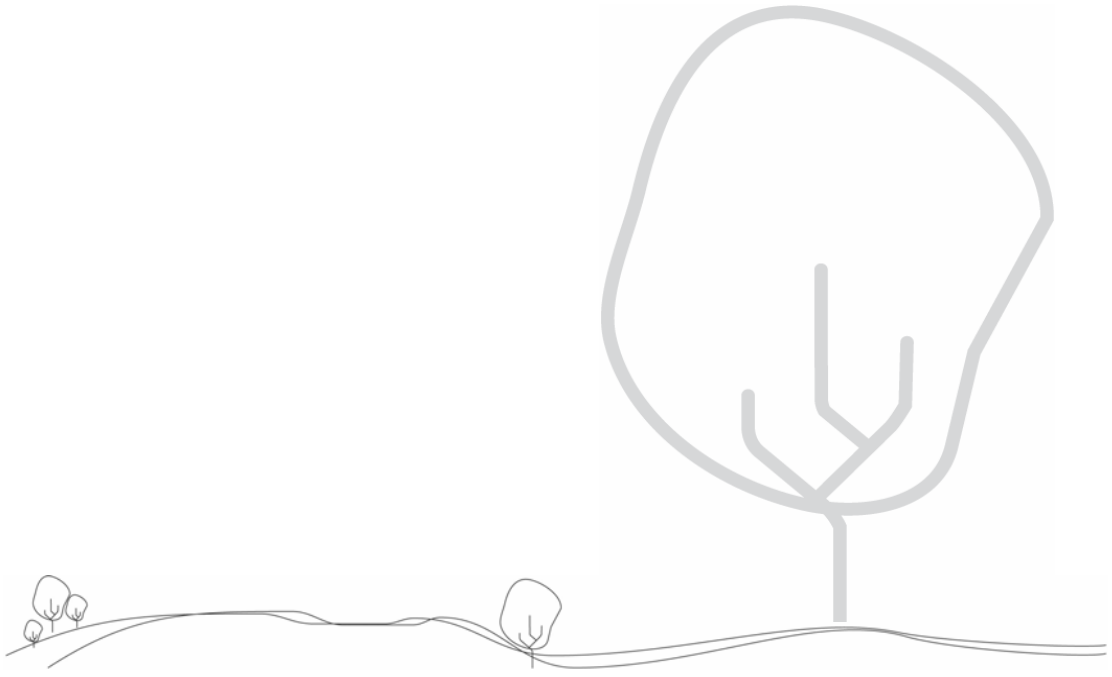

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1. Aims, objectives and research questions

Introduction

This was a Teaching and Learning Research Initiative (TLRI) project, investigating school improvement through school-based action research carried out in 2004 and 2005. Researchers from the University of Waikato (and later, The University of Auckland) worked with teacher-researchers from six primary schools to explore ways of changing the classroom practices of teachers.

It is now widely recognised that more detailed school and classroom research is needed to uncover the complexities of teaching and learning (Ministry of Education, 2002). Nuthall (1999) stated that one of the greatest challenges is to describe what happens when teachers, students and communities work together, in order to understand the relationship between teaching action and learning, expectation and student achievement. Within New Zealand and elsewhere, investigations regarding the impacts of assessment(both formative and for accountability purposes) the use of achievement evidence to inform teaching moves learning styles, leadership impacts and teacher coaching have demonstrated improvements in outcomes for learners. Another factor that is known to be of considerable importance in teaching and learning is teacher expectations (Galton, Hargreaves, Comber, Wall, & Tell, 1999; Timperley & Phillips, 2003). While externally provided professional development has been shown to have an effect on teacher expectations, feelings of self-efficacy, and student achievement (Timperley & Phillips, 2003, for example), the rationale for this study was to investigate how schools themselves could draw on existing research and through their own learning and effort initiate and sustain high expectations and increased student achievement.

Aims of the project and the TLRI priorities

The TLRI aims to build a cumulative body of knowledge that links teaching and learning, enhance the links between educational research and teaching practices as well as between researchers and teachers, and grow research capability and capacity in the areas of teaching and learning. The intention is to achieve these aims through researchers and teachers working in partnerships to undertake research into teaching and learning and to disseminate project findings to the communities of interest (Oliver, 2005). The Great Expectations project sought to add to existing knowledge about school leadership practices and teaching and learning in primary

classrooms and use the new knowledge gained to inform and help teachers and students. Together the teacher-researchers identified factors such as expectations that are linked to improving student achievement and teacher practices within their respective schools. Building the capacity of teachers to reduce inequalities and raise student achievement in schools with diverse student populations was also an important aim of this project. An associated aim was to increase the research capability of the teacher-researchers within each of the participating schools to enhance their research qualifications and experience.

In order to achieve the aims set out above, the research team:

- identified the current achievement of students at each school, especially with respect to literacy and numeracy;
- undertook exploratory investigations of several innovative approaches to improve their teaching;
- analysed the data collected on the basis of categories and criteria developed by the research team;
- shared the findings with the other teachers in each school, between schools and with other schools and interested parties as the project proceeded;
- developed further observational and analysis techniques that contributed to more equal learning outcomes across these schools with diverse student populations; and
- communicated the findings to broader teacher, policy and research audiences.

Research questions

The following research questions guided the project:

- How well are students in each participating school achieving currently? How do we know? What measures are used and how? How do they compare with each other and nationally? Are there some particularly high performing teachers and students within each school? What differences are there between classrooms, and/or between schools? Why might this be the case?
- What expectations are held for students within each school? Are there differences within and between schools? If so, what are these differences and why do expectations differ? Should they differ, and, if so, why and how? What influence do school leaders have on these expectations, and how are high standards achieved?
- What teaching strengthens learning in each of the selected classrooms in each school? What do "expert" teachers do? What is the relationship between teaching and learning? Do successful strategies for improving learning and achievement differ between schools? If so, how, and why? How is leadership implicated?
- How should expectations and teaching change in order to improve learning and achievement consistently throughout classrooms in each school? How can this be achieved?

- What capabilities do teachers and teacher-researchers need to sustain constant improvement strategies within their schools? How is gaining a research qualification implicated in this, if at all?
- How can the findings of this type of research into classroom teaching and learning, and student achievement, be best communicated to a wider audience of professionals, academics, and officials?

2. Research design and methods

The pressure on schools to improve and to raise achievement levels has increased since the restructuring of the education system in the 1990s and is unlikely to abate in the near future. In New Zealand, as elsewhere (Harris, 2002, 2004), education policy is firmly focused on increasing student and school performance. All six schools in the study reported here are focused upon improvement and hold "high" expectations for their students. However, what was not clear at the beginning of this study was what those expectations were and how they might contribute to achievement. Furthermore, as the project got under way and the schools introduced themselves to one another, it became obvious that they were very diverse in a range of ways. Table 1 summarises some of this diversity.

Table 1 **Demographic characteristics of the six schools involved in the Great Expectations project**

	School					
	Epsom Normal	**Fairfield Intermediate**	**Manunui**	**Nawton**	**St John the Evangelist**	**Vardon**
Roll	700	600	150	570	300	400
Location	Large city suburban	Small city suburban	Rural	Small city suburban	Large city suburban	Small city suburban
Decile	10	3	1	2	1	5
School type	Contributing primary	Intermediate	Full primary	Contributing primary	Integrated full primary	Contributing primary
Ethnic composition (%)						
Pākehā	40	50	80	34		59
Māori	1	30		50	4	17
Chinese	30					
Indian	10					
Asian				7		
Pasifika Predominantly Samoan				7	96	
Pākehā/other			20			
Other		20		2		16

Over two years of the project (2004–2005), each of these schools investigated the research questions (above) through action research designed to raise both achievement and expectations. The schools' diversity, as well as the fact that each planned, implemented, and researched its own improvement project, meant that case study methodology (Bassey, 1999; Hill, 2000) provided the research design for the Great Expectations project. We used an overarching conceptual framework (Robertson, Hill, & Earl, 2004) to refine, investigate and report on the research questions in terms of expectations, achievement, teaching, learning, assessment, professional learning communities, and leadership approaches.

The project was designed so that university researchers and teacher-researchers worked together over the two years. In 2004 the teacher-researchers in the six primary schools and the university researchers came together in three meetings during which they designed the conceptual framework, refined the research questions for each of the schools, and gathered and analysed expectation and achievement data as well as information about how the teachers experienced their role as researchers (Robertson & Hill, 2005). A third university researcher joined the project during 2004 to assist some of the schools to investigate numeracy achievement (see Young-Loveridge, 2005). In 2005 the schools pursued their projects far more independently, meeting twice to review progress and planning. In November 2005, partly to investigate the final research question but also to generate enthusiasm among teachers for practitioner research, the final meeting was extended to a symposium to which teacher-researchers nationally were invited and encouraged to share their experiences and findings. The keynote address was given by Professor Lorna Earl, from Toronto. The symposium included workshops led by university researchers involved in the project as well as Robyn Baker (NZCER) and Lorna Earl and 25 presentations by teacher-researchers from throughout New Zealand.

At various points throughout the project, data were gathered from each of the schools by the teacher-researchers . This was in order to:

- assist us to answer the main research questions (listed above); and
- determine to what extent the TLRI aims of adding strategic, research, and practice value to the New Zealand education context; and the partnership we had set out to promote through the research project had been established.

Various data-gathering strategies were used. For example, at the symposia we audio-recorded our group discussions, recorded information on large charts, used a "speed writing" exercise and collated individual school reports. Within each school, the teacher-researchers collected achievement information using assessment instruments such as Assessment Tools for Teaching and Learning (asTTle) tests, Supplementary Tests of Achievement in Reading (STAR) tests, Progressive Achievement Tests and the assessment instruments from the Numeracy Project. In some, observation records of coaching sessions were collected and collated, interviews were conducted, questionnaires used and documentary evidence was examined. In others video recordings of lessons and meetings were made and analysed to investigate the processes under study.

In all of the schools, the procedures approved through the University of Waikato, School of Education Ethics Committee were followed to ensure that the research proceeded in an ethical manner.

Each milestone report summarised progress towards meeting the project outcomes. The research outputs listed in Appendix 1 became vehicles for presenting our detailed analyses and findings. This report summarises these findings.

3. Findings

This section presents the project findings in relation to the initial research questions and in terms of the strategic, research, and practice value of the TLRI. In order to show how each school worked in its own way to investigate the six main research questions outlined in Section 1, a brief case study report from each school is given here. The overall results from the project, as well as findings about the strategic, research, and practice value, are given at the end of the case studies.

The case studies

Case Study 1: Epsom Normal School

Epsom is a decile 10 inner-city school with a roll of 650 students in Years 1–6. It has a culturally diverse student population, the majority of Asian origin. When the team of four teacher-researchers joined the project early in 2004, they did not understand the nature of the project because the principal, who had initiated it in partnership with the University of Waikato researchers, had left the school for a new position. While the Epsom research team believed that it was a good idea to investigate how the student learning meetings held in the school influenced teaching and raised both expectations and achievement, they agreed to be involved because they thought that university researchers would carry out the research. It came as something of a shock when they discovered *they* would be teacher-researchers in the project.

The major research questions for Epsom were:

- How do student learning meetings inform teaching practice to raise expectations and student achievement?
- What is it about teacher practice that has the greatest impact on student learning?

These questions were based upon the beliefs that:

- student achievement is, in large measure, a result of good teaching (Alton-Lee, 2003; Hattie, 2002);
- the school's cultural context and organisation produce the teaching practices that cause student achievement, or lack of it (Hill, 2000);
- in order to raise expectations and improve student achievement, the school needed to work as a professional learning community (Stoll, Fink and Earl, 2003; Timperley and Robinson, 2002); and
- the process is as important as the outcomes.

Improving teaching practices

To investigate the research questions and improve teaching practices in line with their beliefs, the Epsom teachers undertook two full action research cycles during the two-year project. In 2004, student learning meetings focused on school-wide numeracy achievement. Each syndicate met in school time once a term to examine the progress of individual students, discuss students whose progress was not optimal, and plan how they might accelerate that progress as a team. A teacher questionnaire was designed and administered by the teacher-researchers after the meetings in the first school term to evaluate how useful the staff thought these meetings were in achieving their purpose.

The results indicated that, although there was definitely merit in discussing student progress in detail and using this evidence of student learning to drive teaching and take collective responsibility for student outcomes within each syndicate, the student learning meetings could be improved. Minor adjustments were made to the meetings. The numeracy test results at the end of the year revealed significant improvements in student achievement. Consequently, teachers', students' and parents' expectations for numeracy achievement were raised.

Changing the focus of student learning meetings

In 2005, Epsom decided to change the focus of the student learning meetings from numeracy achievement to writing. As a result of the ongoing evaluations of the student learning meetings in 2004 and the developing culture of the school as a professional learning community, all the syndicate leaders were released from classroom teaching on Wednesdays in 2005. The purpose of this expensive organisational decision was to provide time for each leader to work with his or her syndicate to focus on student achievement. Student achievement information about writing (and, latterly, other areas) became the focus for professional learning (Timperley, 2003). Peer observations of classroom practice to assist each other to improve classroom teaching was initiated as a result. Questionnaire feedback towards the end of the second year indicated that:

- syndicate meetings were now student learning meetings rather than for administrative purposes;
- there had been a major deprivatisation of teaching practice within the school;
- trust had been slow to develop, but was critical to the process;
- data analysis was critical for informing practice, rather than assessing compliance;
- there was much greater clarity among teachers about the learning expectations for written language; and
- the information communicated to parents was improved as a result of the in-depth analysis of samples and the discussions during the moderation process.

Professional development

As a result of undertaking the action research project within the Great Expectations framework, the teacher-researchers at Epsom reported that they had developed new understandings about the nature of professional development. They had become absorbed in the action research process of

questioning, planning, implementing, and reflecting, which led to a restructuring of the entire school culture. The changes included:

- the way in which the syndicates operated;
- the nature of the meetings;
- the information given in school reports to parents;
- an increased focus on formative assessment;
- changes in the assessment tools and strategies teachers used;
- changes in teacher appraisal practices;
- a change towards taking collective responsibility for student progress; and
- a new approach to accessing outside expertise and support.

The teachers also reported that they now thought of themselves as teacher-researchers, with action research skills.

Shared focus

Although there were too many variables for the link to be direct, the evidence suggested that increases in student achievement appeared to be a result of a constant school-wide focus on the student progress (or lack of it). In response to the shared data about achievement, programmes and teaching approaches were constantly adjusted to meet the needs of the diverse student population. This shared approach to monitoring the progress of cohorts of students, and working together to assist students where their progress was less than expected, generated a heightened sense of accountability and involvement among the teachers and the students. Although it took time to change to this way of working, the research indicated a ripple effect as the information about achievement was shared.

Where to next?

As a result of undertaking this research, Epsom intends to

- continue to maintain strong links between sharing evidence of achievement and programme planning and teaching;
- further develop the peer-coaching model teachers have been working on to refine teaching practices within the school;
- continue to reflect, check assumptions, and plan improvements based on evidence;
- enhance the professional learning community it has grown and increase the notion of shared responsibility; and
- share these approaches with the local cluster of schools.

Case Study 2: Fairfield Intermediate School

Fairfield is a decile 3 suburban school in a small city, with a roll of around 650 students in Years 7 and 8. About 50 percent of the students are Pākehā New Zealanders, 30 percent are Māori, and 20 percent are from other ethnic groups. One teacher-researcher took responsibility for the Great Expectations investigation, with some assistance from a research assistant employed as part of the

project contract. Initially, the main research question was designed to investigate whether there were any differences in reading comprehension learning outcomes between digital classrooms and mainstream classrooms at this school. The methodology for this used matched pairs of students in digital and mainstream classrooms and measured their performance on asTTle reading tests, the Ravens Progressive Matrix, and a computer skills test. However, in the first year of the study, no differences were found on any of these measures and the research question was revised.

From late 2004 and into 2005, Fairfield explored, and aimed to improve, pedagogical practices in digital classrooms. The study was based on beliefs that:

- there is different pedagogy required in some aspects of a digital classroom compared with a regular classroom (Ainley, Banks, & Fleming, 2002; Bibeau, 2004; Loveless, 2000; Loveless & Ellis, 2001; Loveless, deVoogd, & Bohlin, 2001);
- developing a digital pedagogy is critical—most of the messages students in New Zealand now receive from the media and multimedia sources are global and acultural. Students need to understand the messages behind the message, and how to hang on to their place in society (Anderson, 2001; Batz & Rosenberg, 1999; Everhart & Valenza, 2004; Kranich, 2000) ;
- students need to be able to engage in complex and unpredictable situations in a positive and healthy way, and be resilient, resourceful, and open-minded (March, 2005); and
- the role of the teacher in the digital environment includes informing students of the constraints and limits of the tools they are using and supporting them in learning to use the tools—specifically, to develop discrimination, critical judgement, and the sense of being an analyst in face of the huge quantity of information available to the learner (Page, 1999; Wegerif, Mercer, & Dawes, 1999).

The teacher-researcher also believed that the challenge was to work with teachers and go beyond the theory and into practice, to recognise the very real power of digital technologies in helping students see new relationships, almost simultaneously, between themselves and the world in which they live, simply by providing a vast range of perspectives on issues.

Findings

In 2004, a research assistant (under the supervision of the teacher-researcher) carried out interviews with students and teachers in both digital and mainstream classrooms. The results indicated that:

- digital classrooms had introduced new and exciting ways for teachers and students to teach and to learn;
- the students in digital classrooms expressed high levels of enthusiasm when describing their classroom and their schoolwork;
- teaching and learning in digital classrooms was viewed as an extension of mainstream learning and teaching methods;

- success in implementing digital classrooms seemed largely the result of planning before they were introduced, and targeted professional development (some of it instituted as a result of the action research findings);
- how digital learning is to be integrated into traditional school settings needs careful consideration;
- teachers making the transition need support from school management and targeted professional development;
- care must be taken in deciding how students are selected for inclusion in digital classrooms; and
- innovative ways of providing children with access to modern learning technologies are needed to ensure equitable outcomes for all.

The teacher-researcher also analysed the achievement of children across the school and compared data from digital and mainstream classrooms. The results showed a difference between mainstream and digital students as measured by asTTle reading comprehension and the computer skills assessment. In particular, the digital students showed, on average, a 10-point asTTle Reading Score (aRs) gain over their mainstream peers. This gain was confirmed when school-wide data were also compared. As well, students in the digital rooms made gains of over 10 percent on the computer skills test compared with their mainstream counterparts.

Conclusions

The research found that:

- growth in overall reading comprehension (using asTTle Reading as a measure) was greater in the digital rooms than the mainstream rooms;
- the computer skills of the students in the digital classrooms improved more than those of the students in mainstream rooms;
- teacher pedagogy is different in digital rooms. However, there was little evidence of teachers engaging students in critical thinking that was specifically related to digital information; and
- school wide, students had better attendance in digital classrooms (20 half days absent per year, on average) than students in mainstream rooms (27 half days absent per year, on average), indicating a greater enthusiasm for schooling. Where to next?

As a result of this research and a close analysis of the data, this teacher-researcher is moving on to explore the concept of "knowledge creation" in the digital classroom (Bereiter & Scardamalia, 1997; Fullan, 2002; Hargreaves, 1999; Lipponen, 2000; Rasku-Puttonen, Etelapelto, Lehtonen, Nummila, & Haakkinen, 2004; Scardamalia & Bereiter, 1994, 1996). This has come about because further analysis of data revealed that the digital students were no better at critical thinking than their peers in the mainstream. Given the increased access to almost limitless information, much of it of questionable quality, the researcher expected to see better critical thinking skills in the digital classrooms. The proposed research will seek to understand how students currently create knowledge and new meaning when they have access to digital technology and then focus on improving students' knowledge creation strategies.

Case Study 3: Manunui School

This rural, decile 1 school is situated in a small settlement several kilometres from Taumarunui. The majority of the 150 students are Māori (80 percent) and the rest are mainly Pākehā New Zealanders.

All of the teachers in this school took part in investigating whether:

- peer coaching assisted in transforming reading teaching strategies (particularly in reading comprehension), and
- these changes would impact on students' achievement in reading.

These questions were based upon the belief that excellent teaching is the single most powerful influence on achievement, and that if we wish to improve the achievement of all students we must improve the quality of the teaching they receive (Hattie, 2002). The lead teacher-researcher had also carried out a literature review that suggested coaching could be the most significant way of changing teaching practices within a school (West-Burnham & O'Sullivan, 1998). In this model of professional development the coach (defined as a horse-drawn carriage that conveys a valued person from where he or she was to where he or she wants to be) draws "out efforts and understandings which the individual might not access easily on his or her own" (Senge, Kleiner, Roberts, Ross, & Smith, 1994). The process involved each teacher working with a peer to set goals for improved student achievement and enhanced teaching practices. Peer observations were then undertaken, followed by descriptive feedback, reflective questioning, self evaluation, and evaluative feedback.

To investigate the research questions and improve teaching practices in line with their beliefs, the teachers at Manunui began by establishing the reading comprehension and reading levels of every child at the school. Over the two years of the project, they looked, as a group, at feedback and questioning in their school and in the literature, undertook readings about the coaching process, learnt the coaching skills, and practised them. They also read widely about the nature of reading comprehension and the teaching of reading. Peer coaching was undertaken in pairs. Periodically, the teachers engaged in reflective interviews to evaluate how the coaching was influencing their teaching. Data from these interviews were recorded and analysed, and evidence of student achievement was gathered.

Findings

Student achievement data in reading gathered at the end of the second year of the project found a stanine increase of 0.86 across the school from March to November.

This incorporated a 1.2 stanine increase for Years 7–8 students. In March, only one student achieved at stanine 9. In November, 4 students (19 percent of the Years 7–8 total for the school) achieved at this level, compared with a national average of 4 percent.

The teachers reported that the coaching was "an incredibly powerful process" in changing their practices. As one teacher stated, "we just love this process. It really works for us". As well as

observing each other's teaching, the teachers made videos of their reflective questioning sessions. They reported that they found these to be really helpful in guiding the coaching. As one teacher stated, "seeing the video of the reflective questioning sessions helped me to ask better questions". The findings revealed that coaching appeared to be more successful at changing teachers' practices when the teachers themselves recognised the need for change. When this was the case, the change process became owned and driven by the teachers. At Manunui that coaching process became an integral aspect of the school-wide professional development process. High levels of trust between staff members were a necessary condition for the coaching to be successful.

The role of the facilitator was also found to be crucial in terms of managing the power relationships, addressing power issues, ensuring the process was "safe", and taking the realities of the teachers' work context into account as the coaching proceeded. The data-gathering processes undertaken for the purposes of the research project significantly enhanced the effectiveness of the professional development. Research and professional development became inextricably intertwined to produce positive results.

Case Study 4: Nawton School

Nawton, a decile 2 contributing school in Hamilton, has a student population that is 50 percent Māori, 34 percent Pākehā, 7 percent from a range of Pacific Islands backgrounds, 7 percent Asian in origin, and 2 percent from a range of other ethnic backgrounds. As at Manunui, teachers at Nawton had decided to investigate how peer coaching could be used to develop their pedagogy, improve students' achievement, and raise expectations. Their main aims were to develop a process that would:

- utilise the skills of the staff';
- empower teachers;
- develop "teacher talk";
- meet the individual learning needs of the teachers; and
- improve the teaching and learning in the school.

From the writing of Holmes (2003), the teacher-researchers at Nawton believed that coaching needed to be task oriented—in this case, towards improving student learning outcomes in the core curriculum (with particular attention to reading), and also using learning intentions to focus lessons. They knew that they would need to learn how to become effective teacher coaches in the context of their own school environment, and believed that for the process to be successful they needed to engage with the existing beliefs, attitudes, and knowledge of the teachers being coached. They began by using collaborative storying (Bishop, 1996). This process enabled the coach to understand what a teacher wished to improve, and how such changes fitted within his or her existing knowledge, values, and attitudes to teaching practices. The coach then made classroom observations and provided non-evaluative feedback on the lesson (Gottesman, 2000) followed by reflective questioning. As Bishop, Berryman, and Richardson found, "effective teachers could clearly explain what they were doing in the classroom and why they were doing it" (2001, p. 49). Evaluative feedback concluded the sequence.

Baseline data about student achievement were gathered at the beginning of each of the two major cycles of action research (at the beginning of 2004 and 2005). This information, along with the assessment information gathered at the end of each year, was shared and discussed by syndicates, teachers, and their coaches. The results showed clear gains in progress in reading, classroom management, and the use of learning intentions, particularly in the rooms involved in the coaching programme.

Findings

The findings from the Nawton action research project indicated that the coaching process built an environment of trust and shared responsibility for improving both teaching practices and student achievement. In addition, the teacher-researchers reported that the coaching innovations led to:

- deprivatisation— "removing the classroom walls";
- an increased desire to be involved in changing pedagogy;
- enhanced professional learning; and
- increased reflection on practice.

The innovations also encouraged the emergence of teacher leadership, developed the participants' beliefs and self-confidence in their own practice, and encouraged others to participate in the programme.

Where to next?

The school is continuing with the coaching programme and is looking at ways to sustain the programme in the years ahead.

Case Study 5: St John the Evangelist School

St John's is a decile 1 full primary school in South Auckland. Virtually all of the students are from Pasifika backgrounds, predominantly Samoan. There are no Pākehā students at this school. Most of the students do not speak English at home. Over the last few years this school has been involved in professional development projects designed to improve students' achievement and run by outside agencies. In 2003, when the TLRI was advertised, the principal and her two deputy principals decided that they would like to conduct a small research project to improve learning outcomes and expectations in reading comprehension. They approached the University of Waikato researchers in order to achieve this goal.

The main research question for their investigation was: How, if at all, does effective questioning improve reading comprehension? This question was derived from the teacher-researchers' beliefs that questioning is important because it enhances and develops students' thinking ability. St John's decided to use Bloom's taxonomy of levels of thinking and questioning as a guide. A generic planning format for teaching reading was introduced school wide and teachers focused their teaching on particular genres each week. Each teacher kept a reading folder with planning, including the questions they had prepared for teaching reading comprehension.

At the beginning of the project St John's measured reading progress mainly by running records and the diagnostic survey (Clay, 1993) in the junior school, as well as reading comprehension tests designed by the school. Progressive Achievement Tests (PATs) and asTTle reading comprehension tests were also administered to the middle and senior classes at the beginning of 2004. The teacher-researchers used these as a baseline for their research and shared these standardised results with the rest of the teachers. These results provided the basis for setting expectations for reading comprehension for each year level for both years. By the beginning of 2005 it was decided to use the asTTle reading comprehension tests as the main way of determining progress in reading comprehension. At the end of each year the asTTle tests (and running records in the junior school) were administered again. In order to increase the reliability of the results, the research team administered, collated, and analysed the results. Although they took part in the decisions over planning and setting achievement expectations, the teachers were not involved in the administration of the tests.

Findings

In 2004 the results were initially disappointing. However, after it was discovered that the post-tests were testing different aspects of reading comprehension than had been assessed in February, new post-tests were organised. The results of these showed that there had been improvements. In 2005 the results were far better—significant improvements were made at all levels of the school. When compared against both the national norms and "schools like us", all cohorts had moved from below the national performance average to equalling or exceeding it.

As a result of taking part in this project, the teachers at St John's learnt a great deal about researching their own practice, using standardised assessment tools to gather evidence about learning, and working together as a professional learning community to achieve significant learning gains for their students. The report included several recommendations on improving professional development at the school, continuing to use nationally standardised tests to monitor achievement, and growing the action cycle of improving teaching practice. St John's also emphasised the need for the teachers to continue to believe that "anyone can learn, irrespective of colour, ethnicity, background, age, or socioeconomic situation".

Case Study 6: Vardon School

Vardon is a decile 5 contributing school in Hamilton with a roll of approximately 400 students. Most of them are Pākehā, 17 percent are Māori, and the rest belong to a range of other ethnic groups. Before the beginning of this project, several teachers had implemented learning logs to encourage the children in their classes to become more reflective about their learning. The deputy principal, who became the lead teacher-researcher in the Great Expectations project, had begun investigating the success of these learning logs. The main research question investigated at Vardon was: In what ways do learning logs impact on the student–teacher relationships and achievement in the primary school classroom?

The rationale for this question was that the learning logs were designed to enhance student achievement through increasing formative assessment in every classroom at the school. Furthermore, the project aimed to formalise a process of collaborative professional development through action research. The first action research cycle began in 2003 [before the start of the Great Expectations project] and continued in 2004 and 2005, researching the implementation of the learning logs in three classrooms. The effects on 12 target students were studied during this time. Data were gathered through semi-structured interviews and focused discussion groups. A grounded-theory approach to data analysis was used (Allan, 2005).

Initial findings

The findings in the first cycle indicated that learning logs were helpful, but not sufficiently so to accelerate the formative interactions necessary to meet the achievement targets set. In particular, the findings highlighted the complexity for both students and teachers in establishing a student-centred learning environment. It was not as straightforward as implementing a learning tool (such as a learning log) to establish successful collaborative learning relationships between teachers and students. This finding concurred with Black and Wiliam's (1998) belief that the "improvement of formative assessment cannot be a simple matter" (p. 146). As Earl (2003) highlighted, the complexity in developing formative assessment procedures lies in teachers fully understanding how the relationship between teaching, learning, and assessment impacts on the balance of power in the teacher–student learning relationship. This type of impact was certainly what the participants experienced during this research project. For the teachers, the research process raised their awareness of both the positive and negative impacts of teaching and learning pedagogy on learners as they focused on developing student skills in self-regulation. Further to this, the teachers in this action research project realised that the successful and ongoing development of the learning logs would require a lot more of their time to investigate their own practices in light of contemporary teaching and learning theory. They recognised that the action research process that they had been involved in was essential for critical thinking about their practices. As Black and Wiliam (1998, p. 146) found in their research, this project also found that the development of effective formative assessment practices is a "relatively slow one and takes place through sustained programs of professional development and support" as teachers develop their understanding of, and practices for, formative assessment procedures. This finding obviously had implications for Vardon's leadership in planning an effective professional learning programme that included a focus on teaching and learning pedagogy within the context of enhancing formative assessment procedures and student self-regulation in order to improve student achievement.

Peer coaching

Consequently, in the second year of the project, Vardon decided to adopt a professional learning model of peer coaching as a means to formalising a process for teachers to work together (Robertson, 1997). The management team felt that this formal structure would provide the framework and necessary skill development for teachers to successfully engage in a "disciplined

inquiry" (Fullan, 2003, p. 7) of their practice. The management team believed that unless the desired teaching practices that promote formative assessment and student self-regulation could be "uncovered" and made explicit through a process of inquiry, it would be difficult for teachers to adopt changes to their practices. It is expected that over time the teachers at Vardon School will experience the benefits of the type of dialogue that Southworth (2000) considers teachers need to engage in if they are committed to improving student achievement. In the initial stages of implementing peer coaching at Vardon in 2005, it certainly became evident that educational conversations focusing strongly on the link between student achievement and teacher practices were becoming more frequent among the teachers.

Where to next?

As a result of the findings from both years of the research project undertaken at Vardon, as well as the professional interactions with colleagues involved in the Great Expectations project, the management team has committed to promoting a coaching model of professional learning as a means for teachers to investigate and improve their practices in 2006. Further to this, the team understands that its own "rich insights into the learning–teaching process" will need to be developed in order to support teachers with "timely and appropriate assistance" (Stoll, Fink, & Earl, 2003, p. 104) as part of their professional learning process. Consequently, the team believes that it has both a moral and ethical responsibility to ensure that it undertakes its own professional learning to ensure that as a group it has a deep understanding of teaching and learning, so that both the support it provides teachers and the organisational procedures it develops will be well considered and sufficiently resourced to enhance teacher and student learning.

The management team's critical reflections suggest the development over the next 3–5 years of a framework of three interlinked elements:

- enhanced opportunities for professional dialogue—"a learning community";
- deeper and more explicit use of student achievement data to inform learning and teaching—"productive pedagogies"; and
- greater provision for learners to learn better—"4 Rs: resiliency, relationships, resourcefulness, and reflection".

Eleven leadership practices were identified that would advance these areas of focus:

- conducting dialogue focused on the goal of raising student achievement;
- building leadership capacity in individuals and in teams;
- enhancing professional relationships through dialogue;
- continually updating professional knowledge;
- continually updating professional skills base;
- providing opportunities for staff learning within a global context;
- promoting home–school, school–community partnerships;
- using student achievement data to inform teaching practice;
- continually focusing on how teaching can raise student achievement;

- changing pedagogical strategies when students are not responding to current teaching practice—"explore productive pedagogies"; and
- implementing ways of helping students to learn better, rather than helping them to become better learners—"4 Rs" (Claxton, 2002, p. 13).

Each of these leadership practices is similarly part of an interwoven, overarching strategy leading to school reform, and it is intended to provide opportunities for staff to lead specific initiatives, through a distributive leadership model. Building leadership capacity means providing focused opportunities for all staff to be leaders. Enhanced professional dialogue requires a school culture that values, respects, and trusts each individual, hears the hidden narratives, and shares power between and among learners—both teachers and students.

All of these leadership practices have implications for the employment of new staff, professional standards reviews, programmes of support and guidance, and—most importantly—staff professional learning opportunities. As educators in a modern world we understand that the field of education is now very much globalised. It therefore seems imperative to look beyond an individual school to search for meaning, provide questions, and look for possible answers. The Board of Trustees for Vardon School has approved funding for a classroom teacher to travel and work in a school in the United Kingdom in 2006. Local, national and international networking will, we consider, provide a catalyst for internal staff capacity and capability building. It is through this capacity building that children will benefit.

Overall findings of the project

As indicated earlier in this report, the project was guided by six main research questions. The main findings are reported under each of these. The final section of the report sets out the results of the project in respect of the aims of the TLRI, namely: building capacity and capability, strategic value, research value, and practice value.

Achievement at the case study schools

The first research question asked about the achievement of students in each school. Rather than a single question, this became a group of related questions that included:

- How well are students in each participating school achieving currently?
- How do we know?
- What measures are used, and how?
- How do they compare with each other and nationally?
- Are there some particularly high performing teachers and students within each school?
- What differences are there between classrooms, and/or between schools? Why might this be the case?

We asked this "cluster" of questions, rather than just one, because discussions early in the proposal and planning stage of the project had confirmed for us the complexity and "contestedness" of both the nature and the measurement of achievement. As we reported in our first published paper from this project (Hill & Robertson, 2004), although all of the schools set academic expectations and had set some "targets", these were not the only expectations that drove their practice. Each school also had a broader set of expectations for their students, encompassing a set of values and goals that were articulated differently in each case.

In response to the set of questions about achievement, the schools all reported that they had been keeping track of student achievement in both English (mainly in reading and writing) and mathematics (mainly, but not exclusively, in numeracy). By the end of the second year of the project (2005), all of the schools were using nationally standardised tools and instruments to measure performance in these subjects. At the beginning of this project some had been using school-prepared instruments; these schools reported using external tools a year after the study began. For example, in reading, the school that had set a bank of school-based comprehension tests in early 2004 now reported using only PATs and asTTle assessments with their Years 4–8 students. This school reported that it gets sufficient information from the use of fewer tests and can rely on the results of these tests better than on the school-made ones. They also explained that because the achievements of their students had improved they were now not as anxious about what the results of a nationally standardised test might reveal.

During 2005 each school at least doubled the number of teachers involved in its project. In several cases the entire school took part. Several also began to track achievement in a range of areas and changed the culture of their school to sharpen the focus on learning and achievement. Rather than report increases in achievement for each school across several measures in several curriculum aspects, it is sufficient to say here that all achieved gains in learning and progress. Indications of this are included in the case studies. The NZARE presentations made by each of the schools also included details in some curriculum areas.

Expectations held for students at each of the schools

The second group of questions clustered around the notion of teachers' expectations for students in their respective schools. These included:

- What expectations are held for students within each school?
- Are there differences within and between schools? If so, what are these differences and why do expectations differ?
- Should they differ, and, if so, why, and how?
- What influence do school leaders have on these expectations and how they are achieved?

Since the 1990s restructuring in education, the pressure on schools to improve and to raise achievement has increased and is unlikely to abate in the near future. In New Zealand, as elsewhere (Harris, 2002, 2004), education policy is focused firmly on increasing student and school performance. All six schools in the study reported here are focused upon improvement and

hold "high" expectations for their students. However, what was not clear at the beginning of this study was what those expectations were, and how they might contribute to achievement. Furthermore, as the project got under way and the schools introduced themselves to one another, it became obvious that as well as being very diverse in a number of ways (summarised in Table 1), there were large differences between (and sometimes within) schools in the assessment instruments they used, how student achievement was measured, and how this was reported. Interestingly, however, all the schools had set "targets" in terms of what they expected students to achieve and were reporting against these, since they were combining the Ministry of Education Planning and Reporting requirements (Ministry of Education, 2002) with their school achievement monitoring. The targets were, in essence, the schools' academic expectations of special focus for that year and were phrased either as an expectation (for example, a certain percentage of children reading at or above their chronological age level), or a stanine (where they used tests that provided these), or both.

In each school the focus was on one or two major targets annually. In contrast to anecdotal information that suggests some schools in New Zealand are setting a very large number of targets, these six schools had each targeted a priority area. These priority areas were chosen each year by the staff (and the boards of trustees) on the basis of comparison of data collected on student achievement with national (and other) norms. One school, for example, which investigated the use of student learning meetings to improve expectations and achievement, targeted numeracy achievement across the school. This dovetailed with both national and local professional development initiatives and provided information on a regular basis enabling teachers to see and discuss problem areas and make plans to improve their teaching throughout the year.

Although all of the schools had set academic expectations, it is important to emphasise that these are not the only expectations that drive their practice. Each school also indicated a broader set of expectations for their students, encompassing a set of values and goals, but articulated differently in each case. There is not room in this report to spell out all of these expectations, but we include one example because it shows how expectations tend to flow from the particular values held within a school. At this school, about 80 percent of the students are Māori. It is a decile 1 school in a rural area. The school places an emphasis on preparing its students for lifelong learning and to succeed as citizens in New Zealand society. One part of achieving this expectation has been to construct a graduate profile for students, to be achieved by the end of Year 8. This profile begins:

> Ideally, what would a student at our school "look like" when he/she leaves in Year 8?
>
> He/she would be:
>
> - socially confident
> - a confident learner
> - confident with personal relationships
> - confident about the future
> - personally confident
> - emotionally confident

- Confidently maintains personal safety
- Confidently skilful

The school has then described what each of these qualities means in practice. For example, in being "socially confident", a student would:

> be comfortable greeting a variety of people in the community
>
> be able to introduce themselves appropriately
>
> be able to speak with confidence believing that what he/she has to say is of value and that people will listen.
>
> be able to expresses him/herself freely though appropriately
>
> be able to use non-verbal communication effectively
>
> not shuffle when speaking to people
>
> be able to respond appropriately in a variety of social and cultural settings
>
> maintain personal integrity in all social situations
>
> have a sense of fun
>
> show leadership skills when appropriate
>
> see service to society as important

Holding such an agreed set of expectations as a school community, this school set out to investigate how feedback, questioning, and the development of a professional learning community assisted it to bring its profile to fruition. The indicators within the profile clearly link to the characteristics of high-quality teaching (Harris, 2002; Alton-Lee, 2003) and provided a clear set of descriptors against which teachers gathered information, investigated progress, changed teaching practice, and reported on progress and achievement. These expectations are part of a broader conception of attributes needed to prepare for life in the 21st century.

> It is about creating a climate or a culture in the classroom—and in the school more widely-that systematically cultivates habits and attitudes that enable young people to face difficulty and uncertainty calmly, confidently and creatively. (Claxton, 2002, p. 3)

All of the schools in this project identified and clarified the expectations they held for their students during the two years of this project. For some this meant an intensified focus on curriculum achievement in particular aspects while for others, such as that exemplified above, the focus was broader. To varying extents, each school adjusted its expectations based on the results of assessments they carried out to monitor the progress towards their targets and goals. Changes in expectations clearly indicated how successful each school had been in strengthening and improving learning.

Strengthening teaching and improving learning

This group of questions set out to investigate what factors schools changed in order to improve their practice and enhance learning. They included:

- What teaching strengthens learning in each of the selected classrooms in each school?
- What do "expert" teachers do?
- What is the relationship between teaching and learning?
- Do successful strategies for improving learning and achievement differ between schools? If so, how and why?
- How is leadership implicated?

It is difficult to summarise each school's response, as this differed for each teacher within each school, and for each teacher over the two years of the project. But some patterns of useful approaches emerged, which can be summarised as:

- fostering an attitude and habit of using evidence of learning to guide further teaching;
- regarding assessment as being mainly *for* learning rather than *of* learning;
- building trust among teaching colleagues and deprivatising practice;
- using coaching techniques to assist peers to change to practices more productive of learning and achievement;
- building knowledge about what students need to learn, and how such learning occurs and develops;
- involving the students in the learning and assessment *for* learning processes;
- aligning school management practices (such as teacher appraisal, reporting to parents, meeting agendas, etc.) with improving learning and achievement;
- supporting and resourcing the above adequately;
- monitoring the results of teaching approaches and innovations through teacher research; and
- continuously modifying and improving practices where necessary.

School leadership was essential to the success of the innovations in each school. When the principal was involved in motivating, leading, supporting, and resourcing changes to improve the learning outcomes, change happened fairly rapidly and tended to produce a consistent improvement in learning across the school. When the principal was not involved, or simply gave tacit approval, less change and improvement resulted.

Because this project focused on individual case studies and did not involve a large-scale experimental design, it is not possible to generalise from these findings. However, as Bassey (1999) points out, our findings are more in the line of "fuzzy generalizations" tested through overlapping cycles of action research within each case studied. These "fuzzy generalizations" resonate with the findings of other New Zealand researchers (for example, Alton-Lee, 2003; Timperley and Parr, 2004) and do indicate that schools are able to use research evidence to initiate and sustain changes in teaching that enhance learning and achievement.

Changing expectations and improving teaching and learning.

The questions in this cluster looked at how schools went about changing their practices, with a focus on improving learning and teaching. They included:

- How should expectations and teaching change to improve learning and achievement consistently throughout classrooms in each school?
- How can this be achieved?

As can be seen from the case study results in this report, every school used the action research process to effect change. In some schools this was restricted to a group of classes within the school (e.g., the digital classes at Fairfield Intermediate), while at others the whole school was either involved from the outset or came on board during the project. In either case, the investigations at each of the schools set out to elicit the expectations for achievement (across a range of areas of learning, as explained above) and set up school-wide expectations that were based on national data where possible. These expectations were made explicit and shared frequently between the teachers, with and between the students, and with parents, caregivers, and the community.

This approach to setting expectations and regularly sharing the progress of individual students became "how we do things around here" in most of the schools during the course of this project. Several of the schools, in addition to generating expectations and sharing achievement and progress communally, changed their appraisal and performance management practices, school reports, the way they reported to the board of trustees, and other organisational features in order to put the focus on learning and achievement back into every facet of schooling. To support this endeavour one school decided to change the words it used. For example, "work" (as in "schoolwork") was changed to "learning", and the effect of this change on both teachers and students was monitored as part of the school's research

As the case studies above indicate, several of the schools employed coaching techniques to change teaching practices. Coupled with ongoing professional development and teacher reading, coaching techniques that included peer observations of teaching, non-evaluative feedback, reflective questioning, and evaluative feedback assisted teachers to use their expectations and pedagogical knowledge to change their teaching practices and expectations for their students over time.

The capabilities required to effect constant improvement

To investigate this aspect we posed questions that included:

- What capabilities do teachers and teacher-researchers need to sustain constant improvement strategies within their schools?
- How is gaining a research qualification implicated in this, if at all?

As indicated earlier, teacher conceptions at the beginning of the project about what the research aspects of the project would require of them varied considerably. Some were already undertaking thesis research, while others were co-opted as researchers with very little warning. Some believed that they would be the participants and the university researchers would "investigate" their practice. Shortly after the first symposium in 2004, however, each school generated its own specific research questions within the conceptual framework provided by the project team. As the research continued, several capabilities emerged as important for sustaining constant improvement strategies. These included:

- using assessment tools in valid and reliable ways;
- understanding and using achievement data to prompt teacher change;
- understanding the action research process; and
- designing, implementing and modifying research methods such as questionnaires, interviews and focus groups;
- analysing results and implementing change schoolwide.

Critique from peers acting as critical friends and the support of the university researchers and research assistants were also important factors in sustaining the change process.

At the beginning of this project four of the teacher-researchers were actively involved in completing dissertations or theses for research degrees. By the end of 2005, two had completed their Master's degrees, two were enrolled for doctorates in education and four others had begun research aspects of Master's degrees. Most, but not all, of the theses and dissertations were related to the Great Expectations project. The research assistant employed to assist teachers to collect and analyse data also become interested, and completed her Master of Social Science thesis in relation to the Great Expectations project as well.

Results from the project indicated that undertaking a research degree concurrently with investigating the impact of changed practices within a school context benefited change and school improvement. The teachers indicated that study connected them with a wide range of relevant research findings, provided motivation and support for change, enhanced their writing skills, introduced them to a range of teaching innovations and research strategies and methodologies that they otherwise may have been unaware of, and increased their personal commitment to the research process.

Communicating the results of teacher research

The final cluster of research questions focused on disseminating the results to interested parties. They included:

- How can the findings of research into classroom teaching and learning, and student achievement, be best communicated to a wider audience of professionals as well as academics and officials?

A range of publications, presentations, and events was produced throughout the project to communicate the results of this project to a wider audience (see the list of publications resulting from this project in Appendix 1). In 2004, in order to build capacity and capability, and because of ethical issues, publications were mainly limited to journal articles and conference papers written by the university researchers, with input and critique provided by the teacher-researchers. But from the beginning of 2005 several of the teacher-researchers attended conferences (local, national, and international) to present papers jointly or on their own projects; two completed Master's theses; two had articles published in the *New Zealand Journal of Educational Leadership*; and every school presented papers at NZARE as well as at a teacher-researcher symposium (the fifth symposium in this project, planned and run by the project team on 3 November).

The teacher-researcher symposium was held at the University of Waikato. At the beginning of 2005 the teacher-researchers themselves suggested turning the fifth contract symposium into an open event as a way of generating discussion about teacher research and sharing findings among teacher-researchers. Over 100 teacher-researchers attended and 25 papers were presented by teachers about their research. Some extra funding was obtained in the form of sponsorship from the TLRI, the Wilf Malcolm Institute for Educational Research, and the Educational Leadership Centre at the University of Waikato. The Dean of the School of Education at the University of Waikato, the Director of NZCER, and the Director of the Wilf Malcolm Institute for Educational Research opened the event. A keynote address by Professor Lorna Earl from Toronto began the day's proceedings, followed by five research workshops and the twenty-five presentations by the teacher-researchers.

An exploratory approach was used to investigate the success of the dissemination strategies. Conversations, interviews, and other feedback indicated that each type of dissemination was useful. The teacher research symposium and the NZARE presentations were rated most highly by the teacher-researchers themselves as ways of building their research presentation capabilities. School initiatives, including meetings with other neighbouring schools to share research processes and results, were found to be an effective way of communicating results locally, along with other less formal interactions. For the university researchers, papers in refereed journals and quality-assured conference proceedings were most valued and useful. For those enrolled in qualifications, the successful completion of their theses and consequent gaining of a qualification were also counted as the most productive in capability and capacity building.

In conclusion, the production and presentation of a wide and varied range of outputs increased the chances of disseminating the results of this project to the wide audiences we were trying to reach and influence. Rather than restricting dissemination of teacher research to just one or two audiences (for example, other teachers and schools, or policy makers), layering and interweaving the school projects with research degree qualifications, the work of other national and international researchers, and the larger population of teacher-researchers by means of the November symposium, deepened and enriched the communications with all potential audiences.

Issues arising from the findings

Ethical approval and issues

Ethical approval to carry out the research in schools was gained from the University of Waikato School of Education's ethics committee. The (approved) application formed the basis for the conduct of the research in each of the schools and for the project as a whole, but throughout the project ethical challenges repeatedly emerged. Some of the ethical questions that were debated and resolved during the project were:

- Is this "research" or "teaching"?
- Whose informed consent is necessary? Advisable?
- How should this be obtained?
- Will teachers' and students' (and others') data be reported anonymously or will there be a chance they could be identified? If so, how should they be informed about this?
- Will it be written up? Published? If so, by whom?
- Whose name should go on the report? Why?
- If teacher-researchers' names go on the published papers, how is confidentiality to be maintained for the rest of the teachers?
- Is there a conflict of interest? If so, how do we solve it?
- Can the participants withdraw their information? If so, when, and how?
- Will the students' marks/grades be affected? If so, how? How would we know?
- Will participants be photographed, videoed, taped? If so, is this for the research project, or is it part of professional development? Or for teaching and learning purposes? To what extent is informed consent necessary?
- Are there cultural or translation issues involved? If so, what are they? And what should we do about such issues?
- Will the school read the report before it is published? Who will read it? Who will approve it?
- What about presenting at conferences, can we show photos of the schools? Teachers? Students? Samples of students' work?

Often the issues were resolved through answering these questions, but at times the teacher-researchers drew on the advice of the university researchers and others from their schools. The guidelines provided by the university ethics committee also assisted in determining how some of the issues should be resolved.

There were times, however, where the notions of partnership between the university and the schools suffered due to the ethical requirements. For example, during 2004 all the conference papers and articles listed only the university researchers' names as authors, because including the teacher-researchers would have revealed the schools at which they taught and, consequently, removed the confidentiality the teachers had been assured. In 2005, when teacher-researchers from every school presented papers at the New Zealand Association for Research in Education conference in Dunedin, it was necessary for them to gain informed consent from the staff at their respective schools. While this example of an ethical challenge may appear uncomplicated, in

practice it took time and negotiation to work through it over the duration of the project, because of the large numbers of teachers involved, the nature of the project in each school, and the desire for equality in the partnership arrangements.

Assessment issues

An aspect that was not anticipated before the project began was that the teachers assessment skills and knowledge might compromise their ability to undertake the research aspect of this project. In practice, many of the teachers needed assistance and support with assessment in order to measure the progress of their students, interpret the assessment evidence they needed to investigate their questions and make judgements about the effectiveness of their interventions. All the teachers were not challenged by the assessment aspects to the same extent. Some found difficulty with aspects such as the purpose and use of particular tools while others could choose the right assessment tools for the job but struck problems with technical aspects such as computer test generation, interpretation of results and communicating findings appropriately to particular audiences.

Strategic value: Ngā hua rautaki

As stated in the request for proposals for the TLRI, projects need to align with current and future priorities for teaching and learning within and across the early childhood, school, and tertiary sectors, in order to raise educational achievement.

Projects need to address one or more of the following themes:

- reducing inequalities;
- addressing diversity;
- understanding the processes of teaching and learning; and
- exploring future possibilities.

This project addressed all of these themes to differing degrees within each of the schools and in terms of the overall findings. In particular, this project addressed "understanding the processes of teaching and learning". Through their contextually designed projects and with the help of the conceptual framework, each school spent two years gathering evidence of achievement and learning, mining this data for patterns of achievement, working as professional learning communities (also called quality learning circles, or student learning meetings), observing and critiquing their practice and making changes to strengthen teaching, improve learning, and raise expectations. Each of the case studies as well as the overall findings explains how learning and teaching practices were examined and improved.

There was considerable diversity among the students within the participating schools (as shown in Table 1). "Addressing diversity" and "reducing inequalities" took place in each school as the project progressed. While inequalities were addressed at each school, three examples can be highlighted here. At St John's, reading comprehension increased significantly for all year groups above Year 4 to at or above the national average for the aspects taught and tested. At Fairfield

Intermediate, special efforts were introduced to ensure that digital classrooms were available for all Year 8 students, not just those students who could pay to participate. And at Manunui School (decile 1, over 95 percent Māori) the teachers managed to raise achievement to national averages or above for nearly all of its students in several curriculum areas.

In terms of "exploring future possibilities", the expansion of learning in digital classrooms, the growing enthusiasm of participating teachers to continue to research their own practice for improvement, and the commitment by each school to continue to use standardised assessment tools to provide reliable evidence about student achievement and learning where appropriate, confirm that this project achieved its objectives in terms of the strategic value.

Through the university–practitioner partnerships developed in this project the teachers became more and more self-sufficient in analysing and using achievement information for their teaching. They learnt new ways of inquiring into their own practice and now employ peer observation, videoing, and coaching for improvement. Statements gathered at the end of the project demonstrate the commitment of these teachers to sustain and grow both their new ways of operating as teachers and their research-based enquiry into their own practice. These results mirror the findings presented in other contemporary New Zealand practitioner research reports (for example, Robinson & Lai, 2006) as well as the international literature (for example, Harris, 2002; MacGilchrist, Myers, & Reed, 2004).

Practice value: Ngā hua ritenga

Principle Five of the TLRI states that the TLRI will recognise the central role of the teacher in learning. Principle Six states that the research projects within the TLRI will be undertaken as a partnership between researchers and practitioners. As demonstrated in this report and throughout the two years of the project, the teacher-researchers and the university researchers worked together to plan, implement, research, and report their progress. This approach demonstrated Timperley and Robinson's notion of partnership, in which each individual accepts some level of responsibility for the overall task and the team establishes processes that "promote learning, mutual accountability and shared power over the relevant decisions" (2002, p. 15) that must be made. This was not always easy to accomplish but was sustained to the extent that, by the end of the project, every school sent representatives to both the final symposium and the NZARE conference to present a paper. There were substantial benefits for the schools in having their teachers become researchers of their own practice, including increased commitment to the research, changes in school-wide culture and practice, raised expectations for learning and achievement, and new skills and knowledge about the professional development and learning of teachers. Benefits of the partnership aspect of this research included:

- trying different ways of teaching;
- learning to work as researchers as well as teachers;
- sharing the process and findings with like-minded colleagues;
- enjoying collegiality and making a difference;

- in-depth learning about using assessment tools for evidence-based teaching; and
- using action research and coaching as professional development.

The findings also provide evidence that all six schools hold clear, appropriate, and challenging expectations for their students. To varying extents and using a range of appropriate tools, all now measure academic achievement against national norms and all have developed mechanisms for reporting their performance to various audiences.

The findings also suggest that, though demonstrably different from each other, these six New Zealand schools are able to set performance expectations, are finding ways to monitor academic standards of performance they find useful for their own purposes and assist young people to become better learners, motivated to keep learning. In other words, the similarities between these schools, as well as the differences, are also of interest here. In all six schools the teachers are able to identify not only what they intend students to learn and teachers to teach, but the assumptions that underpin the reasons for their educative actions. Learning is not seen only, or even primarily, as a set of predetermined outcomes, but rather as a process that works towards enabling their students to become skilfully confident "whole" people set for living and learning in life. The academic curriculum plays its part, but learning is viewed more as a process than a product. This ability for schools to see themselves as being about more than just achieving narrowly defined academic targets appears to stem from the policy context in which these New Zealand schools find themselves. By policy context we mean such things as: the challenge and support to improve as a school; the "assess and assist" method of educational review; the national expectations for achievement evaluated and reported through low stakes monitoring (e.g., the National Educational Monitoring Project); and the provision of nationally norm-referenced and standardised assessment instruments (for example, asTTle and PATs) that schools can use to assist improvement. The teacher-researchers explained that they can use these nationally provided assessment tools alongside other standardised procedures such as running records in reading in this particular policy environment without the negative effects of narrowly prescriptive tests that, in England, the USA and elsewhere, have had unintended negative (though some might argue predictable) consequences.

In contrast to educational jurisdictions that require national or state testing for children in primary schools, the teacher-researchers in our study explained that the New Zealand policy context provides opportunities for professional development. They believe this context allows teachers to drive achievement up through school-based initiatives rather than external tests and comparisons. They insisted that this approach provides the conditions for their schools to take responsibility for their own improvement and, it is argued here, allows and encourages schools and teachers to focus on the whole person rather than on a very narrow set of academic skills. An interesting aside is that several of the teacher-researchers have travelled to study schooling and school leadership in the United Kingdom, South Africa, and Australia, and are very much aware of the differences between the New Zealand and other schooling systems.

But the reasons why the six schools in this project are focused on improvement are related to more than just the policy context, however. All of the teacher-researchers (as school leaders) emphasised the importance of setting clear expectations, knowing about and learning from student achievement data, and planning for investigations into their own practice. Many of the teacher-researchers were undertaking Master's or PhD-level study in education or a related field (such as leadership or religion) during this project. Clearly, the leaders of these schools also believe that they have more to learn about strengthening teaching within their individual school contexts. The lead teacher-researchers and/or the principal initiated contact with the university researchers to establish this project. Through our initial discussions and the collaborative preparation of the research proposal it became clear that, although they believed their schools were successful, they had responded to the TLRI opportunity because they wanted to investigate improvement further in order to raise expectations and improvement.

In addition, each school leader was concerned to improve the practice of teachers within their school; all had begun by extending their professional reading and learning; all gathered baseline information about student achievement within their school in at least one area; and most gathered other information about teaching, such as the staff reactions to student learning meetings, and information about the feedback they were providing on students' work samples.

4. Limitations

Although this project ran successfully in each school and resulted in enhanced achievement for students, this was not always a smooth and even process. Several limitations are noted here in to the hope that future similar projects might learn from our experiences.

The teachers involved in the project were at times critical of certain features of the project. There never seemed enough time to carry out every aspect that was planned, and at times it was difficult for them to meet the call for information for the research project concurrently with their teaching and school commitments. Although support was available from the university researchers, some aspects received less attention from the teachers. For example, writing up the research was challenging. The university researchers provided a template for this, and also some gave assistance to others with the presentations for the NZARE symposium. It could be argued that the teachers were more commited to action learning than action research, except where they were completing research degrees.

The cost of investigating practice in partnership between schools and universities was problematic at times. Schools often forgot to claim back money for teacher release days (TRDs) and the amount allocated to each school for administrative purposes, while useful, was less than some of them used in the research process.

Support from senior management was uneven across the schools. Our experiences in this project confirmed that the principal is a critical change agent within the school. While all of the principals were keen to have their schools take part, there was a greater commitment to the research by the staff involved when the principal was integral to the project rather than just supportive of it.

Finally, although papers were presented and published throughout the course of this project, in-depth analysis and discussion of the results have not been possible to the extent that might be desirable given the very small amounts of university researcher time funded. While .1 and .05 of a workload were just adequate to keep the project running and prepare some papers, a far greater time allocation is necessary for the production of substantial research outputs. We recommend that funding for future projects allows for greater involvement of the university research partners, particularly in the early stages of a project.

5. Building capability and capacity

The partnerships developed throughout this project played a major part in building the research capability and capacity of the teacher-researchers and other teachers at each of the schools involved. Evidence of this increased capacity and capability is demonstrated in the case studies included in this report. As evidenced in the case studies, teachers in each of the schools became immersed in the research literature regarding their particular project. For some, this involved literature reviews, and staff study groups that shared research articles and used readings at staff and syndicate meetings. The research literature informed the design of the school projects and was discussed in relation to the results in most of the school presentations at NZARE and the November symposium. The data collected from each school indicates that the teacher-researchers had begun to regard themselves *as* teacher-researchers, actively using research practices to generate evidence of student learning and achievement in order to plan where to go next in the cycle of school improvement.

Since the end of the project, further indications of increased research involvement, capacity and capability have emerged. A further teacher-researcher has enrolled for a doctorate in education, one of the schools has initiated heir own TLRI project in association with other schools in their town, and a third has organised an exchange for a teacher through the UK connections made during the project. Several of the teachers who attended NZARE in 2005 indicated that they would be at Rotorua in 2006 for the next NZARE conference. We plan to follow up each of the teacher-researchers at the end of 2006 to investigate how these research aspects have been sustained or increased following the conclusion of this project.

Conclusion

This project demonstrated how teachers and university researchers can work together to promote evidenced-based practice in New Zealand schools. Rather than a narrow interpretation of evidenced-based practice that refers to the use of assessment data by teachers, we have shown how teacher-researchers can become familiar with large amounts of research literature as part of their work as teachers and use it to plan interventions to improve their practices, change their school cultures, and inform their communities. Evidence was also sought by these teachers to ensure that the changes that they were making worked for other teachers in their schools and in improving student learning outcomes. Our findings also indicate that teacher-researchers were most comfortable with the action aspects of changing teaching and monitoring progress. Further assistance is needed to improve the assessment knowledge and techniques of teachers and their research writing and presentation skills. It is recommended that teacher research projects in future

assist teachers in these areas, resource and support teacher research sufficiently, and investigate the sustainability or scaling up of school-based teacher research.

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Appendix 1: Publications resulting from the project

Publications resulting from the project to date include:

Allan, R. (2005). *Learning logs: The tool to develop teacher-student relationships*. Unpublished master's thesis, The University of Waikato, Hamilton.

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