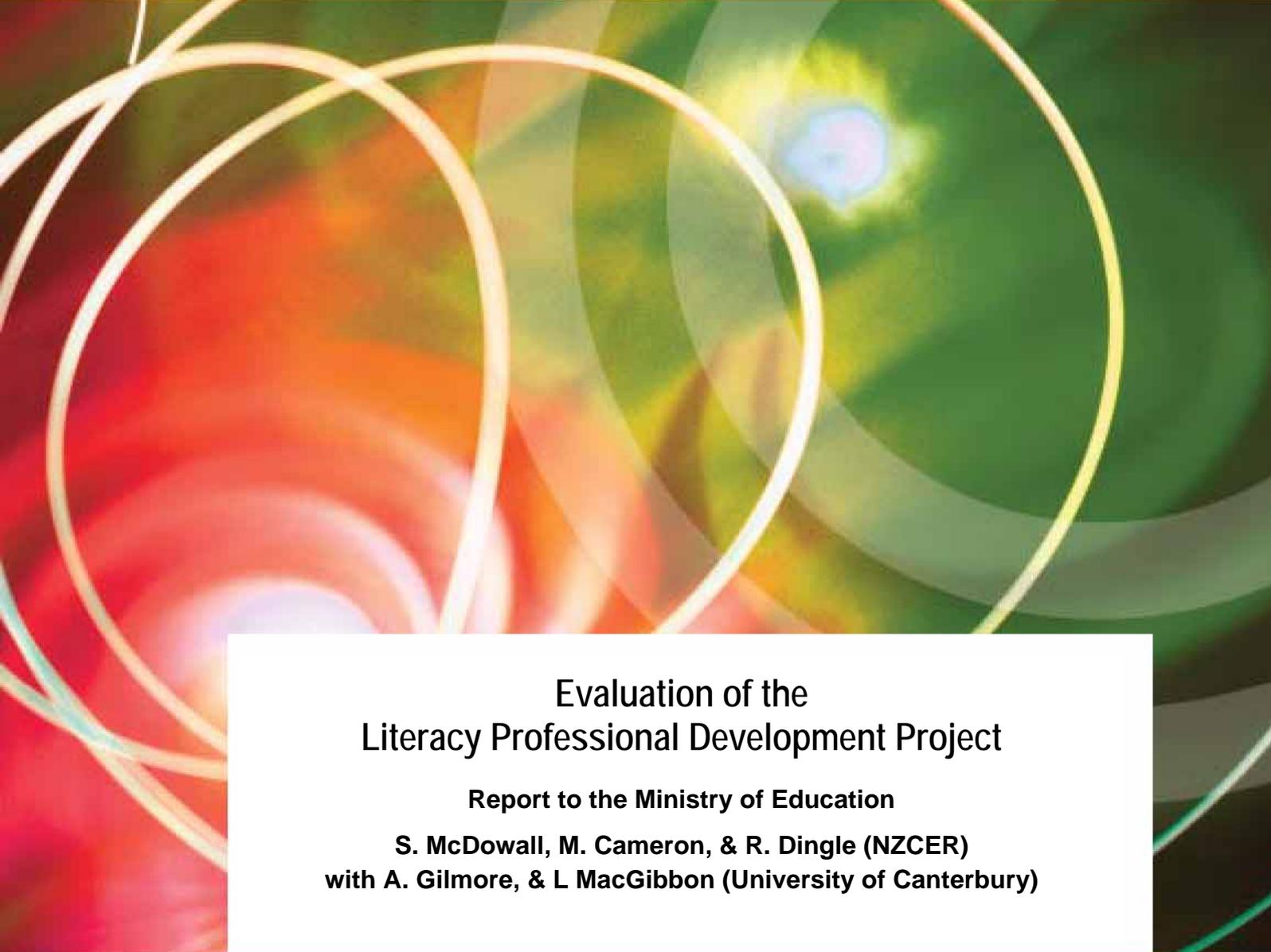





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Te Tāhuhu o te Mātauranga

New Zealand



**Evaluation of the
Literacy Professional Development Project**

Report to the Ministry of Education

**S. McDowall, M. Cameron, & R. Dingle (NZCER)
with A. Gilmore, & L MacGibbon (University of Canterbury)**

RESEARCH DIVISION



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Evaluation of the Literacy Professional Development Project

Report prepared for the Ministry of Education

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with

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Executive summary

The Literacy Professional Development Project (LPDP) aims to improve student achievement through an evidence-based inquiry model that develops or enhances strong professional learning communities focused on quality teaching. The professional learning communities include school staff, the external facilitators who coach school staff, and a national team of regional leaders, project directors, and project researchers.

Schools involved in the LPDP focus on either reading comprehension or writing. There are five project outcomes. These are:

- Evidence of improved student learning and achievement;
- Evidence of improved teacher content knowledge;
- Evidence of transfer of understanding of literacy pedagogy to practice;
- Evidence of effectively led professional learning communities; and
- Evidence of effective facilitator practice (added in 2006).

From 2004–2007, the LPDP has provided whole-staff, onsite literacy professional development running over two years, for almost 300 schools with students from New Entrants to Year 8. It also conducts its own ongoing inquiry into the project's effectiveness, using data collected and discussed within the LPDP team, and closer research with a smaller set of schools, and has made changes to improve the quality and focus of its work as a result. These changes are based on the project's theoretical frameworks, derived from research evidence, about what is needed in professional learning to change practice and understanding.

The LPDP has been delivered by Learning Media Limited (LML) on contract to the Ministry of Education (MOE). This report provides the results of an evaluation conducted by the New Zealand Council for Educational Research (NZCER) and the University of Canterbury for the MOE.

The research questions for this evaluation were:

- What evidence is there of improved student learning and achievement?
- What evidence is there of practitioner learning?
- What evidence is there of facilitator learning?
- What evidence is there of effectively led professional learning communities?
- How effective are the features and processes of the LPDP model for improving student achievement and practitioner learning?
- How sustainable are the changes brought about during the LPDP?

Data analysis

Our data consist of:

- Student achievement data collected by LML from continuing schools in the February 2004 and July 2004 cohorts at the beginning and end of their professional development;

- Data on practitioner learning (scenario ratings) collected by LML from continuing schools in the February 2004 and July 2004 cohorts at the beginning and end of their professional development;
- Responses to questionnaires developed for this evaluation and sent in August 2006 to all facilitators, and to literacy leaders and two teachers in all schools from all cohorts;
- Literacy leader and teacher responses to the LML project questionnaire completed at the beginning and end points in the schools' professional development;
- School leaders' responses to the LML interviews at the beginning and end points in the professional development; and
- Case study data collected during March 2006 from twelve schools in the February 2004 cohort, including interview responses of the principal, literacy leader(s), two teachers, and the facilitator, along with project documents and records from each school.

We analyse student shifts in achievement in relation to school survey and LML scenario data. Through analysis of the qualitative data from the case studies and open-ended survey questions we gain a deeper understanding of what the shifts identified in the quantitative data mean, in relation to factors such as school culture, leadership, and so forth.

Main findings

Student achievement

Overall, the gains in reading and writing achievement by students from schools in the LPDP, after taking into account expected growth and maturation were greater than those that could be expected without the intervention. The mean shift in achievement over the 24 month period between pre- and post-intervention testing for students in schools with a reading focus was 0.53 of a stanine, or an effect size with a 95 percent confidence interval of 0.26–0.30.

The mean shift in achievement over the same time period for students in schools with a writing focus was 129.8 points, 29.8 points more than expected, and equivalent to an effect size of 1.17, with a 95 percent confidence interval of 1.09–1.25, or an effect size between 0.74–0.87 (assuming a mean increase of 40 points over 24 months) or 0.20–0.31 (assuming a mean increase of 100 points over 24 months).

Some of the greatest gains were made by the lowest performing students, although over one third of students in reading schools who began in stanine one, remained in stanine one;

Although the LPDP was effective in lifting student achievement on average, not all students made positive shifts, and some students made significantly greater shifts than others due to a range of factors outlined below.

School and facilitator effect

There were large significant school effects with differences in schools accounting for almost 30 percent of the variance of shifts in student achievement and final scores within the model for reading schools and 23 percent for writing schools. This means one of the greatest indicators of student progress was the particular school students attended, regardless of school background characteristics, such as decile or size. These differences may be attributed to factors such as school leadership, school culture, the capability of literacy leaders, and the strength of professional learning communities.

There was a significant facilitator effect in reading schools accounting for an extra five percent of variation. There was no facilitator effect in writing schools.

Effect of student characteristics

Although some of the greatest gains were made by initially low achieving students, the group that was a focus of the project, one-third of students from reading schools who began in stanine one, remained in stanine one. However, students beginning in stanine one who initially scored at or above the “critical score”¹ level generally made shifts in their achievement. It is not surprising that a professional development initiative focusing on lifting school-wide achievement in comprehension had less impact on those who began as non-readers. These students needed more individualised and specialised teaching and resources.

In the wider policy context there is interest in the possibilities for reducing the differences in the achievement of Māori and Pacific students and their New Zealand European counterparts. The LPDP achieved its main goal of lifting school-wide achievement in literacy overall and also went some way towards achieving this wider policy goal. There were, for example, no significant differences between the achievement of Māori and New Zealand European students in reading schools (although differences were approaching significance), or between Pacific students and New Zealand European students in writing schools. However the shifts and final scores of Pacific students in reading schools and Māori students in writing schools remained significantly lower than their New Zealand European counterparts.

When considering only those who started in the group with initially low reading achievement both Māori and Pacific groups made significantly lower shifts and had significantly lower final scores than their New Zealand European counterparts. These findings suggest that if the primary goal is to reduce differences in achievement by ethnicity different types of intervention may be needed.

There was no significant effect for gender in reading schools, but in the writing schools, girls had significantly higher shifts and final scores than boys. In writing schools students who started in Year 7 had significantly higher shifts and final scores than students who started in Years 4 and 5. In reading schools students who started in Year 5 and 6 had significantly higher shifts and final scores than students who started in Year 3.

Effect of school level characteristics

Small, small-medium, or medium-large, reading schools had students with significantly lower shifts and final scores compared with the largest schools (500+). The largest schools were mainly intermediates, so some of this apparent school size effect may have more to do with the year level of the students than with the size of the school. There was no significant effect for school size in the writing schools.

Students in low decile (decile 1 or 2) writing schools had significantly lower shifts and final scores than their high decile (decile 9 or 10) schools counterparts. There was no significant effect for school decile in reading schools.

¹ Elley (2000, p23) defines those scoring below the “critical” level as non-readers.

Practitioner learning

Data literacy

There was a marked positive shift in practitioners' ratings of their ability to use assessment tools, and to interpret student data in relation to national norms and expected patterns of progress. The means moved from "not very strong" to "quite strong" or "strong".

Content and pedagogical content knowledge

There was a positive shift in practitioners' ratings of their understanding of the theoretical principles underpinning effective literacy teaching and learning, how to put these into practice, what effective literacy practice looks like, and student learning progressions in literacy.

Literacy leaders' means moved from understanding these things "not very well" to "quite well" prior to the LPDP, to understanding them "quite well" to "very well" at the time of the survey. Teachers' means shifted from just above the "not very well" level to just above the "quite well" level.

At the start of the professional development the percentage of reading school staff who correctly recognised ineffective practices in the LPDP scenarios ranged from 27 percent (links with prior knowledge) to 52 percent (catering for diverse needs); the percentage of writing school staff ranged from 34 percent (links with prior knowledge) to 51 percent (opportunities to think about quality writing).

By the end of the professional development recognition of ineffective practice was much improved with four of the five items in the 72 to 81 percent range for reading schools, and all five items in the 66 to 79 percent range for writing schools.

The practice most frequently recognised as ineffective by the end of their professional development was the use of learning intentions (81 percent for reading and 79 percent for writing schools). This was also the practice with the greatest increase in staff recognition as ineffective (47 percentage points for reading schools and 41 percentage points for writing schools).

The practice least frequently recognised as ineffective by the end of the professional development was making links to students' prior knowledge. However, a much lower proportion of staff from reading (44 percent) than writing schools (66 percent) had this understanding by the end of their LPDP participation. For reading schools this was the practice with the least increase in staff recognition as ineffective. These findings may help explain why the multilevel modelling showed the differences in performance of Māori and Pacific students and their New Zealand European counterparts were greater in reading than writing schools, particularly those who started with low levels of achievement. This suggests that greater emphasis could be placed, particularly in the area of reading comprehension, on supporting literacy leaders and teachers to draw on the cultural and linguistic resources Māori and Pacific students bring with them to school.

Transfer of pedagogical content knowledge to practice

The shifts in classroom practice most and least frequently reported were consistent with shifts in understanding shown in their scenario ratings. Practitioners' ratings *shifted the most* in relation to the use of learning intentions and success criteria, and these were the practices they most frequently reported using by the end of the survey. Practitioners' practices *shifted the least* in relation to catering for students' interests and cultural identities, drawing on their prior knowledge and experiences and providing students a wide range of rich texts.

The practices which practitioners reported using *least frequently* at the time of the survey related to giving students some say in what and how they would learn, and the criteria against which they would be assessed. On average practitioners reported only doing these things “some of the time”

Practitioners’ beliefs and expectations

Most literacy leaders but only half of the teachers rated the LPDP as “very effective” in convincing them that student achievement could be enhanced. Literacy leaders also thought the LPDP had more impact on their students’ engagement and learning than did teachers.

Associations between practitioners’ skills, knowledge, and practices, and student achievement

Some of the effective practices practitioners reported using at the end of the professional development were associated with positive shifts in student achievement.

Those associated with high shift *reading* schools were:

- Teachers who rated their ability at the time of the survey to use tools such as asTTle and STAR as “strong”;
- Teachers and literacy leaders who rated their ability at the time of the survey to interpret student data in relation to national norms as “strong”; and
- Teachers who reported understanding very well at the time of the survey the theoretical principles underpinning effective literacy teaching and learning.

Those associated with high shift *writing* schools were:

- Teachers and literacy leaders who rated their ability at the time of the survey to interpret student data in relation to national norms as “strong”.

Learning in the literacy leader role

Literacy leaders’ skills and knowledge

Most literacy leaders rated the LPDP as having a “strong positive impact” on their confidence in their literacy leader role (58 percent) but only one-quarter rated it as “very effective” in building their leadership and facilitation skills. Literacy leaders on average rated themselves as “not very strong” prior to the LPDP in all but the last two of the following areas² and “quite strong” at the time of the survey indicating some positive shift over the course of the professional development:

- recognising the assumptions and beliefs underpinning teachers’ practice;
- challenging teachers’ assumptions and beliefs without alienating them;
- supporting first and second order change rather than having a “do it for them” approach;
- holding learning conversations;
- being deliberate, explicit and specific, when working with teachers; and
- working effectively with resistant teachers
- giving teachers the benefit of the doubt and respect their differing motivations; and
- recognising their own beliefs and assumptions and resist imposing these on others.

² They rated themselves as “quite strong” in the last two.

Teachers did not give particularly high ratings to their literacy leaders' skills and knowledge at the time of the survey. Approximately one-third rated their literacy leaders' as "strong" and approximately half as "quite strong" in all the areas we itemised, with one exception. They gave particularly low ratings to their literacy leaders' ability to support them to make changes to their classroom practice (47 percent rated this as "not very strong" and 34 percent, "not at all strong"). Possible explanations are that literacy leaders did not have the pedagogical content knowledge or leadership skills needed to effectively support teachers to make changes to their classroom practice, or weren't available to work with teachers in their classrooms.

Literacy leaders' perceptions of facilitator and principal support

Most literacy leaders felt "very well supported" by their facilitator. The support they most frequently rated as having a "strong positive impact" was carrying out classroom observations alongside the facilitator, observing the facilitator giving feedback, and observing the facilitator leading learning conversations.

In contrast, only 51 percent of literacy leaders felt "very well supported" by their principal. The forms of further support they most frequently identified as needing was more release time (and release time on a regular basis) and more principal interest in and understanding of the LPDP and the literacy leader role.

During the LPDP over half of the literacy leaders spent more time than they received in their literacy leader role, and survey and case study responses suggest that many found the size of the job challenging. A number of schools chose to fund the literacy leader role as a full-time position and many more increased the number of literacy leaders in their school during or after the professional development indicating that the job was perceived to be too big for one person who also had classroom teaching responsibilities.

Professional learning communities

Approximately one-quarter of literacy leaders and teachers considered their professional learning communities were "very well established". At the other end of the scale, approximately one-quarter of literacy leaders and teachers considered these were "just beginning" to operate.

There were large shifts in school leaders' ratings of practices supportive of professional learning communities (ranging from 37 percentage points to 58 percentage points). These included:

- Leading a collaborative analysis of the data to set goals for individual teachers based on identified areas of need;
- Challenging practices at both individual and whole school level;
- Arranging school meetings to discuss next learning steps based on classroom achievement information and teachers' literacy pedagogical content knowledge;
- Selecting readings and arranging discussions specifically related to teacher needs as part of the professional development focus; and
- Ensuring practitioners have regular classroom observations conducted for specified purposes.

By the end of the professional development most school leaders saw all of these practices as part of their role.

Practitioners also reported positive shifts in practices, especially in relation to talking with colleagues at least once a term about teaching strategies in relation to student assessment information (97 percent of reading and 98 percent of writing school practitioners) and discussing literacy related professional readings with colleagues in

syndicate or staff meetings at least once per term (52 percentage points for reading and 47 percentage points for writing schools).

By the end of the professional development the three practices practitioners *least* frequently reported occurring were:

- having a school leader follow up on their professional reading (56 percent of reading and 52 percent of writing school practitioners);
- being observed at least twice a year (55 percent of reading and 45 percent of writing school practitioners); and
- consistently receiving useful feedback after observations (48 percent of reading and 55 percent of writing school practitioners).

The inclusion of the last two is consistent with the relatively small shifts in literacy leaders' ratings of their ability carry out observations and give specific feedback to teachers. There are four possible reasons for the lack of useful feedback: literacy leaders without the pedagogical content knowledge to provide useful feedback, or the leadership skills to provide feedback in an effective way, inadequate time allocated for literacy leaders to share feedback with teachers and a lack of trust in schools at which professional learning communities were only just beginning to be established.

Association with shifts in student achievement

There were associations between many of the effective professional learning community practices staff reported engaging by the end of the professional development and shifts in student achievement. In *writing* schools, those who tended to come from schools with higher shifts in student achievement were:

- Literacy leaders who rated their principal as showing “a lot” of commitment to the LPDP;
- Practitioners who agreed that they had a leader who challenged them to teach well;
- Practitioners who agreed they had a leader who helped all staff learn together;
- Leaders who saw as part of their role leading a collaborative analysis of achievement data to set goals for individual teachers based on identified areas of student need;
- Practitioners who reported discussing the achievement of their students with their literacy leader and/or principal at least twice a year;
- Practitioners who reported discussing with colleagues teaching strategies in relation to assessment information at least twice a year; and
- Leaders who reported having regular classroom observations for specified purposes.

In *reading* schools, those who tended or were more likely to come from schools with higher shifts in student achievement were:

- Leaders who saw as part of their role leading a collaborative analysis of achievement data to set goals for individual teachers based on identified areas of student need;
- Practitioners who agreed they had a leader who introduced professional readings that were useful for their teaching; and
- Practitioners who reported being observed by a literacy leader, principal, or colleague at least twice a year.

Impact of experiences during the LPDP on practitioner learning

Almost all literacy leaders and teachers thought the LPDP had at least some positive impact on their data literacy, content knowledge, pedagogical content knowledge, classroom literacy practice, capacity to lift student achievement, confidence and satisfaction in literacy teaching, on the literacy engagement and achievement of their students, and on the development of school professional learning communities.

The experiences most frequently identified as having a “strong positive impact” on practitioner learning and on building professional learning communities were: analysing and discussing student achievement data and work samples and classroom observations with feedback, both for the purpose of better understanding and improving teaching practice.

Literacy leaders rated the impact of the professional development higher than did teachers. They also had greater awareness of the main goals of the LPDP. Findings from the case study schools suggest that literacy leaders may have been more invested in the project and gained more from it due to their leadership responsibilities and their greater involvement with the school facilitator.

Sustaining change

Less than one quarter of literacy leaders and a little over one-third of teachers from the 2004 cohorts thought that changes made to school-wide practices during the LPDP had been sustained “very well” although most thought they had been sustained “quite well”. The main challenges to sustaining change faced by school staff included:

- Practitioners’ lack of the pedagogical content knowledge and inquiry skills needed to work out the changes to make to classroom practice in response to student achievement data;
- Literacy leaders’ lack of the pedagogical content knowledge needed to help teachers work out how to alter their practice in response to student achievement data and provide effective feedback following observations;
- Lack of commitment by some school leaders to sustain change through effective leadership of learning communities and the provision of time and opportunities for practitioners to continue building their skills and knowledge;
- Not enough distributed leadership or well enough established professional learning communities;
- Staff turnover, especially in small schools;
- Teacher resistance; and
- Lack of external support.

There is evidence to suggest that the capacity to sustain change increased with each successive cohort. This is most likely because of increasing project capacity to assist schools to build the structures, culture, knowledge and skills needed for sustained change.

Facilitator learning

Most facilitators rated the LPDP as very effective in building their ability to interpret and use student achievement data, literacy content knowledge, and understanding of transferring pedagogical content knowledge in practice and there were positive shifts in their ratings of their capability in all of these areas.

Content and pedagogical content knowledge

There were positive shifts in facilitators' ratings of their content and pedagogical content knowledge. When asked how well they understood, prior to the LPDP, the principles underpinning effective literacy teaching and learning, how to put the theoretical principles into practice, and what effective literacy practice looks like, facilitators, on average, selected "not very well" to "quite well". When asked how well they understood these things at the time of the survey, they selected "quite well" to "very well".

Facilitators' ratings shifted the most for these aspects of their understanding of pedagogical content knowledge transferred to practice:

- Giving students the opportunity to help develop success criteria;
- Sharing learning intentions with students;
- Using information from students and their work to better understand the effectiveness of teaching; and
- Providing success criteria against which students can judge the quality of their work.
- The first two and fourth of these were also the practices for which practitioner ratings shifted the most.

Their ratings shifted the least for these aspects of their understanding:

- Providing students with opportunities to engage with a wide range of rich texts;
- Planning a wide variety of learning experiences that draw on students' interests and social and cultural identities;
- Linking new teaching with students' prior experience and knowledge; and
- Teaching in a deliberate, purposeful, and specific way.

These four practices were also the practices for which practitioners' ratings shifted the least.

These findings show the relationship between facilitator expertise and teacher learning, highlight the importance of facilitators having the skills and knowledge needed for their role in schools, and validate the project directors' decision to prioritise facilitator learning.

Facilitation skills

Less than half the facilitators rated the LPDP as very effective in building their facilitation skills. There were, however, positive shifts in their ratings of these. The skills for which facilitators' ratings shifted the most were:

- holding learning conversations;
- supporting first and second order change rather than having a 'do it for them' approach; and
- contacting schools prior to visits to clarify the focus of the visit.
- These shifts reflect the emphasis placed on developing these skills in national and regional meetings initiated by the project directors in response to project learning from the Auckland research findings.

The main challenges identified by facilitators were:

- lacking a clear sense of direction;
- the changing nature of the project;
- the high workload;
- the amount of new learning required without adequate time to reflect and practice;
- making second order change;

- technological challenges, particularly in relation to asTTle; and
- the relatively high levels of stress resulting from the combination of these challenges.
- These challenges help to explain why less than half of literacy leaders and only about one-third of teachers rated their facilitators' facilitation and organisational skills as "strong".

The multilevel modelling of the February 2004 cohort data (Dingle & McDowall, 2006) showed a significant facilitator effect accounting for 17 percent of the variation in students' achievement shifts in reading schools and 33 percent of the variation in students' achievement shifts in writing schools. In the multilevel modelling carried out on the combined data from the February and July cohorts, the facilitator effect was significant in the reading schools accounting for an extra five percent of variation in students' scores, and there was virtually no facilitator effect in the writing schools.

A likely reason for a reduced facilitator effect is the increased experience of facilitators as well as the considerable investment in facilitator learning and support made by the LPDP.

Conditions associated with student achievement

School characteristics associated with student achievement

Given the considerable financial investment in the LPDP by the MOE, it is important to identify the characteristics of schools associated with higher and lower shifts in student achievement to ensure that the schools selected to participate are those likely to benefit the most.

Professional learning community practices associated with achievement

We found that the schools with higher shifts in student achievement tended to be those which, according to practitioner responses, had fewer or weaker professional learning community practices to begin with. The converse was also true. Schools with lower shifts in student achievement tended to be those which, according to practitioner responses, had more established professional learning community practices to begin with.

For instance:

- Reading school practitioners who *at the start* reported they either never assessed their students or only did so once a year (when compared with those who reported assessing their students more frequently) tended to come from *high shift* schools;
- Reading school practitioners who reported that *prior* to the LPDP they never discussed literacy related professional readings tended to come from *high shift* schools;
- Writing school practitioners who *at the start* agreed they had a leader who helped them to work out strategies to improve their teaching were significantly more likely to come from *low shift* schools; and
- Reading school leaders who at the start of the LPDP reported providing opportunities for teachers to engage in professional reading for specific purposes were significantly more likely to come from *low shift* schools.

The most likely explanation for the greater impact of the LPDP on building school capacity to lift student achievement in schools where there were fewer practices indicative of strong professional learning communities to begin with is that there was greater room for improvement in these schools.

Data literacy, pedagogical content knowledge and transfer to practice

Literacy leaders and teachers from low shift schools tended to rate their pre- LPDP knowledge, skills, and practice more highly than their counterparts from schools with higher shifts in student achievement.

For instance:

- Reading school teachers who indicated that prior to the LPDP they, at least on occasion, kept up to date with current research and innovations in literacy teaching before the LPDP (compared with those who “hardly ever” did).
- Writing school teachers who indicated that prior to the LPDP they read literacy related professional readings for interest in their own time, at least on occasion, (compared with those who reported “not at all”);
- Reading school practitioners who indicated that prior to the LPDP they had at least some strength in their ability to use student data to work out what to teach next (compared with those who selected “not at all strong”);
- Reading school practitioners who indicated that prior to the LPDP they had at least some strength in their ability to use student data to work out what to teach next (compared with those who selected “not at all strong”) at the start of the professional development;
- Reading school practitioners who indicated that prior to the LPDP they talked with students individually about their understanding of their learning at least on occasion (compared with those who “hardly ever” did); and
- Writing school teachers who indicated that prior to the LPDP they gave students some choice about what they learnt and how they went about it, at least on occasion (compared with those who “hardly ever” did

were all significantly more likely to come from low shift schools.

Association between class level and student achievement

There was a tendency in the schools included in this evaluation for *older* students to make greater shifts and to have greater final scores than younger students. For instance, in writing schools, students who started in Year 7 had significantly higher shifts and final scores than those who started in Years 4 and 5. In reading schools, Year 5 and 6 students achieved significantly higher shifts and final scores than Year 3 students. As there has traditionally been more emphasis placed on literacy in the lower levels in New Zealand schools, it is possible that teachers at higher levels of the school, and particularly in intermediate schools where the literary focus changes, had greater room for improvement in their literacy content knowledge and practice, and so benefited the most.

Association between school size and student achievement

Such an interpretation would also help explain the finding that in the group focusing on reading comprehension, small, small-medium, and medium-large schools had significantly lower scores compared with the largest schools (500+) which were mainly Intermediate schools.

Implications

The selection criteria used by the project for the 2004 and February 2005 cohorts meant that schools with a wide range of starting points in terms of professional learning communities, skills, and, knowledge were included in the LPDP.

The findings discussed in the sections above have implications both for the schools selected to participate in professional development and for the flexibility of professional development providers to adapt to the differing stages schools are at.

If professional development initiatives such as the LPDP have less impact in schools already exhibiting practices indicative of strong professional learning communities and in schools where literacy leaders and teachers already have at least some data literacy, content and pedagogical content knowledge, and effective practices, more efficient use of resources could be made by selecting schools with the greatest need. This approach was adopted by the LPDP for the 2006 cohorts.

Another approach would be to offer different experiences or different lengths of professional development time according to need. For such an approach facilitators would need to be well equipped with strategies for both diagnosing and responding to schools differing needs.

LPDP experiences associated with student achievement

Opportunities for input into the content and process of learning

The professional development experience most strongly associated with higher shifts in student achievement was the opportunities practitioners had to have some say in what and how they learned during the professional development. The multilevel modelling showed that teachers from both reading and writing schools who indicated they had at least a little input into decisions about their professional development were more likely to come from schools with higher shifts.

However, nearly one-third of teachers considered that they had either “not much” say in what and how they would learn in the LPDP and 62 percent considered they had “not much at all”. In an open-ended question on the key strengths of LPDP, nearly one third of facilitators identified tailoring professional development to the individual needs of schools, but only seven percent of practitioners identified this as one of the key strengths. Given the association with higher shifts in student achievement, these findings suggest the need for teachers to be given more opportunities to contribute to decisions about their professional development.

Perceived strengths of the LPDP

Generally facilitators, literacy leaders, and teachers were extremely positive about the LPDP when compared with other professional development they had experienced. Nearly all facilitators, literacy leaders, and teachers indicated they would recommend the LPDP to others working in their role.

The strengths of the LPDP, when compared with other professional development experiences most frequently identified by practitioners were (in order of frequency):

- the professional or personal qualities of the facilitator;
- the fact that the professional development was school-wide and involved building professional learning communities;
- the length of the professional development;

- the intensity of the professional development, that is, the ongoing nature of the support and guidance provided by facilitators;
- the focus on interpreting and using student achievement data to lift student achievement;
- the use of recent research to build teachers' pedagogical content knowledge;
- the tailoring to individual school needs; and
- the focus on improved teacher practice.

The strengths of the LPDP, when compared with other professional development experiences most frequently identified by facilitators were exactly the same and in the same order of frequency with one exception. The strength they most frequently identified was the LPDP focus on building habits and skills of inquiry at all levels of the project and they did not identify the professional or personal qualities of facilitators as a strength.

The strengths of the LPDP identified by facilitators, literacy leaders, and teachers are consistent with many of the conditions Timperley et al. (in press) identified in their Best Evidence Synthesis, necessary to promote professional learning at the depth necessary to have a positive impact on student achievement. These include: “consistency with wider policy trends and research; an extended time for teachers to engage with new ideas and their implications for practice; experts external to the group who could present those ideas in ways that promoted teacher engagement; opportunities to engage in a range of learning opportunities; and participation in a professional learning community that supported the new ideas and practice at the same time as it challenged existing ones and focused on teaching—learning links.” (Timperley et al, in press).

Project coherence

One explanation for the success of the LPDP in lifting student achievement is the “coherence” (Newmann et. al., 2001) promoted both *within* and *across* the communities of practice at all levels of the project.

The LPDP promoted coherence *within* communities of practice by supporting the development of effectively-led professional learning communities in which there were shared expectations and goals, reflective conversations about practice and its impact, deprivatisation of practice, and joint planning.

By the time of the survey there was evidence of coherence within the facilitators' regional and national communities of practice and within schools' communities of practice (although the degree of coherence differed from school to school depending on the strength of their professional learning communities).

One of the main challenges for the project has been developing coherence *across* communities of practice at the different levels of the project. The project developed a number of structures and approaches to support this. These included making practice explicit, having some members who worked across adjoining communities of practice, and having artefacts common across communities of practice.

The findings from this evaluation suggest that the degree of coherence between the Leadership and Effectiveness Team (consisting of the two project directors, four regional team leaders, and two project researchers) and the various communities of practice (facilitators, literacy leaders, and teachers) decreased down the tiers of the project. That is, coherence was greatest between the LET team and facilitators and least between the LET team and teachers. There is evidence from the LML milestone reports and from survey and case study responses from this evaluation that the messages the LET team sent sometimes changed in meaning or emphasis by the time they had been passed down through the different levels of the project to teachers. This is illustrated in the differing

degrees of awareness of the main goals of the LPDP at different levels of the project. For example, improving student learning and achievement was identified as one of the main goals of the LPDP by 97 percent of facilitators, 63 percent of literacy leaders, and 55 percent of teachers. Improving teacher content knowledge was identified by 83 percent of facilitators, 33 percent of literacy leaders, and 19 percent of teachers. Improving the transfer of the understanding of literacy pedagogy to practice was identified by 95 percent of facilitators, 82 percent of literacy leaders, and 69 percent of teachers. Building professional learning communities was identified by 93 percent of facilitators, 28 percent of literacy leaders, and only 4 percent of teachers.

Recommendations

We recommend that:

- The project continue to inquire into the individualised and specialised teaching and resources required to ensure that those with the lowest literacy achievement can make progress comparable to their peers;
- The Ministry of Education support further inquiry into the specialised teaching and resources required over and above literacy professional development initiatives targeting school-wide shifts in student achievement to ensure that differences between the lowest and highest achieving students can be reduced. The findings of this study suggest that this may be beyond the scope of initiatives focusing on school-wide shifts, such as the LPDP, as there is a tension between the goal of shifting student achievement per se and the goal of ‘closing the gaps’;
- The project continue to inquire into practitioners’ capacity to draw on the cultural and linguistic resources Pacific students bring with them to school, that a particular emphasis of the inquiry be in the area of reading, and that this inquiry also be extended to include Māori students. We support the intention expressed in the LPDP Milestone Report, July 2006 (English et al, 2006b) to use school-by-school and project data to identify the teachers who have achieved strong results for Maori and Pacific students to explore further what it is that these expert teachers do;
- Schools likely to benefit most from the LPDP continue to be prioritised for inclusion, as modelled with the 2006 cohorts;
- The project inquire into the impact of building greater flexibility into the nature of the professional development and its delivery in response to school needs, such as its two year duration, the frequency of facilitator visits, and so forth;
- The project inquire into the effectiveness of the more extensive and responsive training period provided to the more recently inducted facilitators so that the approach used ensures facilitators have the necessary skills before working with large numbers of schools;
- Facilitators are provided with adequate time to learn about, reflect, and give feedback on, new project directions, documentation, and practices along with time to practice any new approaches these entail;
- Literacy leaders are provided with adequate support including recognition of the learning and time it takes to perform the role skilfully both during the professional development and once the facilitator support is no longer available. At the school level this might involve providing ongoing, regular release time to carry out this role or the provision of management units in recognition of this role. At the project level it might involve inquiry into building and strengthening professional learning communities for literacy leaders within clusters along similar lines as those developed for facilitators, including modelling, observation, and feedback from a more experienced leader;

- The project carry out further inquiry into ways in which the connections between facilitators and teachers, and between literacy leaders and teachers, could be further strengthened given the considerable differences in teachers' and literacy leaders' reported experiences of, and learning in the project; and
- The project carry out further inquiry into reasons why such a high proportion of teachers did not see the theories underpinning effective teaching and learning as very important by re-examining the ways in which facilitators support literacy leaders and teachers to engage with theory and its application to practice.

These recommendations are supported by findings in the research literature which show that for professional learning to have a positive impact on students: teachers' personal theories need to be engaged rather than bypassed; sufficient time needs to be focused on promoting opportunities to learn; learning resources need to include a range of theoretical tools and principles that integrate teaching, learning, and assessment; learning activities need to include multiple opportunities to learn through a range of activities; and the presentation of theoretical principles needs to be accompanied by activities that translate principles into practice (Timperley et al, in press).

1. Introduction

The Literacy Professional Development Project (LPDP) aims to improve student achievement through an evidence-based inquiry model that develops or enhances strong professional learning communities focused on quality teaching. The professional learning communities include school staff, the external facilitators who coach school staff, and a national team of regional leaders, project directors, and project researchers.

Schools involved in LPDP focus on either reading comprehension or writing. There are five project outcomes. These are:

- Evidence of improved student learning and achievement;
- Evidence of improved teacher content knowledge;
- Evidence of transfer of understanding of literacy pedagogy to practice;
- Evidence of effectively led professional learning communities; and
- Evidence of effective facilitator practice (added in 2005).

From 2004–2007, LPDP has provided whole-staff, onsite literacy professional development running over two years, for almost 300 schools with students from New Entrants to Year 8. It also conducts its own ongoing inquiry into the project's effectiveness, using data collected and discussed within the LPDP team, and closer research with a smaller set of schools, and has made changes to improve the quality and focus of its work as a result. These changes are based on the project's theoretical frameworks, derived from research evidence, about what is needed in professional learning to change practice and understanding.

This report provides the results of an evaluation conducted by the New Zealand Council for Educational Research and the University of Canterbury for the Ministry of Education. This evaluation focuses only on the first phase of this innovative and sophisticated project, on the schools that took part between 2004–06. The evidence-based inquiry model of the LPDP means that some of what we found in this evaluation has also been found by the LPDP team as they discuss the reports from different layers (the Leadership and Effectiveness Team and facilitators), and they have made changes to the programme to make it as effective as possible.

Below we briefly outline the Literacy Professional Development Project and then describe the context and purpose of this evaluation.

The Literacy Professional Development Project

Schools involved in the professional development focus on either reading comprehension or writing. There are five project outcomes. These are:

- Evidence of improved student learning and achievement;
- Evidence of improved teacher content knowledge;
- Evidence of transfer of understanding of literacy pedagogy to practice;
- Evidence of effectively led professional learning communities; and
- Evidence of effective facilitator practice.

There have been some changes to the project outcomes over time. The fourth outcome was altered to include the words “effectively led” for the 2006 cohorts in response to findings from the embedded research (Timperley, Parr, & Werner, 2005) that many leaders were not leading teachers in professional learning meetings to examine data in ways that were closely connected to their teaching. The fifth outcome “Evidence of effective facilitator practice” was added in recognition of its importance for meeting the goal of lifting student achievement, and to formalise the project practice of using evidence-based inquiry into facilitator practice to inform project learning.

The project has three phases that schools move through at varying rates. The three phases are:

- Phase 1: An inquiry into learning, involving the development of an informed knowledge, evidence, and professional learning base;
- Phase 2: Building knowledge and implementing change through active learning; and
- Phase 3: Evaluating and sustaining change.

Each school has one or more literacy leaders who, along with the principal, are responsible for the in-school leadership of the project. The project provides each school with a facilitator who acts as an external coach to the staff as a whole, and who provides support to the school’s literacy leader(s). There are approximately 26 national facilitators; the number varies by year according to need.

The facilitators are, in turn, supported by the Leadership and Effectiveness Team (LET). This team consists of two project directors, four regional team leaders, and two project researchers from the University of Auckland. The project researchers are subcontracted by LML as consultants to the project and conduct associated research in a sample of LPDP schools designated as ‘research schools’. The findings from these research schools are used to provide formative feedback to inform the direction of the project.

The LPDP has an integrated theory of action and improvement which is applied at all levels of the project on the assumption that what works to improve teachers’ practice also works for facilitators, for leaders, and for the project as a whole.

Underlying this theory is the belief that learning to improve practice involves developing an evidence-based inquiry habit of mind, i.e., developing the ability to know when one’s practice is ineffective and being able to do something about it. This involves collecting and analysing evidence to identify the impact of practice (and the theories and beliefs that inform practice).

The project makes use of a number of tools for gathering evidence at all levels of the project.

Evidence of student achievement is collected from students in Years 3 to 8 using:

- Assessment Tools for Teaching and Learning Writing (AsTTle) Years 4–8.
- The Supplementary Tests of Achievement in Reading (STAR) Years 3–8.
- Assessment Tools for Teaching and Learning Reading (AsTTle) Years 4–8.³

Evidence of staff literacy content knowledge and pedagogy is obtained from:

- Staff ratings to scenarios; and

³ The project began using this tool with the 2005 cohort schools in response to the ceiling effect of STAR experienced at particular year levels.

- Classroom observations.

Evidence of effectively led professional learning communities is obtained using:

- School leadership interviews; and
- Practitioner questionnaires.

The project has also developed a tool for monitoring schools' progressions through the three phases of the project.

The purposes of the needs analysis tools are: to engage schools in an inquiry process, to build a rich picture that informs professional learning, and to identify shifts in outcomes over time.⁴

Evidence from the needs analysis tools is also used by the project directors, along with findings from the embedded research, facilitator observations, and case studies to inform their own inquiry into the effectiveness of their practice and the project as a whole. The project directors seek to:

- engage in a "sense-making" analysis in order to understand the efficacy and limitations of the needs analysis tools and the way they are used;
- build a rich description of practices within the project to help prioritise the professional learning needs of facilitators and schools and to make informed changes to the design of the project;
- engage others in this process of inquiry and evidence-based conversations; and
- identify shifts in the outcomes for the project as a whole. (English, Baretta, & O'Connell, 2006a)

Evidence used for project level inquiry is shared with the project team and reported in milestone reports to the Ministry of Education, along with the identification of aspects that require further inquiry, and the project response in terms of action, the effectiveness of which, will in turn be inquired into. In this way evidence-based inquiry is modelled by the project directors and is reflected in their documentation.

Another assumption underlying the LPDP's integrated theory of action and improvement is that much of the improvement required at both individual and system level involves second order change (Marzano, 2003), i.e., shifts in practice that require an examination of personal beliefs and a new way of working. Evidence provides an incentive for changing beliefs and practices through the creation of the cognitive or social dissonance that occurs when evidence is at odds with people's expectations (Spillane, Reiser, and Reimer, 2002, cited by Waters & Grubb, 2004, in Baretta, English, & O'Connell, 2006, p.9).

The project's integrated theory of improvement and action rests on the assumption that learning is a social as well as an individual process—that learning to improve practice involves other professionals who are genuinely motivated to understand their own and others' practice and to take shared responsibility in improving it.

The groups which make up the project: school staff, facilitators, project team, and researchers, are conceived of as separate communities of practice (Wenger, 1998).⁵ The project aims to build and maintain effectively led professional learning communities for each group of the project, as the development of professional learning communities is considered fundamental to sustaining change. The role of leadership is to enable others to be more

⁴ A more detailed description of the tools outlined above is included in the relevant sections of this report and a full description can be found in the LPDP Milestone Report, March 2006 (English, Baretta, & O'Connell, 2006a).

⁵ The University of Auckland researchers are part of the leadership team's community of practice and act as brokers between the research community and the project members—facilitators, school leaders and staff.

effective in their practice. That is, leaders are expected to provide the necessary structures, including those that motivate others to learn.

The project seeks to make explicit the knowledge of the communities of practice at each level of the project to inform strategic action. Facilitators are supported to carry out “deliberate acts of facilitation” by building their knowledge of professional development in schools and by carrying out purposeful inquiry into the impact of their actions on the learning of school leaders and practitioners. School leaders and practitioners are supported to carry out “deliberate acts of leading” and “deliberate acts of teaching”, respectively, by building their literacy content knowledge and pedagogy and by carrying out purposeful inquiry into the impact of their actions on student learning and achievement. Students are supported to carry out “deliberate acts of learning” by building their knowledge of learning intentions and success criteria, and by purposeful inquiry into what and how they learn, through opportunities to think and talk about their learning.

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The LPDP has so far involved 297 schools in six cohorts. Their start and end points are as follows: February 2004 – December 2005; July 2004 – June 2006; February 2005 – December 2006; July 2005 – April 2007; February 2006 and continuing; and July 2006 and continuing.

There are some important differences between schools in the 2004–2005 cohorts, and schools in the 2006 cohorts. Schools in the 2004–5 cohorts can for all intents and purposes be considered as one group, as they all applied to participate in the LPDP at the same time—term 4, 2003, were selected according to the same criteria, and had common project experiences (it was not until the 2006 cohort that facilitators had a ‘second go’ at aspects of the project). The reason for their staggered starting points was that not enough facilitators were available for all schools to start in February 2004.⁷ The schools in the 2004–05 group were selected according to the following criteria:

⁶ The University of Auckland researchers are part of the leadership team’s community of practice and act as brokers between the research community and the project members—facilitators, school leaders and staff.

⁷ This was primarily due to protracted contract negotiations.

- literacy is the major school-wide focus in the school's strategic plan, and literacy goals for student achievement are included in the application;
- the school is not involved in another major professional development contract; the school's plan provides opportunity for regular, whole-school, syndicate, and in-class professional development in literacy;
- the principal and literacy leaders identify how they will collaboratively support the school's involvement in the project; the school indicates the data used to support their preferred literacy focus (reading or writing); and
- the school agrees to contribute two teacher relief days per teacher towards the professional development time.⁸

Priority was also given to: schools in sub-regional clusters to make delivery manageable; schools that identified themselves as a workable cluster; schools involved in the Year 7–8 literacy leadership programme; and to ensuring a balance of schools with no, little, and significant engagement with the Literacy Leadership project.

Schools in the 2006 cohorts were selected with the support of regional Literacy Development Officers (LDOs) and School Support Services (SSS) literacy advisers to ensure schools most at need for a whole school literacy initiative were selected from those that had applied.

The professional development was initially funded for a one-year period. Evidence that by July 2004 most of the first cohort was either under way or just beginning phase one of the three project phases, was presented to the Minister of Education and he agreed that, in order to bring about sustainable change, all participating schools be entitled to two years in the project. Thirty-three schools chose not to take advantage of the second year for a variety of reasons and a small number of schools from later cohorts also withdrew before two years. These schools are referred to as the 'discontinued schools' in this report, and those who completed the full two years, as the 'continuing schools'.

By August 2006 119 of the 297 schools had participated in the LPDP for approximately two years, 44 for at least 10 months, 8 were involved for between two and five months, and 126 were still participating in the LPDP.

Research questions

The primary aims of this evaluation are to investigate:

- the relationship between the LPDP and student achievement;
- the capability building of facilitators and practitioners; and
- the effectiveness of the LPDP model.

This investigation is formative and seeks to inform the LPDP and more generally, the MOE's Literacy Strategy.

The MOE developed the research questions for this study with input from the evaluation team. The research questions are:

1. What evidence is there of improved student learning and achievement?
2. What evidence is there of practitioner learning?
3. What evidence is there of facilitator learning?

⁸ Further details of these selection criteria can be found in English, Baretta, and O'Connell (2004).

4. What evidence is there of effectively led professional learning communities?
5. How effective are the features and processes of the LPDP model for improving student achievement and practitioner learning?
6. How sustainable are the changes brought about during the LPDP?

Overview of the report structure

This report addresses the research questions for the evaluation. In each chapter we draw on the relevant quantitative and qualitative data sources. Chapter 2 describes our research methodology and methods, Chapter 3 focuses on student achievement; Chapter 4, on practitioner learning; Chapter 5, on learning in the literacy leader role; chapter 6, on professional learning communities; Chapter 7, on facilitator learning; and Chapter 8, on sustainability. Practitioners' and facilitators' views of the strengths of the LPDP and suggestions for its further development are included in the chapters focusing on their learning. In the final chapter of the report we synthesise the findings to show the overall impact of the LPDP for the first two cohorts of schools to take part, to discuss the coherence of the project as a whole, and we discuss the implications of the evaluation findings for the LPDP and literacy professional development in general.

2. Research design

Methodology and methods

For this research we used a multi-method design involving both qualitative and quantitative methods of data collection to enable a greater breadth and depth of analysis than could be obtained in a single-method study (Yin, 1994; Creswell, 1994; Patton, 1990). The reliability and validity of this study are strengthened through the triangulation of both methods and data (Patton, 1990, Hakim, 1987).

Our data consist of:

- Student achievement data collected by LML from continuing schools in the February 2004 and July 2004 cohorts at the beginning and end of their professional development;
- Data on practitioner learning (scenario ratings) collected by LML from continuing schools in the February 2004 and July 2004 cohorts at the beginning and end of their professional development;
- Responses to questionnaires developed for this evaluation and sent in August 2006 to all facilitators, and to literacy leaders and two teachers in all schools from all cohorts;
- Literacy leader and teacher responses to the LML project questionnaire completed at the beginning and end points in the schools' professional development;
- School leaders' responses to the LML interviews at the beginning and end points in the professional development; and
- Case study data collected during March 2006 from twelve schools in the February 2004 cohort, including interview responses of the principal, literacy leader(s), two teachers, and the facilitator, along with project documents and records from each school.⁹

We analyse student shifts in achievement in relation to school survey and LML scenario data. Through analysis of the qualitative data from the case studies and open-ended survey questions we gain a deeper understanding of what the shifts identified in the quantitative data mean, in relation to factors such as school culture, leadership and so forth.

We have also used LPDP milestone reports and papers to outline the project's underlying theories of change and action in relation to each main aspect we have analysed, and note where the project has made changes due to its own inquiry process that are now part of the LPDP experience for the current school cohorts.

Table 1 shows the data collection methods used to answer each of the research questions. 'LML' denotes methods used by the LPDP team to collect data, and 'evaluation' denotes methods used by the evaluation team.

⁹ The schools involved in the University of Auckland embedded research were excluded from our evaluation on advice from the Ministry of Education to avoid overburdening these schools and because some of the tools used with these schools differed from project tools.

Table 1 **Data sources used to answer the research questions**

Research question	Data collection methods
What evidence is there of improved student learning and achievement?	Evaluation questionnaires Evaluation case studies LML pre- and post-intervention student achievement data
What evidence is there of practitioner learning?	Evaluation questionnaires Evaluation case studies LML questionnaires LML pre- and post-intervention data on teacher learning
What evidence is there of facilitator learning?	Evaluation questionnaires Evaluation interviews
What evidence is there of effectively led professional learning communities?	Evaluation questionnaires Evaluation case studies LML school leadership interviews LML questionnaires
How effective are the features and processes of the Literacy Professional Development model for improving student and teacher learning?	Evaluation questionnaires Evaluation case studies LML school leadership interviews LML questionnaires
How sustainable are the changes brought about during the LPDP?	Evaluation questionnaires Evaluation case studies LML school leadership interviews

Quantitative data sources

Outlined below is a description of the quantitative data sources and data analysis, beginning with the student achievement data, followed by the LML staff scenario and questionnaire data, and the evaluation survey data.

Analysis of student achievement data collected by LML

Description of project schools

The LPDP project took place over a number of years, and not all schools participated in each phase of the project. Table 2 summarises the situation. There were three cohorts included in the data set for the evaluation, and some schools from each cohort left the project early (referred to as the discontinued schools). The discontinued schools did not provide student achievement data at the end of the project (as they did not complete their involvement in the project), and so are not included in the analysis of these data. The discontinued schools were included in the evaluation survey, and their responses are included in the relevant chapter.

Table 2 **All schools involved in LPDP**

Cohort	Status	Project Schools		Research Schools		Total
		Reading	Writing	Reading	Writing	
1	Continuing from February 2004	38	48	4	1	91
2	Continuing from July 2004	10	8	1	2	21
3	Continuing from February 2005	6	2	-	-	8
Subtotal		54	58	5	3	120
1	Discontinued before December 2004	17	17	-	-	34
2(a)	Discontinued before December 2004	3	-	1	1	5
2(b)	Discontinued before June 2005	1	1	-	-	2
3	Discontinued before December 2005	1	-	-	-	1
Subtotal		22	18	1	1	42
Total		76	76	6	4	162

Table 3 summarises the varying involvement of the schools for which we have complete student achievement data. The research schools were excluded in our student-only analyses of student achievement data, and where student data were combined with teacher data, either from LML or the evaluation survey, other schools were excluded if we did not have the relevant teacher data.

Table 3 **All schools with student achievement data available^a**

Literary focus	Total	Also with data from LML	Also with evaluation survey data
Reading	50	40	28
Writing	51	50	31
Total	101^b	90	59

^a Excludes Cohort 3 and Discontinued schools from Cohort 1 and Cohort 2.

^b One school did not give permission for NZCER to analyse its student achievement data.

Student and school descriptions

We carried out an analysis of the quantitative data from the February 2004 and July 2004 cohorts.

Our analysis included a total of 101 schools that had both pre- and post- achievement data:¹⁰

- 80 of the 91 February 2004 cohort of continuing schools participating in the project during 2004 and 2005, and;
- 21 of the 26 July 2004 cohort of schools participating in the project during 2004, 2005 and 2006.

This gave a total sample size of 7385 students.

The data received from LML included:

¹⁰ We excluded from our analysis the February 2004 discontinued schools and the University of Auckland research schools.

- raw test scores, including subtest scores where relevant for STAR or asTTle
- stanines for STAR or asTTle writing score and corresponding curriculum level
- unique identifier
- gender
- age
- ethnicity (one ethnic group allowed per student)
- year level.

The data did not contain information about which class a student was in. Nor did we receive data that linked teachers and students (other than at the school level).

A description of the STAR and asTTle tests and subtests is given in Appendix A of this report.

STAR has tests for Years 3–9. There are separate tests for Years 4–6 and Years 7–9. The possible maximum score on each test version increases from 45 (Year 3) to 50 at Years 4–6 and then up to 80 for Years 7–9. Hence, comparisons between students in different year levels used stanines as this is a standardised measure across all year levels.

The analysis concentrates on shifts in the level of student achievement and the size of shift (rate of progress) within schools as measured by asTTle and STAR.

Information on the basic characteristics of these schools follows.

Reading schools

The 50 schools with a reading focus provided a student sample of 6133. There were approximately equal numbers of boys and girls (Table 4) and the sample included 51 percent New Zealand European, 21 percent New Zealand Māori, 12 percent Pacific, and 11 percent Asian (Table 5).

Table 4 **Reading school students by gender**

Gender	Number of Students	% Students
Male	3089	50
Female	3044	50
All	6133	100

Table 5 **Reading school students by ethnicity**

Ethnicity	Number of Students	% Students
NZ European/Pākehā	3137	51
NZ Māori	1296	21
Pacific	710	12
Asian	654	11
Other	177	3
Other European	159	3
All	6133	100

The number of students in each year group at the start of the project differed markedly. Between 7 and 10 percent of the students were in each of Years 3, 4, and 5; Year 6 students were a smaller group (5 percent) and those students then in year 7 (69 percent) were the largest group by far (Table 6). This is likely to reflect the priority given to schools involved in the Year 7–8 literacy leadership programme.

Table 6 **Reading school students by year group at the start of the project**

Year Level at start	Number of Students	% Students
3	414	7
4	595	10
5	614	10
6	298	5
7	4212	69
All	6133	100

In previous research, NZCER has found that real differences in student achievement and engagement, and in school-wide issues and pressures are seen between low decile (1 or 2), mid decile (3 to 8) and high decile (9 or 10) schools (e.g. Wylie & Hipkins 2006). This grouping has been used in this analysis.

Twenty-four percent of the 50 schools belonged to the low decile group, and 56 percent of schools were in the mid-decile group. Eighteen percent of schools belonged to the high decile group (Table 7).

Table 7 **Reading schools and students by school decile**

Decile group	Number of Schools	% Schools	Number of Students	% Students
Low (1–2)	12	24	1317	22
Mid (3–8)	28	56	3198	52
High (9–10)	9	18	1552	25
Unknown	1	2	66	1
All	50	100	6133	100

The distribution of schools and students in the sample by size of school are presented in Table 8. Fifty percent of schools were (very) small, with fewer than 200 students, and 18 percent of schools had 500 or more students.

Schools in the smallest size category represented less than four percent of students in the sample, whereas the 18 percent of schools in the largest size category represented over half the students in the sample.

Table 8 **Reading schools and students by school size**

Size (No. of students)	Number of Schools	% Schools	Number of Students	% Students
1–99	12	24	214	4
100–199	13	26	805	13
200–299	7	14	548	9
300–499	9	18	1374	22
500+	9	18	3192	52
All	50	100	6133	100

Forty percent of the schools were full primary, 26 percent were contributing, and 24 percent were intermediate schools. However, in terms of student numbers, over half of the sample came from intermediate schools (Table 9).

Table 9 **Reading schools and students by school type**

Type	Number of Schools	% Schools	Number of Students	% Students
Full Primary	20	40	999	16
Contributing	13	26	1078	18
Intermediate	12	24	3456	56
Composite	1	2	66	1
Restricted comprehensive	1	2	190	3
Secondary (Years 7–15)	2	4	326	5
Special	1	2	18	<1
All	50	100	6133	100

The proportion of reading schools in each decile group is broadly similar to the national proportion. Intermediate schools are over-represented and full primary and contributing schools are under-represented, with the consequence that larger schools (500+ students) are over-represented, and smaller schools (under 200 students) are under-represented.

Writing schools

The writing schools present a somewhat different profile. These 51 schools provided a student sample of 1252. There were approximately the same number of boys and girls (Table 10); and the sample included 68 percent New Zealand European, 18 percent New Zealand Māori, 7 percent Pacific, and 4 percent Asian (Table 11).

Table 10 **Writing school students by gender**

Gender	Number of Students	% Students
Male	629	50
Female	623	50
All	1252	100

Table 11 Writing school students by ethnicity

Ethnicity	Number of Students	% Students
NZ European/Pākehā	848	68
NZ Māori	224	18
Pacific	81	7
Asian	46	4
Other	40	3
Other European	12	1
Unknown	1	<1
All	1252	100

Thirty-three percent of students were in year 4 at the start of the project and 31 percent were in year 5. Year 7 students were a slightly smaller group (24 percent) and those students in year 6 comprised only 12 percent of the sample (Table 12).

Table 12 Writing school students by year group

Year Level at start	Number of Students	% Students
4	409	33
5	385	31
6	152	12
7	306	24
All	1252	100

Over half (53 percent) of the 51 schools involved belonged to the mid decile group, 31 percent belonged to the high decile group, and 14 percent to the low decile group (Table 13).

Table 13 Writing schools and students by school decile

Decile group	Number of Schools	% Schools	Number of Students	% Students
Low (1–2)	7	14	132	11
Mid (3–8)	27	53	642	51
High (9–10)	16	31	475	38
Unknown	1	2	3	<1
All	51	100	1252	100

Eight percent of schools belonged to the largest size category (500+ students) and almost 30 percent belonged to the smallest (1–99 students) (Table 14).

Table 14 **Writing schools and students by school size**

Size (No. of students)	Number of Schools	% Schools	Number of Students	% Students
1–99	15	29	253	20
100–199	13	25	374	30
200–299	6	12	137	11
300–499	12	24	317	25
500+	4	8	168	13
Unknown	1	2	3	<1
All	51	100	1252	100

Forty-seven percent of the schools involved were full primary, 39 percent were contributing schools and ten percent were intermediate. (Table 15).

Table 15 **Writing schools and students by school type**

Type	Number of Schools	% Schools	Number of Students	% Students
Full Primary	24	47	630	50
Contributing	20	39	443	35
Intermediate	5	10	148	12
Composite	1	2	28	2
Unknown	1	2	3	<1
All	51	100	1252	100

The writing schools in the study are broadly representative of primary schools nationwide.

Data analysis

We analysed student achievement data at two levels: descriptively, where we looked at the effect of single variables, ignoring all others, and ignoring the structure of the data (students grouped within schools, which are grouped within facilitators); and then using multilevel models, which can include several variables together (so the effect of each is measured after taking account of the others) and also take account of the structure of the data.

Descriptive analysis

We carried out a descriptive analysis of the student achievement data collected by LML from the continuing schools in the February and July 2004 cohorts. Schools assessed their students' achievement at two or three times approximately 12 months apart (at what we call Times 1, 2, and 3). Times 1 and 3 were approximately 24 months apart.

This analysis reports on the shifts in student achievement between Time 1 and Time 3, provides a description of the overall average shifts in student achievement, along with an account of shifts made by subgroups, such as boys and girls.

The accuracy of the data

Student achievement data were collected by practitioners or facilitators who were also responsible for electronic data capture. The processes used for collecting and entering these data and for checking the accuracy of these processes are described in the LPDP Milestone Report, March 2006 (English, Baretta, & O'Connell, 2006a) to the Ministry of Education. In this report the authors raise a number of reservations about the use of project assessment tools, and the accuracy of the data collection and entry. Our examination of the data supports some of these reservations.

There were anomalies in both the STAR and asTTle data. In the STAR data, there were some errors in adding sub-test scores to get a total score, and in the conversion of the total scores to stanines, based on the mark given, the age of the student, and the time of year the test was taken. An examination of the data received showed errors at each stage of this process. For asTTle, there were obvious errors where the asTTle score awarded did not correspond with the curriculum level also given. This led us to examine the data and, as far as possible “clean” it before any analysis was undertaken.

The asTTle test used at Time 1 was Version 3. When data were collected at Times 2 and 3, asTTle Version 4 had been released and some schools used Version 3 and others Version 4. This raised questions regarding the comparability of the tests, both across schools and between times. Some schools had put their Time 1 (Version 3) scores through the Version 4 software to produce extra scores that weren't available in Version 3, but we used the Version 3 data in our analysis.

The data suggest that STAR 4–6 may have had a ceiling effect for students starting the project in Year 6 and re-tested in Year 7. STAR 4–6 was used to assess students in Year 6, and STAR 7–9 was used when they were re-tested in Year 7. The STAR test at the end of Year 6 has a high average score (37–38 raw score points) which leaves approximately 12 score points for the top fifty percent of achievement (so that a small difference in score can translate into a difference of 2 or 3 stanines). In contrast, the STAR test at the beginning of Year 7 has an average score between 50 and 51 raw score points, which leaves 29 score points for the top fifty percent of achievement (a stanine difference of 1 corresponds to a larger differences in scores).

Despite the issues outlined above, the cleaned data were considered sufficiently robust for the analysis undertaken, and the results, with some caveats, can be used with confidence.

Effect size measures

There are many different meanings attached to the words “effect” and “size”. One interpretation is “the size of an effect”, particularly in a linear model, which means the parameters estimated in the model which represent the change in average value in the outcome variable associated with a particular level of an explanatory variable. For example, for every raw score increase of one point in the Time 1 STAR reading test, students scored an extra 0.7 of a raw score in the Time 3 test, taking their gender, ethnicity, cohort, school, as well as the school's size and decile group, and the facilitator into account. And students in a small school with a roll of under 100 scored on average 7.9 points less than students in large schools (roll of 500 or more), taking Time 1 score, their gender, ethnicity, cohort, school, as well as the school's decile group, and the facilitator into account. Because these parameter estimates take the other variables into account, they can vary between models that include different sets of variables, particularly between models that omit important variables.

These are reported in detail in Appendix B.

The other typical definition of “effect size” is an index that measures the strength of the association between one variable and another. These indices take different forms depending on the measure being used and are commonly reported where the main interest is in the difference between group means. The effect sizes used in this report are Cohen’s *d*, which measure the difference between means (in our case, the shift between Time 1 and Time 3 scores) relative to the standard deviation.

The STAR test uses stanines to report its standardised scores, and the standard deviation of the theoretical distribution of stanines is 2. Consequently, the mean differences we report can be halved to indicate Cohen’s *d* effect sizes, so that a mean shift of 1.2 stanines would correspond to a rather rough estimate of an effect size of $1.2/2 = 0.6$ of a standard deviation¹¹.

The theoretical distribution of the asTTle writing scale has a standard deviation of 100. Consequently the mean differences reported in the asTTle writing scores, when divided by 100, can be used to indicate Cohen’s *d* effect sizes.

The mean differences in both STAR and asTTle scores will give generous estimates of the effect size, as the estimates do not take other variables (e.g. gender, ethnicity, year level, family background) into account.

STAR raw scores and asTTle scores are expected to increase as a student matures.

Our calculation of effect sizes took into account:

- each student has a Time 1 and Time 3 score, so the samples are dependent
- expected maturation (asTTle points)
- sampling error; effect sizes are also affected by random variation, so we present approximate confidence intervals (Viechtbauer, 2007)
- regression to the mean when discussing the progress of low-achieving students.

Analysis using multilevel models

In addition to the descriptive analysis, we have used a multilevel modelling approach which takes into account the structured nature of the data: students within a particular school are likely to have more in common than students from different schools. Failing to allow for this clustering effect can lead to overestimating the significance of differences between groups, and therefore differences that are shown using descriptive analysis may no longer be significant when the data structure is allowed for. It is not that the results contradict each other, it is that the structured data modelling allows many variables to be taken into account at once which may find stronger or weaker relationships than one variable alone.

Students are clustered within classes, but we were not able to use this level of clustering as the data did not include information about class membership.

Schools are clustered in groups with a facilitator looking after one or more schools; we did use this level of clustering in the models.

¹¹ The effect sizes for both STAR and asTTle scores we present differ slightly from the very rough version outlined above as, firstly, we use the sample standard deviation of the appropriate Time 1 test (between 1.9 and 2.0 in the case of STAR stanine scores), and secondly, the calculation used takes into account the fact that we have two dependent samples. The estimate of variance used to set the confidence intervals for the effect sizes takes the correlation between the tests into account.

Multilevel modelling is a form of regression analysis that takes account of the fact that students and schools are grouped into clusters at different levels.¹² The technique also allows us to take account of a range of background variables, some of which are measured at the student level, for example, the ethnicity of a student, and some at the school level, for example, the socioeconomic decile group to which a school belongs.

The models developed using student and school data were later used to investigate the practitioner effect as described below in the sections “Analysis of quantitative teacher data collected by LML” and “Evaluation survey”.

Regression to the mean

In our analysis we looked at the students at both the upper and lower ends of the range of achievement. Some of the change in scores that are found for these students will be due to what is called “regression to the mean”. Regression to the mean occurs whenever an extreme subset of individuals is selected, and then measured again on a second occasion. It is certain that if the lowest-achieving subset is selected, some of the individuals will have been included in the group because they achieved lower-than-average scores, and in the next test their scores are likely to be higher, closer to their true ability. The result is that the mean scores of the group on a second occasion will be higher, irrespective of anything else that happens between the tests. The same is true for the highest-performing subset: in a second test the mean for the group will be lower, as some individuals (those included in the group by chance high scores) are likely to have lower scores than in the first test.

How big the difference due to regression to the mean is, depends on the strength of the association between the two sets of scores (i.e. the reliability of the test used). The weaker the association between the two sets of scores, the larger the effect of regression to the mean will be. For example, if two tests have a correlation co-efficient of between 0.8 and 0.9 (as the STAR stanine scores in the sample did), students getting a mean stanine score of 2.44 in the first test (as the Year 7 students with stanine scores of up to 3 did) would be expected to get a mean score in the 2.9 ($r = 0.9$) to 3.4 ($r = 0.8$) range in the second test, or to have a mean shift of 0.460.92, just by the effect of regression to the mean. The rest of the Year 7 students, having a mean score of 5.73 in the first test, would be expected to get a mean score in the 5.5 ($r = 0.8$) to 5.6 ($r = 0.9$) range in the second test (Smith & Smith, 2005).

Individuals’ stanine scores are not expected to increase over time, so to demonstrate a shift in, for example, students with scores of stanines 1–3, any shift of *more than* 0.46–0.92 is likely to be caused by something other than chance, but shifts less than 0.46 are probably due to nothing more than regression to the mean.

The situation for the writing scores is, if anything, worse, as the correlation between Time 1 and Time 3 scores is weaker, so that the effect of regression to the mean is more marked. In our sample, the correlation between asTTle scores at Time 1 and Time 3 was 0.63. To illustrate the situation, students in Year 5 had a mean score of 375, and those scoring in the bottom 20 percent had a mean score of 204.7. By regression to the mean alone, we would expect these students to score in the 291.5 ($r = 0.7$) to 313.7 ($r = 0.6$) range in a second test. The rest of the students in that year group had a mean score of 417.1, and by regression to the mean we would expect them to score 390.2 ($r = 0.6$) to 395.6 ($r = 0.7$) in a second test. Unlike stanine scores, asTTle scores are expected to increase over time, so before an “improvement” in score can be found, the difference in scores has to be greater than that expected by regression to the mean plus that expected by maturation.

¹² For more details on multilevel modelling see Goldstein 1995.

High- and low shift schools

We categorised the schools as being high-, medium- or low shift and used these categorisations in the analysis of the teacher data described below. We used the average shift in achievement for each school to define the categories: the 6 reading and 6 writing schools with the highest shifts were categorised as high shift, and a matching number of schools with the lowest shifts form the low shift group. All other schools were categorised as mid-shift.

Analysis of quantitative teacher data collected by LML

Teacher data, collected by LML and used for this evaluation included scenario ratings, school leadership interviews, and responses to a questionnaire for literacy leaders and teachers.

Scenario ratings

Literacy leaders, teachers, and principals carried out the scenario rating exercise on three occasions: when schools started the LPDP, part way through the professional development, and at the end of the LPDP. We compared the scenario ratings given at the beginning and end of the professional development.

There were ratings of the scenario from 48 reading schools at Time 1, and 47 reading schools at Time 3. Not all respondents rated all the scenario items. The number of teachers responding from each school varied both between time points and across the scenario ratings. There were ratings from the 55 writing schools at each time point, although the number of teachers at each school varied both between time points and across the scenario ratings.

LML School leadership interviews

The LML school leadership interviews were carried out on three occasions: when schools started the LPDP, part way through the professional development and at the end. We compared school leaders' responses to five questions about their leadership, given at the beginning and end of the professional development.

Principals from 48 reading schools and 55 writing schools provided their responses to the school leadership interview at both times.

LML questionnaire for literacy leaders and teachers

The LML questionnaire was designed to learn about the activities indicative of professional learning communities in which school staff participated. It was completed by literacy leaders and teachers on three occasions, once at the beginning of the professional development, once part way through, and once at the end. We compared practitioner responses at the beginning and end of the professional development.

There were responses to the questionnaire from 48 reading schools at Time 1 and 47 reading schools at Time 3. The number of teachers responding from each school varied both between time points and across different items on the questionnaire. For the writing schools there was the same number of schools at each time point (55 schools), but again, the number of teachers varied both between time points and across different items on the questionnaire.

Data analysis

The teacher data provided were aggregated at the school level, with frequencies of responses given for the school as a whole. We used an average school response at each time point. This limits the possible types of analysis. For example, we could not link students and teachers. It is possible different practitioners will have responded (in different ways) at each time point.

These average ratings for each school were then dichotomised into the appropriate two groups for each statement, such as, effective or not effective, agreement or disagreement, often or sometimes/never. For example, all of those who rated the scenario “highly effective”, “effective”, and “partly effective” were set equal to 1, and the rest (“not effective” and “partly ineffective”) were set equal to 0. These dichotomised ratings were then used to see how teacher ratings at the start and end points related to student achievement.

We first looked at differences between mean student shift scores for each dichotomised teacher rating, ignoring all other variables. As this analysis showed possible differences in student achievement associated with teacher ratings, teacher variables were added to the multilevel models described earlier (to allow for the structure of the data). The details of these models can be found in Appendix B.

Accuracy of the data

We suspect that the initial teacher ratings given may be somewhat inflated, as, firstly, anecdotal evidence reported in the LPDP Milestone Report, March 2006 (English, Baretta, & O’Connell, 2006a) to the Ministry of Education suggested that many practitioners did not answer the questionnaire honestly at the start of the LPDP, as they did not want school leaders to know their views about their schools’ professional learning communities. This means that the extent to which the data shows schools were operating as professional learning communities at the start of the LPDP may be inflated, thereby reducing the size of the shift between time points.

Secondly, it is also possible that at the start of the project the adage ‘you don’t know what you don’t know’ applied. That is, ratings may have been inflated because of an inadequate understanding of the practices being asked about. For these reasons, the true shifts may be greater than those shown in the LML data.

Evaluation questionnaires

School staff

In order to gain a wider picture of teacher experiences of the LPDP, we surveyed all project schools (including discontinued schools) in the February 2004, July 2004, and February 2005 cohorts.¹³ The questionnaires were sent to participants in August 2006.

We sent the principal of each school an introductory letter along with introductory letters and questionnaires for two teachers and one literacy leader (Appendix C and D, respectively). We asked principals to randomly select two teachers working at different levels of their school (e.g., one junior class teacher and one teacher of middle or senior classes), and one literacy leader to fill out a questionnaire. In schools where there was more than one

¹³ We did not include the University of Auckland research schools in our survey.

literacy leader we asked that the person with the most involvement in the LPDP and with the most knowledge of the school-wide impact of the project be invited to participate.

Response rates

We sent questionnaires to 161 schools; 120 of these schools had either completed the full two years of the project or were still participating in the project at the time of the survey and 41 of these schools had left the project before completing two years (the discontinued schools).

At least one questionnaire was received from 66 percent of schools that had either completed the full two years of the project or were still participating in the project at the time of the survey. There was a lower response rate from schools that had left the project before completing the two years. At least one questionnaire was received from 39 percent of discontinued schools.

Fifty-eight percent of literacy leaders and 48 percent of teachers from schools that had either completed the full two years of the project or were still participating in the project returned the questionnaire; as did 32 percent of literacy leaders and 27 percent of teachers from the discontinued schools. The response rate for teachers will have been affected in part by school size: while all schools were sent one literacy leader and two teacher questionnaires, some small schools would not have required the two teacher questionnaires. Therefore, the teacher response rate is probably conservative.

A breakdown of the response rate by cohort can be found in Appendix E. The school response characteristics, in terms of decile group, size and type, were similar to the school characteristics for the student achievement data. For reading schools, questionnaires were returned from slightly more contributing schools and slightly fewer full primary schools than the student achievement data schools; and for writing schools, questionnaires were returned from slightly more intermediate schools and slightly fewer full primary schools than the student achievement data schools. This means that schools from which we received no teacher surveys were excluded from the multilevel model analyses combining student achievement data and teacher survey data, that is, three reading schools and one writing school.

Facilitators

We also surveyed all 37 project facilitators (including those no longer involved in the project at the time of the survey), and 29 (78 percent) of them returned their questionnaires (see Appendix F).

Twenty-two of the respondents were currently facilitators, while seven had left after a period of between one to two years' involvement. The details of when facilitators began and ended their involvement with the project are given in Table 16. Facilitators' experiences of the project therefore differ according to when and for how long they were involved. We have noted any instances in which we consider the experiences of respondents (in terms of their period of involvement in the project) are important when interpreting particular responses.

Table 16 **Time of survey facilitators' involvement in the LPDP**

Cohort	Timing of leaving LPDP				Total
	Beginning 05	Beginning 06	Mid 06	Continuing	
Beginning 2004	3	1		11	15
Mid 2004		1	2	1	4
Beginning of 2005				7	7
Beginning 2006				3	3
Total	3	2	2	22	29

Pilot

We piloted the practitioner questionnaires at a local primary school and sought feedback on the facilitator questionnaire from a local facilitator.

Data analysis

The information from the fixed-choice questions in the questionnaires was captured using SAS/FSP® software. The open-ended questions were coded, and the codes were added to the SAS software dataset. We produced frequency tables for the questionnaire data and used cross-tabulations and chi-square statistics to test for statistically significant associations. We report statistically significant differences and associations where the p -value is less than 0.05. To indicate where we found statistically significant differences we use phrases such as “significantly”, “more likely”, and “less likely”. We use the word “trends” for instances where a consistent pattern is evident but not statistically significant.

All respondents replied to most questions in the questionnaire but some questions have missing data. We note when there was a particularly high rate of non-response. In tables and text, the frequency of responses is indicated as a percentage of the total possible number of respondents. Percentages in the tables do not always add up to 100 because of rounding, non-response, and questions where more than one option could be selected.

As there were respondents from only 16 discontinued schools, compared with respondents from 79 completed or continuing schools, it is not statistically robust to make comparisons between these two groups. However, we did make these comparisons and found no real differences between the responses from discontinued schools and completed or continuing schools. Similarly, as only three facilitators involved for one year or less responded to the evaluation questionnaire it is not be statistically sound to compare their responses with the other facilitator responses.

Case studies of LPDP schools

We used case studies of LPDP schools to gain a greater understanding of factors which could contribute to teacher and student learning, and to building and sustaining effectively led professional learning communities.

The school sample

Our 12 case study schools were selected from the February 2004 cohort of 42 reading and 49 writing schools. The schools were selected from the subset of schools which agreed to be considered for inclusion in a case study, which were not research schools, and for which we had student achievement data.

We used a purposeful sampling approach (Patton, 1990) to select six reading schools and six writing schools. Six of these schools (three reading schools and three writing schools) were selected from those that had larger shifts in their student achievement data relative to the other schools in the cohort (high shift schools), and the other six (also three of each type of school) from those that had smaller shifts (low shift schools).

The schools selected were not necessarily those with the absolutely largest and smallest shifts, as we also needed to ensure that a cross section of size, type and decile was included in both groups. We sought feedback on our selection of schools from the MOE and the sample was changed in response to this feedback to include greater representation of low decile schools in the group focusing on reading. In order to do this we broadened the range from which we drew the high shift reading schools.

Figure 1 shows the average shift in STAR score per school (each symbol represents a school), sorted by size of shift. A plot like this can give indications of “breakpoints” between groups of schools performing similarly. The solid horizontal line through the mean stanine score shift of 0 is useful to separate schools making a positive shift from those making a negative shift. It can be seen that there was one group of ten schools achieving a higher mean stanine score shift (the first 10 schools on the left of the graph with a mean shift of 0.8 or more) and a group of eleven schools achieving a lower mean stanine score shift (the 11 on the right of the graph with a mean shift of less than 0.3). The case study schools were chosen from these two extreme groups, allowing for a mix of school type, size, and decile, which meant that some of the case study schools selected were not those showing the most extreme shifts.

Figure 1 **Reading Schools: mean stanine score shift**

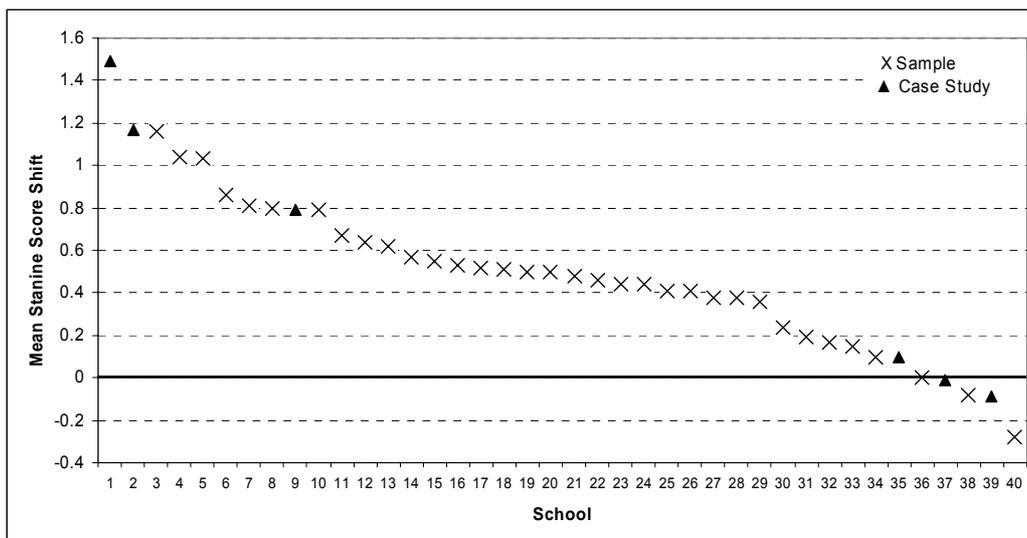
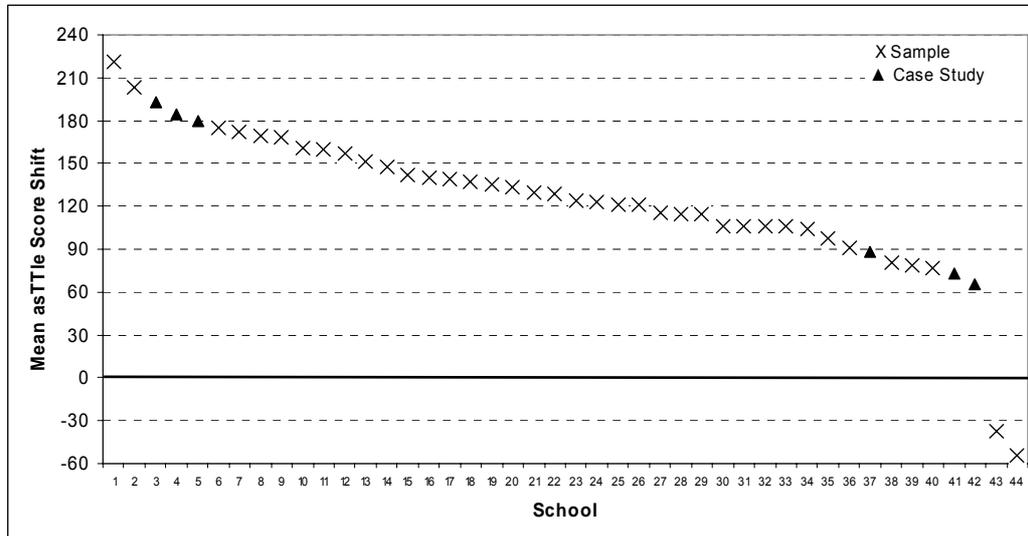


Figure 2 shows the results for the asTTle writing scores. This time there was no clear group of schools with higher mean score shifts than the rest, although there were two schools achieving a considerably lower mean asTTle score shift than the rest of the schools. However, these means were based on very few students, so the case study

schools were chosen from the higher and lower end of the main group, allowing for a mix of school type, size, and decile.

Figure 2 **Writing Schools: mean asTTle score shift**



The mean shifts between Time 1 and Time 3 for LPDP case study reading schools in the February 2004 cohort are shown in Table 17.

Table 17 **Mean stanine shift on STAR for reading case study schools**

School	Mean stanine shift (STAR)
High shift	
School 1	1.50
School 2	0.79
School 3	1.17
Low shift	
School 4	-0.09
School 5	-0.01
School 6	0.10
All schools (including case study schools)	0.56

The mean shift in asTTle scores between Time 1 and Time 3 for LPDP case study writing schools in the February 2004 cohort are shown in Table 18.

Table 18 **Mean shift in asTTle scores for writing case study schools**

School	Mean score shift (asTTle)
High shift	
School 7	192.7
School 8	179.8
School 9	184.6
Low shift	
School 10	88.0
School 11	65.8
School 12	72.7
All schools (including case study schools)	130.1

In order to protect the identity of the schools concerned, only a broad description of their characteristics is provided.

The low shift schools included a decile 1 school, a decile 2 school, two decile 3 schools, a decile 4 school, and a decile 9 school. Three were large schools (over 500 students), two were medium and one was small (under 200 students). They were drawn from five different regions. Three of the schools were main urban, two were minor urban and one was rural.

In the high shift category were a decile one school, a decile five school, three decile 7 schools and one decile 9 school. Three were large schools and three were small. They were drawn from five different regions. Two of the schools were main urban, two were minor urban and two were rural.

The staff sample

From each case study school we interviewed the school's facilitator, principal, one literacy leader, and two teachers. As for the surveys, we asked principals to invite a literacy leader and two other teachers from different syndicates or levels of the school (e.g., junior and middle/senior) who took a lead or showed a particular interest in the project to be interviewed. In schools with more than one literacy leader we asked the principal to approach the person who spent the most time in the literacy leader role and who had most contact with the school's LPDP facilitator. Interviews were conducted between late February and early May 2006.

Staff interviews

The interview schedules were informed by our reading of the documentation provided by LML, the University of Auckland Research report attached to the LPDP Milestone Report, February 2005 (English, Baretta, & O'Connell, 2005a), and our knowledge of programme evaluation and the professional development literature (Earl & Fullan, 2003; Earl & Katz, 2006; Guskey, 2002; Joyce & Showers, 2002; Poulson & Avramidis, 2003; Sparks & Hirsh, 1997). The draft interview schedules were sent to the MOE, LML and the University of Auckland researchers, and

were modified in response to feedback. The interview schedules for principals, literacy leaders, teachers, and facilitators can be found in Appendices G–J respectively.¹⁴

Collection of school documents

We collected a range of reports from each school including action plans for 2006, “Progress through the stages” documents, summaries of the scenario ratings, and student achievement data. We were given access to download relevant documents from the project extranet, such as the initial school information, Time 1, 2, and 3 summary data, leadership interviews, and facilitator notes about school visits.

Data analysis

We read each school’s project documents to further our understanding of the professional development experience in each school, both prior to and following our visits.

We recorded the case study interviews and took notes. We developed a framework for analysing and grouping interview responses according to the research questions and other emerging themes. Each researcher involved in the case study component of the evaluation recorded the relevant information and quotations from the schools they had visited on this framework. This was used to identify similarities and differences across schools.

Summary of data sources

Table 19 provides a summary of data sources and units of analysis used in this evaluation and described in the sections above.

Table 19 **Summary of evaluation data sources**

Analysis type	Analysis unit	Cohort that data came from	Reading	Writing	Facilitators
Descriptive data analysis	Schools/students	Continuing Feb 2004 & July 2004	50 schools	51 schools	-
Multilevel modelling analysis	Schools/students	Continuing Feb 2004 & July 2004	47 schools	50 schools	-
Scenario & questionnaire from LML	Schools	Continuing Feb 2004 & July 2004	48 schools	55 schools	-
Evaluation questionnaire	Practitioners (literacy leaders & teachers)	Continuing and discontinued schools from 2004– Feb 2006 cohorts	40 literacy leaders* 70 teachers*	43 literacy leaders* 67 teachers*	22 continuing & 7 discontinued (of which 3 were involved for 1 year or less, & 4 were involved for at least 18 months)
Case studies	Schools/staff	Continuing Feb 2004	6 schools	6 schools	11 continuing

* Equivalent to 95 schools: 71 completed; 16 discontinued; and 8 continuing.

¹⁴ Teachers from the 2005 cohort received slightly modified versions of some questions to account for the fact that they were still involved in the LPDP at the time of the interviews.

Consent and ethics

The project plan and instruments were approved by the NZCER Ethics Committee. The ethics committee found that the application upheld the responsibilities given to a researcher as per the NZCER ethical guidelines for research.

Use of schools' project data

We informed all facilitators by email that schools were to be contacted, and we provided them with a copy of the letter to be sent to schools, and information about the evaluation. The letter had been approved by LML and the MOE.

In September 2005, we sent letters to all continuing schools in the February 2004, July 2004 and February 2005 cohorts to explain the purpose of the LPDP evaluation and to provide them with the opportunity to have their data collected by LML excluded from our analyses of the school data.¹⁵ In this letter we informed schools that the evaluation team would be using school identification numbers attached to their data, not the school name. One school requested that their data be excluded from the analyses.

Contacting case study schools and gaining consent

We phoned the principals of the 12 schools selected as case studies to explain the nature of the evaluation and to ask them if they had an interest in being involved. We began each phone call by explaining that NZCER and the University of Canterbury were carrying out an evaluation of the LPDP on contract to the MOE. We told principals about the criteria used to select the case study schools and which category (in terms of shifts in student achievement data) their school fitted. This ensured that their consent was informed, and that no information was withheld. All principals except one expressed an interest in being involved. The principal of a very small school who was new to the school in 2006 and had not been involved in the LPDP declined to take part. We selected a substitute school that was a similar size and decile, with similar mean student achievement shifts.

One school and its facilitator subsequently expressed concern about its inclusion in the "low- shift" category, as they did not believe that this judgment was accurate. Examination of the data from this school confirmed that there had been an error made in the entry of its student achievement data prior to its being sent to LML. This error had not been picked up by the facilitator, LML, or the statistics and data management team at NZCER. The data had been entered in the wrong order with scores at Time 1 labeled as Time 3 and vice versa. The resulting school average score shift was below the whole cohort average (being a slight negative shift), but not extreme, and therefore was completely plausible. After correction the school proved to have an above average shift. We informed the school and its facilitator and selected a replacement school.

We sent the schools information packs containing a covering letter to the principal and introductory letters and consent forms for literacy leaders and teachers, on the understanding that staff would have time to read the information and consider whether they still wanted to be involved. Principals from all 12 schools agreed to their schools' involvement in the project.

¹⁵ The LPDP Auckland research schools were not sent this letter as their data were not included in the evaluation.

Once schools confirmed their interest in participating, we sent their LPDP facilitators the introductory information about the evaluation and followed this up with a phone call or email to confirm an interview time. We selected schools before facilitators to protect the identity of schools that might choose not to participate in the evaluation. We contacted facilitators before informing the project directors to protect the identity of facilitators who may not wish to be involved in the evaluation.

3. Student achievement

The LPDP is based on the premise that effective classroom teaching will lead to improved student achievement. The project has a focus on students who are performing at the lower end. Teachers have used students in this group as the touchstone for their effectiveness as they trialled deliberate acts of teaching throughout the project. Therefore, the analyses of this particular subgroup's shifts in achievement are important when reflecting on the effectiveness of the project.

In this chapter we present our analysis of the student achievement data using the STAR results collected by the reading schools and the asTTle results collected by the writing schools. We present two levels of data analysis for each set of results: descriptive analysis, and the result of the first round of multilevel models fitted to the data. In the case of frequency data, chi square tests have been carried out to determine the statistical significance of the associations.

The results are presented in the following order:

- Descriptive analysis of overall results in terms of STAR stanine and asTTle scores by student variables: year level, initial achievement (achievement at the start of the LPDP, Time 1), ethnicity, and gender
- Descriptive analysis of subtest results in terms of STAR raw scores by year level
- Multilevel models of overall results in terms of STAR raw scores and asTTle scores:
- STAR: effect of student level (Time 1 score, gender and ethnicity) and school level (decile and size) characteristics with students grouped within schools, and schools grouped within facilitators
- STAR: similar model to the above, but including year level in place of size (year level and size are impossible to separate because of the large number of intermediate schools), and excluding all Year 7 students
- STAR: Model for students with Time 1 scores of 1, 2, or 3 stanines (students with low initial achievement)
- asTTle: effect of student level (Time 1 score, gender, year level, and ethnicity) and school level (decile and size) characteristics with students grouped within schools and schools grouped within facilitators
- asTTle: model for students with the lowest 20 percent of Time 1 scores
- STAR and asTTle: the best-fitting model was used as a base, to which teacher variables from the quantitative data collected by LML and the teacher survey were added. These results are presented in the chapter on practitioner learning.

Reading

Descriptive analysis

The 50 reading schools undertook their testing at different times, producing groups of schools with different lengths of time between testing sessions. In the descriptive analysis we present the results for those students who had their first and last (third) testing sessions approximately 24 months apart. The pairs of test scores for 3668 students were available for the analysis of change/shift in reading scores over that period (designated Time 1 to Time 3).

Overall shifts in reading achievement

One way of interpreting the shift (or difference) in achievement in stanines for students is to use the theoretical distribution of stanines (as outlined in the previous chapter). Table 20 shows that the overall shift in students' reading achievement was greater than what would be expected without the LPDP intervention. Allowing for maturation and with no intervention, a student would be expected to remain in the same stanine across a testing period. At Time 1, the mean score for all 3668 students was 5.07, very close to the theoretical mean stanine score of 5. At Time 3, the mean score for the same students was 5.60, giving a mean shift in achievement over the 24 month period between pre- and post-intervention testing of 0.53 of a stanine, or an effect size with a 95 percent confidence interval of 0.26–0.30.

Some groups of students made larger gains than others, and these differences are described below. Of course, some individual students in the groups described made shifts smaller than the group mean shifts, and others made greater shifts.

Initial Achievement

The LPDP was intended to have a particular focus on raising the achievement of those students at the 'tail' or those who were achieving poorly. To enable an examination of the relative success of LPDP in accomplishing this, we compared the relative shift in achievement for students in stanines 1–3 with other students.

Students whose initial achievement in reading was relatively low made the greatest gains (Table 20). Students in stanines 1–3 had an average shift of 0.99 stanine, an effect size, ignoring possible regression to the mean, with a 95 percent confidence interval of 1.27 to 1.51, and students from Years 4 and 7 made the most progress.

Some of this difference will be due to regression to the mean. There was a correlation of approximately 0.8 between the Time 1 and Time 3 test results, and it can be shown theoretically that a group of students with a mean score of 2.42 (effect size in the confidence interval 1.27–1.51) at Time 1 would be expected to have a mean score of between 2.9 ($r=0.9$) and 3.4 ($r=0.8$) at Time 3, or to show a shift in the 0.5–1.0 range (with corresponding confidence intervals for effect size of 1.44–1.55 and 1.70–1.81), solely as a result of regression to the mean (their scores would be closer to the mean of 5 in the second test than in the first). There is some evidence of some slight improvement over and above the effect of regression to the mean for these low achieving students whose schools took part in the LPDP.

What is the situation for the other students? Their Time 1 mean was 5.83, and by regression to the mean we would expect their Time 3 mean to be in the 5.5–5.7 range (less of a change, because their mean was already close to the population mean; regression to the mean results in larger apparent shifts in very high and very low scores than in those close to the mean), or that their scores would *decrease* by about 0.2 (as happened in the Year 6 results). Overall, then, there is some evidence for some improvement over and above the effect of regression to the mean (confidence interval of approximate effect size of 0.25–0.31).

Table 20 **Mean stanines at Time 1 and Time 3 for each year level for students in stanines 1–3 at Time 1 and students in stanines 4–9 at Time 1**

Year Level at Time 1	N	Mean stanine T1	Mean stanine T3	Shift
Stanines 1–3				
3	77	2.53	3.25	0.71
4	99	2.33	3.45	1.12
5	83	2.35	2.86	0.51
6	37	2.24	3.22	0.97
7	525	2.44	3.52	1.08
Subtotal	821	2.42	3.41	0.99
Stanines 4–9				
3	334	6.11	6.13	0.02
4	402	5.78	6.10	0.32
5	430	5.96	6.25	0.29
6	163	5.96	5.85	-0.11
7	1518	5.73	6.32	0.60
Subtotal	2847	5.83	6.23	0.40
All students	3668	5.07	5.60	0.53

As the scores are discrete (stanine scores can only take on one of nine possible values), another way to look at shifts is to look at the percentage of students making shifts of one or more stanines, and whether the shifts are positive or negative. Table 21 shows the shifts for each possible initial score. These shifts are a combination of the effects of regression to the mean and real shifts. Those with a stanine 1 score at Time 1 cannot have a negative shift; those with a stanine 9 score cannot have a positive shift, nor can those with a stanine 8 score make a 2-stanine shift. Regression to the mean implies that all students with a stanine score of under 5 are more likely to show a positive shift than a negative one (and they did), and all students with a stanine score of over 5 are more likely to show a negative shift than a positive one (and they did, particularly those with stanine scores of 8 or 9 at Time 1).

However, regression to the mean is unlikely to cause shifts of more than 1 stanine (if the correlation between tests is in the 0.8–0.9 range), and a reasonably large percentage of the students made shifts of 2 stanines. In addition, students with stanine scores of between 4 and 6 would be expected to be almost equally likely to have negative shifts as positive ones, but the students in the study made more positive shifts than negative ones.

Over one-third of students who began in stanine one remained in stanine one (36 percent) demonstrating the difficulty of raising reading achievement of these students. However, those students beginning in stanine one who initially scored at or above the “critical score”¹⁶ level generally made shifts in their achievement. It is not

¹⁶ Elley (2000, p23) defines those scoring below the “critical” level as non-readers)

surprising that a professional development initiative focusing on lifting school-wide achievement in comprehension had less impact on those who began as non-readers.

Due to the possible ceiling effect of the test larger proportions of students in the top stanines at time point 1 were more likely to have made no shift than those who started in the lower stanines.

Overall, allowing for ceiling effects and regression to the mean, over 30 percent of the students with stanine scores of 1–3 at Time 1 made a 2-stanine positive shift, which is larger than expected. Around a third of students with Time 1 stanine scores of 3–6 made a 1-stanine positive shift, also larger than expected, as did around a quarter of those with scores of 7 or 8. These findings suggest that, generally, the LPDP had a positive effect on student achievement.

Table 21 **Percentage of students for each shift in stanine over 24 months for each Time 1 stanine group**

Stanine at T1	N	Negative shift	No shift	1 stanine shift	2+ stanine shift
1	122	–	36	27	37
2	232	13	27	28	31
3	467	11	27	34	27
4	649	9	31	37	23
5	677	13	30	34	23
6	622	18	32	33	16
7	483	24	42	26	8
8	251	37	41	22	–
9	166	52	48	–	–
All	3668	18	33	30	19

n

Ethnicity

From Table 22 it can be seen that there were no marked differences in shifts in mean achievement by ethnicity. Asian students made the largest mean shift (0.74) followed by Other European students (0.68), Other students (0.55), Māori students (0.54), New Zealand European students (0.52), and Pacific students (0.48).

This means the professional development did not reduce the initial differences in achievement between New Zealand European students and Māori, Pacific, and Asian students. The Time 3 mean stanines show that Māori, Pacific, and Asian students were on average still scoring well below New Zealand European students. On average, Pacific students scored 1.46 of a stanine lower, Māori students 1.07 of a stanine lower, and Asian students 0.72 of a stanine lower than New Zealand European students. These differences are similar to those found at Time 1 which means the gap between New Zealand European students and students of the other ethnicities listed had not decreased.

Table 22 **Mean stanines at Time 1 and Time 3 for students of different ethnic groups**

Ethnicity	N	Mean stanine T1	Mean stanine T3	Shift
NZ European/Pākehā	2034	5.56	6.08	0.52
NZ Māori	952	4.47	5.01	0.54
Pacific	375	4.14	4.62	0.48
Asian	225	4.62	5.36	0.74
Other	51	4.88	5.43	0.55
Other European	31	5.29	5.97	0.68
All	3668	5.06	5.60	0.53

Table 23 shows the percentage of students in each ethnic group making positive or negative stanine shifts. The groups in this table are not defined on the basis of initial score, so there are no effects of regression to the mean.

This table supports the findings based on the mean differences above: the shifts evident for the three largest ethnic groups were similar, and Asian students made particularly good progress (a particularly large proportion made shifts of two or more stanines).

Table 23 **Percentage of students for each shift in stanine over 24 months for students of different ethnic groups**

Ethnicity	N	Negative shift	No shift	1 stanine shift	2+ stanine shift
NZ European/Pākehā	2034	18	34	29	19
NZ Māori	952	17	33	31	18
Pacific	375	19	34	35	15
Asian	225	15	29	29	28
Other	51	16	39	24	22
Other European	31	23	23	32	23
All	3668	18	33	30	19

Gender

Table 24 shows that boys made greater gains in reading than girls. Boys had a mean shift of 0.58 while girls had a mean shift of 0.48. At Time 3 there were still differences in achievement by gender; girls had a mean stanine of 5.89 while boys had a mean stanine of 5.34. So although boys made greater gains, the gender gap in initial achievement remained.

Table 24 **Mean stanines at Time 1 and Time 3 for gender**

Gender	N	Mean stanine T1	Mean stanine T3	Shift
Male	1929	4.76	5.34	0.58
Female	1739	5.40	5.89	0.48
All	3668	5.06	5.60	0.53

The description above is confirmed by Table 25. A slightly larger percentage of boys than girls shifted by 2 stanines, and a slightly larger percentage of girls made no shift. This could be associated with the fact that, if girls on average achieved higher scores than boys, a larger percentage of girls would have had stanine scores of 8 or 9 at Time 1, and so would not have shown a large (or even any) positive shift.

Table 25 **Percentage of students for each shift in stanine over 24 months for gender**

Gender	N	Negative shift	No shift	1 stanine shift	2+ stanine shift
Male	1929	17	32	30	21
Female	1739	18	35	30	17
All	3668	18	33	30	19

Year level

The shifts in student achievement differed according to year level (Table 26). Those who were in Year 7 when their schools began the LPDP made the greatest gains with an average stanine shift of 0.72. Those who were in Year 4 when their schools began the LPDP made the next largest gains with an average stanine shift of 0.48.

Table 26 **Mean stanines at Time 1 and Time 3 for each year level**

Year Level at Time 1	N	Mean stanine T1	Mean stanine T3	Shift
3	411	5.44	5.59	0.15
4	501	5.10	5.58	0.48
5	513	5.37	5.70	0.33
6	200	5.28	5.37	0.09
7	2043	4.88	5.60	0.72
All	3668	5.06	5.60	0.53

Table 27 supports the findings based on the mean differences above: students in Year 7 were least likely to make a negative shift, and were also the most likely to make a large positive shift.

Table 27 **Percentage of students for each shift in stanine over 24 months for each year level**

Year Level at Time 1	N	Negative shift	No shift	1 stanine shift	2+ stanine shift
3	411	26	38	25	10
4	501	20	31	33	17
5	513	23	35	29	13
6	200	30	36	26	9
7	2043	13	33	31	23
All	3668	18	33	30	19

Initial achievement and ethnicity

Students whose initial achievement in reading was relatively low made the greatest gains, although, as discussed above, much of the apparent gain could be due to regression to the mean. Nonetheless, the shifts for all groups of initially low-achieving students were such that the mean stanine scores were above 3 by Time 3. Table 28 shows that both Māori and Pacific students are over-represented in the stanine 1 to 3 group at Time 1 compared with all students. Shifts in student achievement differed according to ethnicity. Other European students made the largest mean shift (1.63), but there were very few students in that group, followed by Asian students (1.35), “Other” students (1.31), New Zealand European students (1.06), Māori students (0.91), and Pacific students (0.73).

Table 28 **Mean stanines at Time 1 and Time 3 for students in stanines 1–3 at Time 1 and students in stanines 4–9 at Time 1**

Ethnicity	N	Mean stanine T1	Mean stanine T3	Shift
Stanines 1–3				
NZ European/Pākehā	293	2.45	3.51	1.06
NZ Māori	285	2.39	3.30	0.91
Pacific	145	2.42	3.15	0.73
Asian	77	2.42	3.77	1.35
Other	13	2.15	3.46	1.31
Other European	8	3.00	4.63	1.63
Subtotal	821	2.42	3.41	0.99
Stanines 4–9				
NZ European/Pākehā	1741	6.09	6.51	0.43
NZ Māori	667	5.35	5.74	0.38
Pacific	230	5.23	5.55	0.32
Asian	148	5.77	6.20	0.43
Other	38	5.82	6.11	0.29
Other European	23	6.09	6.43	0.35
Subtotal	2847	5.83	6.23	0.40
All students	3668	5.07	5.60	0.53

STAR subtests

The focus of the LPDP for reading schools was reading comprehension. An examination of the STAR subtests allows us to see whether the professional development resulted in achievement gains related to comprehension specifically. The STAR subtests of sentence comprehension and paragraph comprehension are of interest here.

STAR subtests are reported in raw score form. Subtests for Year 3–6 students have a maximum score of 10, with the exception of paragraph comprehension, which has a maximum of 20¹⁷. Subtests for Year 7–9 have a maximum score of 12, apart from paragraph comprehension, which has a maximum of 20 (Table 29).

¹⁷ The Year 3 paragraph comprehension subtest has a maximum score of 15, which has been scaled to 20 to make comparison easier.

To compare gains in paragraph comprehension with gains in other sub-tests, the scores and shifts need to be halved. Year 6 Time 1 results can be compared with Year 5 Time 3 results, and Year 6 Time 3 results can be compared with Year 7 Time 1 results, but comparisons between Year 6 Time 1 and 3 results are not meaningful, given the difference in the tests used.

At first glance it may appear in Table 29 that shifts in paragraph comprehension were consistently larger than in other areas, such as word recognition, sentence comprehension, and vocabulary range. However paragraph comprehension has a maximum score of 20, compared with 10 or 12 and accounting for these differences shows this is not the case. For example, in Year 3, the largest shift is in word recognition (1.29), as paragraph comprehension is a shift of 1.58 out of 20 marks which is comparable to 0.79 out of 10 marks.

Table 29 **Mean subtest scores at Time 1 and Time 3 by year group**

Subtest	N T1	Mean score T1	Mean score T3	Shift	Max Score ^b
Year 3					
Word recognition	411	7.44	8.73	1.29	10
Sentence comprehension	411	6.03	6.59	0.56	10
Paragraph comprehension	411	9.29 ^c	10.87	1.58	20
Vocabulary range	411	5.51	5.50	-0.01	10
Year 4					
Word recognition	501	8.10	9.29	1.19	10
Sentence comprehension	501	5.95	7.41	1.46	10
Paragraph comprehension	501	8.17	12.30	4.13	20
Vocabulary range	501	4.64	6.05	1.41	10
Year 5					
Word recognition	513	8.86	9.56	0.70	10
Sentence comprehension	513	6.70	8.30	1.60	10
Paragraph comprehension	513	10.48	14.04	3.56	20
Vocabulary range	513	5.36	7.07	1.71	10
Year 6					
Word recognition	200	9.20	10.18	– ^a	10/12
Sentence comprehension	200	7.18	7.72	– ^a	10/12
Paragraph comprehension	200	11.77	12.19	– ^a	20/20
Vocabulary range	200	6.07	7.63	– ^a	10/12
Language of advertising	-	-	7.72	– ^a	-/12
Writing style	-	-	7.84	– ^a	-/12
Year 7					
Word recognition	2042	9.49	10.73	1.24	12
Sentence comprehension	2043	6.86	8.84	1.98	12
Paragraph comprehension	2043	10.43	13.99	3.56	20
Vocabulary range	2043	6.91	8.57	1.66	12
Language of advertising	1973	7.14	9.07	1.93	12
Writing style	1973	6.83	9.18	2.35	12

^a No difference is given for Year 6 as we cannot compare the raw scores for STAR Test 4–6 (taken in Year 6) and STAR Test 7–9 (taken in Years 7 and 8)

^b Two maximum scores (e.g. 10/12) indicate maximum score for subtest taken at Time 1 and maximum score for subtest taken at Time 3

^c Mean score scaled to be maximum 20

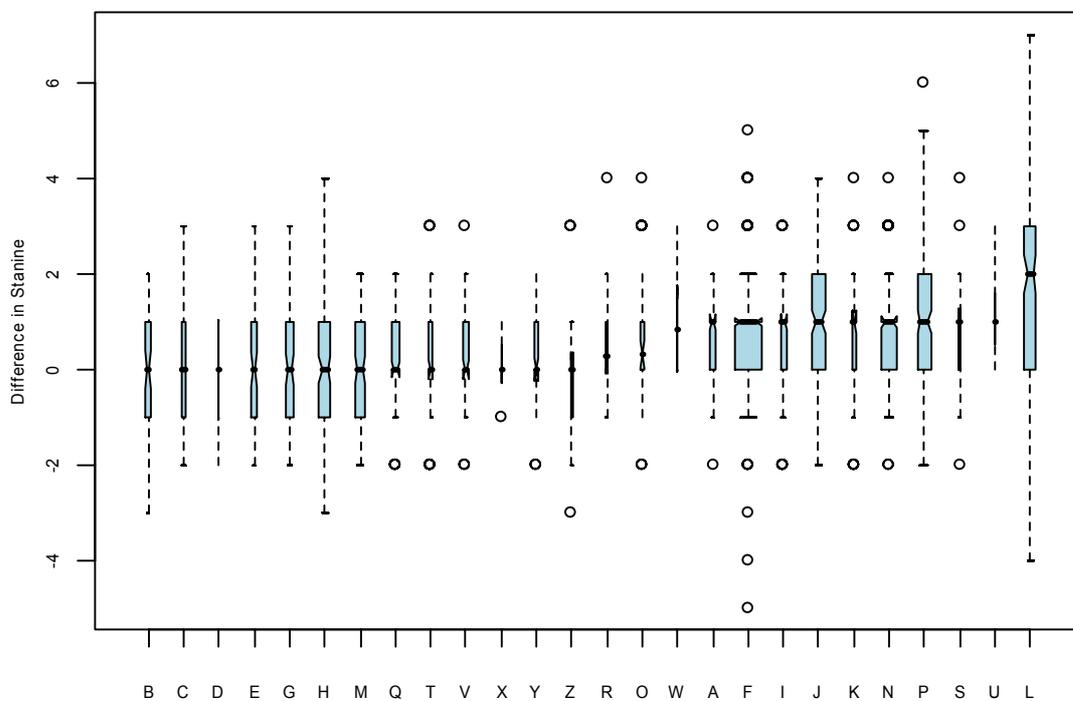
Analysis using multilevel models

In order to answer questions such as “is there a school and/or facilitator effect?” and “what is the effect of student characteristics?” the data were analysed using multilevel models.

Before getting into the details of the findings from the multilevel models, it is worth taking a look at the mean shifts found in different schools. Figure 3 uses boxplots to represent the shift for each of 26 reading schools (identified by the letters A–Z). The schools selected are the 13 with the smallest mean shift, and 13 with the largest mean shift. The schools M–Z in the middle of the plot are representative of the omitted schools. The width of each boxplot is proportional to the number of students in the schools (School F is the largest school, and W is one of the smallest); the thick lines in the middle of the boxes represents the median shift for the school, and the schools are sorted in ascending order by median. A rough guide as to whether the shifts in two schools are significantly different or not, is given by the notches in the sides of the boxes (the clearest examples are schools H and J): the notches represent approximate 95 percent confidence intervals for the median shift.

The discrete nature of the data is made very clear in this plot: the upper limit of each of the box-parts indicates the upper quartile (a quarter of the shifts in the school were greater than this value) and the lower limit indicates the lower quartile (a quarter of the shifts were smaller than this value), and the quartile values all correspond to a shift of a whole number of stanines (0, or 1, or 2, ...). In schools with many zero shifts, the upper or lower quartile and the median are both equal to 0, and there appears to be only half of the box (e.g. schools Q, F, and N). The circles above the boxes represent “outliers”; shifts that were greater or smaller than would be expected given the rest of the data for a school. These, too, lie in horizontal bands corresponding to a whole number of stanines shifted.

Figure 3 Stanine shifts for 26 reading schools



From this plot it appears that some schools made larger mean shifts than others, but the variation between individuals within the schools is considerable. Almost all schools had one or more students who went down by 2

stanines and one or more who went up by 2 stanines, and in several schools the shifts varied between 3 and -3 stanines, with the most extreme individual shifts being up or down 6 stanines.

The following section describes the results of the multilevel analyses that allow us to account for the variation within schools and between schools, and to investigate the extent to which the differences can be attributed to student differences (gender and ethnicity) or school differences (decile, size and cohort). Because of the discrete nature of stanine scores, the raw scores were used in the multilevel models.

In addition to the school and student effects, the Time 1 score was added to the model in order to measure progress between Time 1 and Time 3. This allows us to identify student or school factors that are associated with Time 3 scores that are higher or lower than would be expected, given the Time 1 score.

We report three multilevel models: the “all-schools model” ($n=6133$; 47 schools) based on data from all school types but excluding year level (Table 1 in Appendix B), and “the year-level model” ($n=1921$; 35 schools) excluding schools with only Year 7 students at the start of the project (intermediate, restricted composite and secondary schools) but including year level (Table 2 in Appendix B). It is therefore impossible to separate out school type and year level. The “low-achieving students” model (Table 3 in Appendix B) was fitted to students with Time 1 scores of 1–3 stanines ($n=821$).

In the chapter on practitioner learning, we add teacher differences at the school level to the all-schools model (Table 4 in Appendix B).

Is there a school and/or facilitator effect?

The three-level all-schools model showed that there was a significant school effect, with schools alone accounting for 29 percent of the variance within the model. This variability is due to factors that we have not been able to take account of in our model, and is likely to be made up of class and teacher differences, as well as differences in school culture or parental support for learning.

The facilitator effect was also significant in the model accounting for an extra five percent of the total variation. This means that, for the reading schools, there were differences between the facilitators that were manifest (via their effect on teachers) in student achievement.

What is the effect of student characteristics?

In the all-school model there was no significant effect for gender, but there was a significant effect for ethnicity. The difference between Māori and New Zealand European groups was not quite statistically significant, but the difference between Pacific and New Zealand European groups was statistically significant, with Pacific students achieving lower Time 3 scores, taking their Time 1 scores and other variables into account. Failing to allow for the clustering effect in the descriptive analysis led to a slight overestimation of the difference between genders, and therefore this difference is no longer significant when the data structure is allowed for.

What is the effect of school characteristics?

School size and decile were included in the all-school model and schools considered small (1–99 students), small-medium (100–199 students) or medium-large (300–499 students) had lower mean scores than the largest schools (500+ students). The largest schools were mainly intermediates, so some of this apparent school size effect may have more to do with the year level of the students than with the size of the school.

There was no significant effect for school decile: in other words, LPDP worked equally well in schools of different decile. (Table 1, Appendix B).

Were there differences by cohort?

There were no significant differences in shifts in student achievement by LPDP cohort (i.e., February 2004 or July 2004).

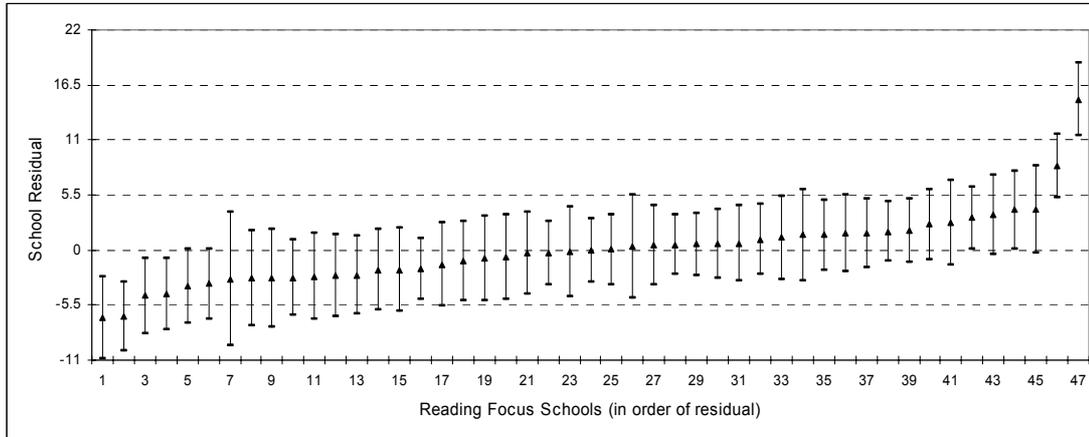
What about the year-level model?

This model is useful mainly to compare the year level effects for Years 3–6 students (there were no Year 7 students in the data used), and only represents the 35 full primary, contributing, composite, and special schools. For this subset of the data there were no significant gender, facilitator, decile, school size, or cohort effects (Table 2, Appendix B). There were significant effects for ethnicity and year level, as well as a school effect. Year 5 and 6 students achieved greater shifts in score than Year 3 students, after allowing for Time 1 score and the other variables in the model. In this younger age-group, Asian students scored significantly less well than New Zealand European students, but there was no significant difference between Māori or Pacific students and New Zealand European students, although the ethnic differences, such as they were, were in the same direction and of a similar size to those in the all-students model. The sample size used in the year-level model was smaller, and consequently differences needed to be larger to be statistically significant. As the results are similar to the all-students model, although not significant, we can conclude that the ethnicity effect is a real effect for LPDP.

Can we see which schools are doing better or worse than expected?

We can compare students' actual Time 3 achievement score with the score predicted by a model: the difference is known as the 'residual' as it is the left-over or unexplained variability in the data (the model could not predict it). Figure 4 shows the residuals for the all-schools model. A plot like this is sometimes called a caterpillar plot. If the students in all the schools all did exactly as expected (i.e., as predicted by the model, given information about Time 1 score, gender, ethnicity, decile, size, and LPDP cohort), then all the residuals would be zero, so the horizontal line where the school residual is 0 is important, as it allows us to identify schools where students did better or worse than expected. The triangles show the mean residuals for each of the 47 schools, arranged from lowest to highest. The schools with triangles below the 0 line did worse than expected and those above did better than expected. The bars above and below each triangle show the confidence interval for the mean residual for each school. The students at schools with an upper bar below the zero line did, on average, significantly worse (schools 1, 2, 3, and 4). Students at those schools with a lower bar above the 0 line did, on average, significantly better (probably schools 42, 43, 44, 45, 46 and 47, although strictly speaking the bars for schools 43 and 45 just cross the zero line). Students in all the other schools were achieving more or less as expected. There is no really sharp discontinuity between the schools, or break in the caterpillar. Overall, then, the effect of LPDP was similar for most of the schools. There were a few schools where the results were better and a few where the results were worse, but the more and less successful schools did not differ from the majority by much.

Figure 4 Reading school residuals (for Time 3 score) showing 95% confidence intervals



How did the low achieving students perform?

A similar model was used to analyse only the group of students who started at stanine 1, 2, or 3 at Time 1 (1427 students). Again, the model showed a significant school effect accounting for almost 30 percent of the variance, but no facilitator effect, i.e. different facilitators were not making more of an impact for low-achieving students. Gender was not significant in the model. For this sub-group, both Māori and Pacific students continued to achieve significantly lower scores than New Zealand European students.

There were no significant school level background characteristics. The details of this model can be found in Appendix B.

Writing schools

Descriptive analysis

The 51 writing schools also undertook their testing at different times, giving groups of schools with different lengths of time between testing sessions. We present the results for those students who had their first and last (third) testing sessions approximately 24 months apart. There were 1139 students for whom these data were available.

Overall shifts in writing achievement

The gains made by the students in the writing schools were greater than those the national asTTle data indicates could be expected over 24 months without the intervention. These gains can be expressed in two ways: as asTTle scores or as curriculum levels. The mean growth per year in asTTle writing for primary and intermediate school students nationally is generally up to 50 points.¹⁸ The mean shift in student achievement over the 24 month LPDP

¹⁸ See asTTle Version 4 Manual 1.1, Chapter 3, Updated August 2005, page 25 at http://www.tki.org.nz/r/asttle/user-manual_e.php

period (T1 to T3) was 129.8 points, 29.8 points more than expected, and equivalent to an effect size of 1.17, with confidence interval of 1.09–1.25¹⁹.

With respect to curriculum sub-levels, the asTTle volume 4 manual states that:

Each curriculum sub-level covers between 40 and 50 points, depending on subject and curriculum level. This means that on average students gain between one sub-level per two years to one sub-level per year, depending on subject, curriculum level, and their age...If asTTle scores show students are improving by one curriculum level in a two year period they are learning more quickly than expected. (asTTle Volume 4 Manual 1.1, Chapter 3, updated August 2005).

According to this definition, 87 percent of students who participated in the LPDP for a 24 month period made progress greater than expected, with half shifting 3 or more curriculum levels.

If we remove the maturation effect, assuming a single sublevel over two years, or a mean increase of 40 points, we get a mean shift of 89.8 asTTle points, or an effect size between 0.74–0.87, and a mean shift of 29.8 asTTle points or an effect size of between 0.20–0.31, assuming a mean increase of 100 points.

Initial Achievement

Table 30 shows that students whose initial achievement in writing was relatively low made the greatest gains. Students in the lowest 20 percent of achievement at each year level had an overall mean score shift of 206.1 points, compared with an overall mean score shift of 129.8 points for all students. The progress appears to decrease with year level, from 220.5 for Year 4 to 186.6 for Year 7. However, the range of asTTle points covered by each sub-level is much wider at the lower curriculum levels, and this may be reflected in the mean shifts.

Regression to the mean suggests that these students might be expected to achieve scores of 383 ($r=0.7$) to 414 ($r=0.6$) at Time 3, which, with maturation (68–116 for one or two years at that score level) added, would be somewhere between 451 and 530, or a shift of between 189 and 268. Taking a relatively optimistic view of things, or at least not the most conservative estimates of both regression to the mean and maturation, at the lower level of expected shifts, the students made progress over and above what would be expected by regression to the mean and maturation alone²⁰.

¹⁹ The standard deviation in the sample was 109 at Time 1, slightly greater than 100, so the effect size is smaller than 1.298.

²⁰ Effect sizes calculated taking into account the fact that the samples were dependent, but not making any adjustment for regression to the mean give confidence intervals of 1.37–1.87 for the bottom 20 percent with a 40-point correction for maturation, or 0.82–1.18 with a 100-point correction.

Table 30 **Mean scores at Time 1 and Time 3 for each year for the lowest 20% of distribution at Time 1 and all other students**

Year Level at Time 1	N	Mean score T1	Mean score T3	Shift
4	80	204.7	425.2	220.5
5	64	273.5	474.0	200.5
6	29	294.9	506.2	211.3
7	49	321.2	507.8	186.6
Lowest 20%	222	262.0	468.1	206.1
4	327	417.1	529.6	112.5
5	273	472.6	581.0	108.4
6	122	507.3	621.2	113.9
7	195	515.6	627.1	111.6
Other	917	466.6	577.8	111.3

What is the position for the other 80 percent of the students? With a mean Time 1 score of 466.6, regression to the mean alone suggests a Time 3 score of between 483 ($r=0.7$) and 488 ($r=0.6$), which is a slight shift towards the mean of 500, as the initial score was relatively close to the mean. Allowing for a maturation increase of between 48 and 96 (one or two years at Level 2a), time and regression to the mean alone suggest an increase of between 531 and 584, or a mean shift of between 64 and 117. Again, it appears likely that there was a shift above that expected by regression to the mean and maturation, but this was by no means certain.

Effect sizes calculated taking into account the fact that the samples were dependent, but not making any adjustment for regression to the mean give confidence intervals of 0.80–0.99 for the top 80 percent with a 40-point correction for maturation, or 0.07–0.19 with a 100-point correction.

Table 31 shows the shifts in curriculum levels. Taking both maturation and regression to the mean into account, we have evidence of positive shifts that were greater than expected, and fewer negative shifts than would be expected from regression to the mean. Over two-fifths of students (43 percent) who did not achieve a curriculum level 2 basic at Time 1 made a large shift (3+ levels), compared with 39 percent who began at curriculum level 3 basic, and 35 percent who began at curriculum level 4 basic.

Table 31 Percentage of students for each shift in curriculum level over 24 months

Curriculum Level at T1	N	Negative shift	No shift	1 level shift	2 level shift	3+ level shift
<2b	75	–	8	24	25	43
2b	242	1	7	12	15	65
2p	232	3	8	14	19	57
2a	199	4	7	17	22	51
3b	184	6	13	20	23	39
3p	119	12	11	22	18	38
3a	57	9	11	18	32	32
4b	23	17	13	13	22	35
4p	5	20	20	20	40	–
4a	2	0	100	0	–	–
>4a	1	100	0	–	–	–
All	1139	5	9	17	20	50

Students who made negative shifts, or no shift, were predominantly at higher curriculum levels, as would be expected with regression to the mean, but there were fewer students in these categories than the correlation between the tests scores suggest might be expected.

These greater than expected shifts occurred across the range of student characteristics, as reported below.

Ethnicity

Shifts in student achievement differed according to ethnicity. Table 32 shows that the largest mean score shifts were made by “Other” students and New Zealand European students (139.8 and 132.4, respectively), followed by Asian students (125.0) and Pacific students (123.2). Māori students made the smallest mean score shift (121.9). However, the numbers of Asian, Other, and Other European students are too low to make valid comparisons. LPDP did not close the existing ethnic gaps in mean achievement. At Time 3, Māori students on average achieved below New Zealand European students by 38.6 compared with a difference of 28.1 points of Time 1. The equivalent figures for Pacific students were 12.6 and 3.4 at Time 3 and Time 1, respectively.

Table 32 Mean score at Time 1 and Time 3 by ethnicity

Ethnicity	N	Mean score T1	Mean score T3	Shift
NZ European/Pākehā	777	429.3	561.7	132.4
NZ Māori	210	401.2	523.0	121.9
Pacific	70	425.8	549.1	123.2
Asian	39	496.1	621.1	125.0
Other	32	429.7	569.5	139.8
Other European	10	500.4	607.4	107.0
All	1139	426.7	556.5	129.8

The ethnicity of one student was unknown

If we allow a maturation change of 100 points over 2 years, this would give us rather approximate effect sizes²¹ of 0.22 for Māori, 0.23 for Pacific, 0.25 for Asian, and 0.32 for New Zealand European, ignoring the minority groups. These effect sizes would be classed as moderate for New Zealand Europeans, and small for the other ethnic groups. A maturation change of 100 points may be conservative though. Table 33, where the changes are measured by shift in curriculum level, indicates almost half of the students made greater advances (3 or more sub-levels) than expected by maturation alone (one or two sub-levels in 24 months). Looked at in terms of curriculum levels, there is no indication of one ethnic group making greater advances than any other.

Table 33 **Percentage of students for each shift in curriculum level over 24 months for students of different ethnic groups**

Ethnicity	N	Negative shift	No shift	1 level shift	2 level shift	3+ level shift
NZ European/Pākehā	777	3	9	16	21	50
NZ Māori	210	8	11	17	15	48
Pacific	70	6	3	20	24	47
Asian	39	5	8	10	31	46
Other	32	6	6	13	25	50
Other European	10	0	20	20	10	50
All	1139	5	9	17	20	50

The ethnicity of one student was unknown

Gender

At Time 1 the mean asTTle score for girls was approximately 44 points ahead of that of boys (Table 34). Boys and girls made very similar gains in writing. Boys had a mean shift of 129.20 points while girls had a mean shift of 130.29 points (approximate effect sizes of 0.30 for both groups).

Table 34 **Mean scores at Time 1 and Time 3 by gender**

Gender	N	Mean score T1	Mean score T3	Shift
Male	566	404.71	533.91	129.20
Female	573	448.42	578.71	130.29
All	1139	426.70	556.45	129.75

The less conservative estimate of extent of change based on curriculum level is in Table 35, where it appears that girls may have made slightly greater changes in terms of curriculum level than boys. This is probably associated with the boys' lower starting point. At the lower curriculum levels more points are needed to change sub-levels, so that while the boys did, on average, increase by the same number of asTTle *points*, they did not shift by the same number of *sub-levels*.

²¹ The approximate effect size is calculated by subtracting 100 from the score for maturation, and then dividing by 100 (the standard deviation).

Table 35 **Percentage of students for each shift in curriculum level over 24 months by gender**

Ethnicity	N	Negative shift	No shift	1 level shift	2 level shift	3+ level shift
Male	566	5	11	18	20	46
Female	573	3	7	15	20	54
All	1139	5	9	17	20	50

Year level

The shifts in student achievement differed according to year level. Table 36 shows that students in Years 4 and 6 made the greatest gains with mean shifts of 133.76 and 132.61, respectively. These shifts correspond to approximate effect sizes, corrected for maturation, of 0.26–0.34.

Table 36 **Mean scores at Time 1 and Time 3 for each year**

Year Level at Time 1	N	Mean score T1	Mean score T3	Shift
4	407	375.34	509.11	133.76
5	337	434.81	560.68	125.87
6	151	466.48	599.09	132.61
7	244	476.55	603.18	126.63
All	1139	426.70	556.45	129.75

Table 37 shows that, with a less conservative estimate of anticipated progress, around half of the students in all year levels made more progress than anticipated over the 24 months.

Table 37 **Percentage of students for each shift in curriculum level over 24 months for students of different year levels**

Ethnicity	N	Negative shift	No shift	1 level shift	2 level shift	3+ level shift
4	407	4	10	18	22	46
5	337	4	8	16	23	48
6	151	7	8	13	15	57
7	244	5	8	16	16	54
All	1139	5	9	17	20	50

Initial achievement and ethnicity

Students whose initial achievement in writing was relatively low made the greatest apparent gains. The number of low-achieving students in all ethnic groups other than New Zealand European and Māori in the Time 1 test was too small to allow meaningful comparisons. Table 38 shows the results for the two larger groups. The gains made by students in both ethnic groups were approximately equal (allowing for regression to the mean and maturation).

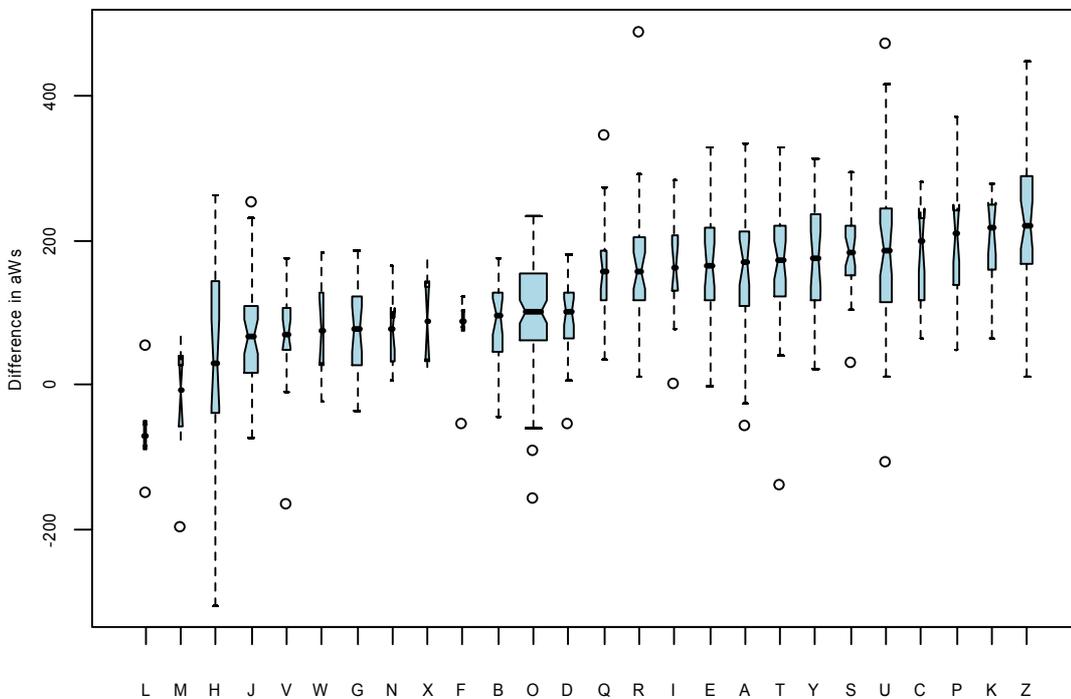
Table 38 Mean scores at Time 1 and Time 3 for the lowest 20% of distribution at Time 1 and all other students

Ethnicity	N	Mean score T1	Mean score T3	Shift
NZ European/Pākehā	143	259.16	467.80	208.64
NZ Māori	55	265.27	460.47	195.20
Lowest 20%	222	262.02	468.08	206.06
NZ European/Pākehā	634	467.66	582.84	115.19
NZ Māori	155	449.39	545.25	95.86
Other	917	466.57	577.84	111.27

Analysis using multilevel models

A look at the variability within and between schools for the mean differences in writing score shows greater variability between schools (Figure 5) than there was for the reading schools. The plot displays the mean score differences for the 13 schools with the lowest shifts and the 13 schools with the highest shifts. The mean shifts themselves show greater variability compared to the reading stanine shifts, as there are more possible asTTle score points. The greater variability may be associated with the feature of the asTTle scores that the range of scores associated with a particular sub-level of the curriculum is wider for the lower levels (over 68 points) than for the higher levels (under 25 points).

Figure 5 asTTle score shifts for 26 writing schools



The writing schools included fewer schools that only had Year 7 students in the project, so we did not have to fit a model based on a subset of schools to investigate the year level effect, as we did for reading schools.

For writing schools, we report on an all-student model, which like the corresponding model for reading schools included Time 1 score, gender and ethnicity at the student level, and decile, size, cohort, and year level at the school level (Table 5 in Appendix B). We also report a low achieving students model, that was fitted to the scores of the lowest-scoring 20 percent of the students in each year level at Time 1 (Table 6 in Appendix B).

In the chapter on practitioner learning, we add teacher differences at the school level to the all-schools model (Table 7 in Appendix B).

Was there a school and/or facilitator effect?

A three-level model was fitted to the asTTle score at Time 3 taking into account the Time 1 score along with any measured school effects. The model showed a significant school effect in the data, accounting for 23 percent of the variance within the model. Differences between schools accounted for slightly more of the variance in the all-school model for reading. One difference between the sample of reading and writing schools that may be associated with this difference, is that intermediate schools were over-represented in the reading schools, and provided the large majority of the students. The all-school models included schools size, but no other variables that would capture differences between school types, and the variability for any such differences would be lumped together as school level variation, which would then be expected to be greater for the reading schools than the writing schools.

There was virtually no facilitator effect in the data.²² It is impossible to tell whether this was because there were fewer qualitative differences between the facilitators of the reading schools than of the writing schools, or whether there were fewer opportunities for the differences to affect first the teachers and then, through them, the students for the writing schools.

What was the effect of student characteristics?

Girls had significantly higher scores at Time 3 than boys, after taking their Time 1 scores, year level, and the school-level variables into account. Māori students had significantly lower scores than New Zealand European students (taking other variables into account), but the differences for the other ethnic groups was not statistically significant. Students who started in Years 4 and 5 had significantly lower scores than those students who started in Year 7. Again, the added benefit of taking the data structure into account is shown here. The difference between girls and boys had been underestimated in the descriptive analysis and is a much stronger relationship than shown earlier. The difference between Māori and New Zealand European students has been confirmed.

What was the effect of school characteristics?

Students in low decile schools (decile 1 or 2) had significantly lower scores than students in high decile schools (decile 9 or 10), taking other variables into account. Overall, there was no significant effect for school size. This means that LPDP does not raise student achievement in writing in low decile schools as effectively as it does in high decile schools.

²² Although there was virtually no facilitator effect in the data, we used the three level model to be consistent with the analysis of the reading schools, and because models that recognise the clustered nature of the data should give more robust estimates of variable effects, such as gender or ethnicity, than models that do not.

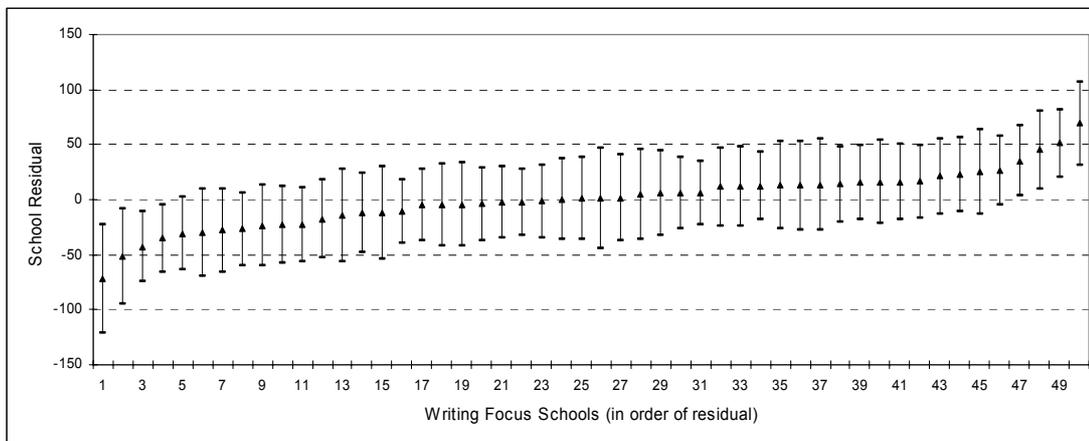
Were there differences by cohort or length of time in the project?

The multilevel modelling showed there were no significant differences in shifts in student achievement according to LPDP cohort (i.e., February 2004 or July 2004).

Can we see which schools were doing better or worse than expected?

Again, the model allowed us to estimate for each school the amount by which its results differed from what might have been expected, given all the student and school background data. Figure 6 shows that given their background characteristics, four schools (those with a lower bar above the zero line) may have achieved results that were higher than expected. Four other schools (with an upper bar below the zero line) achieved lower results than expected.

Figure 6 **Writing School Residuals (for Time 3 score) showing 95% confidence intervals**



How did the low achieving students perform?

The model used to analyse the group of 278 students who started in the lowest 20% at Time 1 showed a significant school effect, accounting for 19 percent of the variance. There was no facilitator effect. There were no statistically significant differences by ethnicity, but girls had significantly higher scores at Time 3 than boys. At the schools level, there was no significant school size effect, but students in low-decile schools had significantly lower scores at Time 3 when compared with students in both mid- and high-decile schools, taking all other variables into account. The details of this model can be found in Appendix B.

Summary

Overall, the gains in reading and writing achievement by students from schools in the LPDP, after taking into account expected growth and maturation, were greater than those that could be expected without the intervention.

The analysis of student achievement data has revealed a complex picture of findings. Taken together, the descriptive analysis and the multilevel modelling analysis allows us to identify a number of patterns in the findings.

- Some of the greatest gains were made by the lowest performing students, although over one third of students in reading schools who began in stanine one, remained in stanine one;

- There was no significant effect for gender in reading schools, but in the writing schools, girls had significantly higher scores than boys at Time 3 after taking initial score etc into account.
- In the writing schools students who started in Years 4 and 5 had significantly lower shifts in score than those students who started in Year 7 after allowing for Time 1 score and taking other variables into account. In the reading schools Year 5 and 6 students achieved greater shifts in score than Year 3 students, after allowing for Time 1 score and the other variables in the model;
- In the multilevel models some significant effects for ethnicity remained: for reading schools Pacific students had smaller shifts than New Zealand European students, and for writing schools Māori students had smaller shifts than New Zealand European students. The models focusing on low achieving students also showed that both Māori and Pacific students who started in this group did not do as well as expected;

There were large significant school effects in reading and writing schools. This means one of the greatest indicators of student progress was the particular school students attended, regardless of the school background characteristics, such as decile or size. There was a significant facilitator effect in reading schools, but not in writing schools.

- Small, small-medium, or medium-large reading schools, had students with significantly lower scores compared with the largest schools (500+). The largest schools were mainly intermediates, so some of this apparent school size effect may have more to do with the year level of the students than with the size of the school. There was no significant effect for school size in the writing schools.
- There was no significant effect for school decile in reading schools. Students in low decile writing schools scored significantly lower than their high decile schools counterparts.
- The effectiveness of the LPDP was similar across project experiences; there were no significant differences according to cohort in the project (but we were only able to compare the first and second cohorts).

4. Practitioner learning

The LPDP is an inquiry-based project that aims to improve practitioners' content, and pedagogical content knowledge, and for the transfer of this knowledge to their teaching practice in order to lift student achievement. The theoretical underpinnings of its approach are that learning is contextual, deriving from the activities that are shared with others. Key to changing practice is gaining a shared understanding of the goals that the learning is about. Also key to changing practice is shared activity focused on evidence: of student learning, of teacher practice, analysed in relation to shared goals and what is known about effective practice. Thus LPDP seeks to strengthen the practice of inquiry about their own practice among the teachers it works with. Through their LPDP participation, it was expected that they would gain both knowledge of effective and ineffective practice, knowledge of how to interpret student achievement data in formative ways and be able to provide students with useful feedback and feed-forward in the classroom, and the ability to use that knowledge to change if the evidence pointed to the need for change.

In this chapter we present perceptions of practitioners' learning over the course of the LPDP as reported in case study interviews and the evaluation questionnaires, and the analysis of changes in the scenario ratings collected by LML, which provides another window into practitioners' learning through their participation in LPDP.

When presenting data from the case study interview questions and evaluation questionnaires we report separately the responses from literacy leaders and teachers in most instances. When we combine their responses we use the term "practitioners". When presenting the responses to the scenario ratings we use the term "staff" as these were completed by principals, literacy leaders, and teachers without differentiating between the three groups.

When reading this chapter it is important to remember that:

- staff completed the scenario ratings we report on at the start and end of their LPDP professional development;
- case study data were collected in March 2006; and
- evaluation questionnaires were distributed in August 2006, and practitioners' ratings of their skills and knowledge at the start of their LPDP professional development were made retrospectively.

In some instances we have presented respondents' mean ratings of their skills and knowledge prior to the LPDP and at the time of the survey, and presented the mean size of the shift. In all other instances we have presented their responses in frequency tables.

We present the statistically significant associations between practitioners' responses and student achievement to identify factors that support student learning and achievement.

Awareness of the LPDP goals

Table 30 shows responses to an open-ended question asking practitioners to identify the main goals of the LPDP. By the time of the survey, most literacy leaders identified improving classroom practice and improving student learning and achievement as goals (82 percent and 63 percent respectively). However, only 33 percent identified

improving teacher content knowledge and 28 percent identified building professional learning communities as LPDP goals.

Overall, teachers had less awareness of these goals than literacy leaders, although their responses followed a similar pattern. Sixty-nine percent of teachers identified improving classroom practice as a main goal. However just over half (55 percent) saw improving student achievement, less than one-fifth (19 percent) building teacher content knowledge, and a very small proportion (4 percent) saw building professional learning communities, as LPDP goals.

Table 39 **Practitioners' understanding of the main goals of the LPDP**

	Literacy leaders (n=83)		Teachers (n=137)	
	N	%	N	%
Improve transfer of understanding of literacy pedagogy to practice	68	82	95	69
Improve student learning and achievement	52	63	76	55
Improve teacher content knowledge	27	33	26	19
Build professional learning communities	23	28	6	4

Practitioners' perceptions of their learning

Most of the teachers and literacy leaders thought the LPDP had some positive impact on their data literacy, pedagogical content knowledge, classroom literacy practice, and capability of lifting student achievement.

Literacy leaders rated the effectiveness of the LPDP more highly than did teachers in building their data literacy and content knowledge. Around two-thirds of literacy leaders thought the LPDP was "very effective" in these two areas (70 and 67 percent, respectively) compared with just over one-third of teachers (35 and 37 percent, retrospectively).

Seven of the 11 literacy leaders who did not comment on the impact of the LPDP on their classroom literacy practice or their capability to lift student achievement were those without classroom responsibilities.

Table 40 **Percentage of practitioners' ratings of the effectiveness of the LPDP in building their literacy capabilities**

Effectiveness of the LPDP in building your:		Very effective		Quite effective		Not very effective		Not at all effective		No response	
		N	%	N	%	N	%	N	%	N	%
Ability to interpret and use achievement data	Literacy leader	58	70	23	28	2	2	-	-	-	-
	Teacher	48	35	76	55	11	8	2	1	1	<1
Pedagogical content knowledge in literacy	Literacy leader	56	67	25	30	2	2	-	-	-	-
	Teacher	51	37	75	55	8	6	2	1	1	<1
Classroom literacy practice	Literacy leader	49	59	20	24	3	4	-	-	11	13
	Teacher	80	58	46	34	8	6	1	<1	2	1
Capability to lift student literacy achievement	Literacy leader	44	53	25	30	3	4	-	-	11	13
	Teacher	55	40	71	52	7	5	3	2	1	<1

Number of literacy leaders = 83; Number of teachers = 137

In the following section we look more closely at practitioners' perceptions of changes in their capability as a result of their participating in the LPDP. We also report how schools' mean shifts in self-reported capability relate to schools' mean shifts in student achievement. To have the clearest picture of how LPDP practitioner learning was related to student achievement, we would need to link individual teachers and students, but the data to do this were not available.

Data literacy

Literacy leaders and teachers in the 12 case study schools generally felt positive about the impact of the LPDP on their ability to interpret student achievement data.

I never really looked deeply at the data before. With Probe you're not just looking at accuracy and comprehension. We looked at specific areas of need. We did this with STAR too...We found their [students'] specific needs—especially that their inferential strategies were weak. (Teacher)

I didn't have much idea about stanines. I knew they were there but...I didn't know what they meant. It was the way you could see where the weaknesses were...Having a target group to concentrate on was really good. (Principal)

Now I know how to see an overall picture—being able to see the gaps in specific areas. Before it was much more general—who's doing well and who's not doing well. (Literacy leader)

Tables 32 and 33 show a marked shift in literacy leaders' and teachers' ratings of three areas. Their ability to

- use assessment tools,
- interpret student data in relation to national norms and expected patterns of progress, and
- use student achievement data to work out what to teach next

have increased since beginning the LPDP, with literacy leaders reporting slightly greater shifts than teachers. The means moved from being “not very strong” pre-LPDP to “quite strong” or “strong” at the end. The largest shift was literacy leaders’ and teachers’ abilities to use assessment tools such as asTTle and STAR (1.69 and 1.37 respectively on a scale of 1–4). The smallest shift was in interpreting student data in relation to expected patterns of progress (1.24 for literacy leaders and 1.04 for teachers).

Table 41 **Mean ratings of literacy leaders’ pre-LPDP and current skills in using data**

	Pre LPDP mean	Current mean	Shift
Use assessment tools such as asTTle and STAR	1.71	3.40	1.69
Interpret student data in relation to national norms	2.17	3.44	1.27
Interpret student data in relation to expected patterns of progress	2.17	3.41	1.24
Use student achievement data to work out what to teach next	2.27	3.60	3.11

* 1 = Not at all strong, 2 = Not very strong, 3 = Quite strong, 4 = Strong

Table 42 **Mean ratings of teachers’ pre-LPDP and current skills in using data**

	Pre LPDP mean	Current LPDP Mean	Shift
Use assessment tools such as asTTle and STAR	1.78	3.15	1.37
Interpret student data in relation to national norms	2.07	3.17	1.10
Interpret student data in relation to expected patterns of progress	2.08	3.12	1.04
Use student achievement data to work out what to teach next	2.26	3.39	1.13

* 1 = Not at all strong, 2 = Not very strong, 3 = Quite strong, 4 = Strong

Pedagogical content knowledge

Perceptions of growth in pedagogical content knowledge

Table 35 shows that literacy leaders thought that, prior to the LPDP, they understood the theoretical principles that underpin effective literacy teaching and learning, how to put these theoretical principles into practice, what effective literacy practice looks like, and student learning progressions in literacy “not very well” to “quite well” (2.28–2.54). They thought that by the time of the survey they understood these things “quite well” to “very well” (3.51–3.75).

Table 43 **Mean ratings of literacy leaders’ pre-LPDP and current understanding of pedagogical content knowledge**

	Pre LPDP mean	Current Mean	Shift
The theoretical principles that underpin effective literacy teaching and learning	2.46	3.64	1.18
How to put the theoretical principles into practice	2.28	3.51	1.23
What effective literacy practice looks like	2.54	3.75	1.21
Student learning progressions in literacy (reading or writing)	2.54	3.65	1.11

* 1 = Not at all well, 2 = Not very well, 3 = Quite well, 4 = Very well

Teachers also shifted their ratings over the course of their participation in the LPDP, from means just above the “not very well” level (2.10–2.36) to means just above the “quite well” level (3.22–3.47).

Table 44 **Mean rating of teachers’ pre-LPDP and current understanding of pedagogical content knowledge**

	Pre LPDP mean	Current Mean	Shift
The theoretical principles that underpin effective literacy teaching and learning	2.36	3.27	0.91
How to put the theoretical principles into practice	2.10	3.22	1.12
What effective literacy practice looks like	2.33	3.47	1.14
Student learning progressions in literacy (reading or writing)	2.34	3.36	1.02

* 1 = Not at all well, 2 = Not very well, 3 = Quite well, 4 = Very well

Risks associated with low levels of theoretical knowledge

According to Joyce and Showers (2002) the risk in teacher resistance to theory is that teachers will be unable to use new skills in flexible ways, and that the skills will become the latest “recipe”. An example of the limitations caused by a recipe approach is the concern some case study school teachers raised about knowing how to work out the ‘where to next’ from student achievement data. They saw using achievement data to work out what and how to teach next as a challenge because they felt their literacy content knowledge and pedagogical content knowledge were not sufficiently developed to be able to use the data for teaching. During the LPDP, facilitators supported teachers to examine achievement data to work out student strengths and weaknesses. Several participants, however, expressed insecurities about their ability to work out the implications of data for teaching practice on their own:

Using asTTle (the where to next) is still a bit weak personally. More teacher content knowledge is needed in this area. (Teacher)

Literacy leaders also expressed this concern:

We don’t feel we are very good at it. For STAR data we can do the numbers but it is the “so what?” We need a deeper understanding of how students learn. (Literacy leader)

Overall, literacy leaders expressed greater confidence than teachers in their capacity to do this within their current literacy focus (reading or writing) but some expressed concern about their ability to work out “the where to next” when there was a new focus and the facilitator was not available to provide support.

Supporting practitioners to build pedagogical content knowledge

Case study and survey responses provide information useful for considering possible ways in which teachers could be better supported to build their pedagogical content knowledge.

Building teacher beliefs in the importance of pedagogical content knowledge

Survey responses suggest that one of the reasons for teacher resistance to ‘theory’ was that it did not seem relevant or important. We asked practitioners to rate how *important* they considered it was to understand the theoretical principles underpinning effective reading comprehension and writing, how to put these principles into

practice, what effective literacy practice looks like, and student progressions in reading or writing. Nearly all literacy leaders and teachers (over 85 percent) considered all of these to be “very important” with the exception of understanding the theoretical principles underpinning effective reading comprehension or writing: approximately two-thirds (70 percent) of literacy leaders and only 51 percent of teachers considered this to be “very important”.

The lower ratings given by practitioners to the importance of understanding theories that underpin effective reading comprehension and writing were consistent with the finding that only 33 percent of literacy leaders and 19 percent of teachers showed an awareness that improved understanding of literacy content knowledge was one of the main goals of the LPDP.

Another possible reason only 51 percent of teachers considered this understanding to be “very important” is that they may not have experienced the cognitive dissonance needed to question their existing theories. While most literacy leaders considered the LPDP to be “very effective” in helping them to think critically about their theories of literacy teaching, only half of teachers rated LPDP as “very effective” in this respect (Table 37).

Table 45 **Effectiveness of the LPDP in helping practitioners think critically about their theories about literacy teaching**

	Very effective		Quite effective		Not very Effective		Not at all effective		No response	
	N	%	N	%	N	%	N	%	N	%
Literacy leaders	58	70	23	28	2	2	-	-	-	-
Teachers	68	50	63	46	6	4	-	-	-	-

These shortcomings were acknowledged by the project directors themselves. Their response (described in the LPDP Milestone Report, July 2006) was for “teacher learning goals to be about building literacy content knowledge and pedagogy” and to provide facilitator learning opportunities and support notes in regional team meetings to build understanding of “what teacher pedagogical content knowledge goals could look like” (English, Baretta, & O’Connell, 2006b, p.33). Our data suggest that the first step could involve supporting facilitators to address teachers’ beliefs about the *importance* of understanding the theories underpinning effective literacy teaching and learning. There is a risk that unless teachers consider these understandings to be very important, they will layer new actions on top of old beliefs and assumptions, and fail to make second order change.

Pace and scaffolding of professional readings

One of the vehicles used for supporting teachers to build their theoretical knowledge was through the use of professional readings. Literacy leaders from the case study schools generally considered the professional readings as being very useful. However, some teachers we interviewed perceived them as not so useful.

The readings were the least interesting part of the whole PD—a chore and a bore...I couldn’t tell you what any of the readings were about now. (Teacher)

Teachers’ reactions to the professional readings related in part to their prior experiences. The minority of case study teachers who were positive about the readings were, in most cases, those who had already had experience in using professional readings for their own academic or personal study, or as part of in-school reading groups.

Teachers' reactions to the professional readings were also related to how the readings were introduced. Teachers' responses suggest that there was neither enough time nor enough scaffolding provided to meet their needs in engaging with the professional readings, especially those containing unfamiliar terminology. While teachers responded very positively to the handbook *Effective Literacy Practice in Years 1–4* (Ministry of Education, 2003) because of its accessible writing style and relevance, several teachers reported that they found it very challenging to read materials they perceived as “too academic”, or to contain “jargon”.

A major constraint was time. One teacher said that he did not do the readings as he was “working 50–60 hours a week already”, and another participant reported that teachers had not been allocated time to do any reading and could not fit it in on top of their other out-of-class responsibilities. One provisionally registered teacher considered there should be agreement about how much additional time is fair and “not go beyond that.” A literacy leader described how, on one training day, “in my syndicate we did three or four readings” which she clearly thought was excessive. A consequence of too many readings or insufficient time to read them was the feeling that the readings went “in one ear and out the other,” with limited impact:

I don't feel professional readings had much of an impact, because of the way they were handled, the nature of our staff (we're not interested in theoretical stuff) and time factors. (Literacy leader)

The importance of teachers having non-pressured time and space to engage with theoretical ideas at their own pace is encapsulated in a reflective comment by one of the case study schools' literacy leaders, who was also the deputy principal. Her goals for the teachers in her school provided a contrast to the high pressured reading expectations that some teachers reported feeling during the LPDP.

All the professional readings were difficult to fit in with everything else. Now they [teachers] might go back and have a read once the pressure is off to read, report, discuss. My job is to keep reminding them to read. I gave them one professional reading for the holidays. (Literacy leader)

There was some evidence from the case study schools to suggest some movement in teachers' responses to professional readings over a longer period of time.

At the beginning of the second year it was like a brick wall. It was like “No we don't want to”. By the middle of the year they were actually bringing readings and getting interested and informed. At end of the year the three literacy leaders said this had most impact. (Facilitator)

There was a lot of resistance from the staff: “We've never had to read anything before”. “Tell us how, not why”. I think we have turned a corner with an acceptance of the need for professional reading. (Literacy leader)

Drawing on a range of media

Another solution relates to incorporating a wider range of media in which to present theoretical knowledge in addition to academic readings, such as watching videos or listening to the facilitator (or other professional development providers) discuss theoretical ideas.

The development of the on-line video footage of classroom literacy practice and related commentary developed by LML for the LPDP was an innovative way of addressing this need for theory presented in an alternative medium to make the links between theory and practice explicit. Staff from the case study schools and the majority of survey respondents had not accessed this resource at the time of our data collection, and so we are not able to comment on its impact on teachers' ability to work out the “where to next” from student data.

Activities that translate theory in to practice

Another solution relates to accompanying the presentation of theoretical principles with activities that translate the principles into practice.

...what we wanted was to have a reason for doing things and seeing how the theory applied to the reality so for us it was more useful hearing the theory and how it's applied from the facilitator...Watching the video clips sunk in and stayed there far more than the readings. (Teacher)

A large part of it was theoretical, not "What does this look like in the classroom?" (Teacher)

Modelling the use of data to inform next teaching steps

Facilitator records show that no time was allocated to modelling the use of data to inform teaching for the February 2004 cohort schools whereas 12 percent of their time was allocated to this for the July 2004 cohort and 8 percent for the February 2005 cohort.

The project directors note in their Milestone Report, July 2006 (English, Baretta, & O'Connell, 2006b) to the Ministry of Education that in the first cohort many facilitators analysed the needs analysis data on their *own* in order to quickly move on to the next stage, instead of allowing time for teachers to examine the implications of the data.

The impact of this change is shown in an analysis of practitioners' ratings of their ability to use achievement data to work out next teaching steps by cohort. Nearly three-quarters of the practitioners from the July 2004 cohort rated their ability to use student achievement data to work out next teaching steps as "strong" compared with less than half of the February 2004 cohort who did so.

Shifts in pedagogical content knowledge shown in the scenario ratings

In this section we present our analysis of the ratings staff gave to teacher practices illustrated in scenarios. We begin with a description of the scenario tool used to collect the data, followed by our analysis of this data, first for the reading schools, and then for the writing schools.

The scenario tool

The scenario tool was developed to learn about staff content knowledge and ability to transfer an understanding of literacy pedagogy into practice in the areas of reading or writing. Staff were asked to individually read a scenario of either a reading or a writing lesson, depending on their school focus, that illustrated a range of ineffective teacher practices. Staff were then asked to rate the effectiveness of the following features:

- Use of learning intentions by the scenario teacher;
- Links made to students' prior knowledge;
- Scenario teacher's response to students' ideas, and the feedback s/he provided;
- Opportunities the scenario students had to think about quality reading comprehension or writing; and
- Extent to which the scenario teacher catered for diverse student needs.

Staff were also asked to give a justification for their ratings.²³

²³ We do not use the qualitative data in our analysis.

The scenario tool was used at the beginning, midway through and then again at the end of the professional development. Outlined below is our analysis of staff ratings made when they started and ended the professional development. The data were aggregated across staff, so we have total responses per feature for each school, but do not have individual staff responses. That is, we know how many staff rated practice A as ineffective at the start and effective at the end, but not whether staff member X rated practice A as effective at the start and ineffective at the end. The number of staff responses to each feature varied at both time points. We could not link individual teachers to individual classes. This constrained the analysis possible and meant we could not link the scenario data to our survey data.

Reading school staff ratings

At the start of their LPDP professional development, the percentage of reading school staff who correctly recognised ineffective practices ranged from 27 percent (links with prior knowledge) to 52 percent (catering for diverse needs). By the end of the professional development, recognition of ineffective practice was much improved with four of the five features in the 72 to 81 percent range. The greatest increase was in the percentage that recognised ineffective use of learning intentions (47 percentage points). Links to prior knowledge showed the least shift and the lowest recognition (44 percent).

Table 46 **Shifts in reading schools' scenario ratings**

Features of the scenario	Ineffective at start %	ineffective at end %	Shift
The learning intentions	34	81	47
Opportunities to think about quality reading comprehension	47	76	29
Teacher's response to children's ideas	48	73	25
Catering for diverse needs	52	72	20
Links to prior knowledge	27	44	17

Writing school staff ratings

At the start of their LPDP the percentage of writing school staff who correctly recognised ineffective practices ranged from 34 percent (links with prior knowledge) to 51 percent (opportunities to think about quality writing). By the end of the professional development recognition of ineffective practice was much improved with all five items in the 66 to 79 percent range. The greatest increase was in the percentage of staff who recognised ineffective use of learning intentions (41 percentage points). Opportunities to think about quality writing showed the least shift (22 percentage points) and links to prior knowledge the lowest recognition as ineffective (66 percent).

Table 47 **Shifts in writing schools' scenario ratings**

Features of the scenario	Ineffective at start %	Ineffective at end %	Shift
The learning intentions	38	79	41
Opportunities to think about quality writing	51	73	22
Teacher's response to children's ideas	45	72	27
Catering for diverse needs	45	72	27
Links to prior knowledge	34	66	32

By the end of the professional development the practice most frequently identified by staff from both reading and writing schools as ineffective was the use of learning intentions. The practice least frequently identified was making links to students' prior knowledge. However, because a greater proportion of writing than reading school staff recognised at the start that the scenario teacher was ineffective at making links to students' prior knowledge and a greater percentage developed this understanding over the course of the professional development, a much larger proportion of staff from writing (66 percent) than reading schools (44 percent) had this understanding by the end of their LPDP participation.

This may help explain why the multilevel modelling showed that the differences in performance of Māori and Pacific students and their New Zealand European counterparts were greater in reading than writing schools, particularly those who started with low levels of achievement.

These findings suggest that greater emphasis could be placed, particularly in the area of reading, on supporting literacy leaders and teachers to draw on the cultural and linguistic resources Māori and Pacific students bring with them to school.

Transfer of pedagogical content knowledge to practice

The LPDP aims for school staff to transfer their growing understanding of pedagogical content knowledge into practice. Tables 40 and 41 show that literacy leaders and teachers reported increased use of all 15 effective literacy practices between the start of the professional development and the time of the survey.

Table 48 **Shift in the mean frequency of literacy leaders' pre-LPDP and current practices**

	Pre LPDP mean	Current Mean	Shift
Share learning intentions with students	2.20	3.91	1.71
Teach in a deliberate, purposeful, and specific way	2.87	3.90	1.03
Plan specific learning objectives for different groups to ensure you target learning needs of all students	2.82	3.87	1.05
Link new teaching with student's prior experience and knowledge	3.11	3.87	0.76
Provide opportunities for students to engage with a wide range of rich texts	3.18	3.86	0.68
Use assessment to improve future teaching and learning	2.81	3.78	0.97
Provide explicit criteria (success criteria) for students against which they can judge the quality of their work	2.04	3.73	1.69
Use information from students and their work to better understand the effectiveness of teaching	2.74	3.72	0.98
Give targeted feedback and feed forward to students	2.49	3.69	1.20
Plan a wide variety of learning experience that draw on students' interests and social and cultural identities	3.17	3.67	0.50
Provide students with opportunities to reflect on and talk about their knowledge and strategies	2.17	3.52	1.35
Talk with students individually about their understanding of their learning and any difficulties they may be having	2.44	3.51	1.07
Give students having opportunities to help develop success criteria	1.80	3.45	1.65
Give students some choice about what they learn and how they go about it	2.23	3.15	0.92

* 1 = Hardly ever, 2 = Not very often, 3 = Some of the time, 4 = Most of the time

Table 49 **shift in the mean frequency of teachers' pre-LPDP and current practices**

	Pre LPDP mean	Current mean	Shift
Teach in a deliberate, purposeful, and specific way	2.88	3.89	1.01
Share learning intentions with students	2.10	3.82	1.72
Link new teaching with student's prior experience and knowledge	3.07	3.81	0.74
Plan specific learning objectives for different groups to ensure you target the learning needs of <i>all</i> students	2.62	3.80	1.18
Provide opportunities for students to engage with a wide range of rich texts	3.12	3.74	0.62
Give targeted feedback and feed forward to students	2.44	3.72	1.28
Use assessment to improve future teaching and learning	2.64	3.65	1.01
Provide explicit criteria (success criteria) for students against which they can judge the quality of their work	1.97	3.64	1.67
Plan a wide variety of learning experience that draw on students' interests and social and cultural identities	3.04	3.61	0.57
Use information from students and their work to better understand the effectiveness of teaching	2.58	3.57	0.99
Provide students with opportunities to reflect on and talk about their knowledge and strategies	2.21	3.46	1.25
Talk with students individually about their understanding of their learning and any difficulties they may be having	2.42	3.36	0.94
Give students opportunities to help develop success criteria	1.73	3.17	1.44
Give students some choice about what they learn and how they go about it	2.11	3.03	0.92

* 1 = Hardly ever, 2 = Not very often, 3 = Some of the time, 4 = Most of the time

The practices which literacy leaders and teachers most frequently reported using “*most of the time*” at the time of the survey were:

- teaching in a deliberate, purposeful, and specific way (3.90; 3.89),
- sharing learning intentions with students (3.91; 3.82),
- linking new teaching with students' prior experiences and knowledge (3.87; 3.81), and
- planning specific learning objectives for different groups to ensure the needs of all students are met (3.87; 3.80).

The practices which literacy leaders and teachers reported using *least frequently* at the time of the survey were:

- giving students some choice about what they learn and how they go about it (3.15; 3.03),
- giving students opportunities to help develop success criteria (3.45; 3.17),
- talking with students individually about their understanding of their learning and any difficulties they may be having (3.51; 3.36), and
- providing students with opportunities to reflect on and talk about their knowledge and strategies (3.52; 3.46).

On average, literacy leaders and teachers reported using these practices at the time of the survey only “some of the time”.

Literacy leaders and teachers ratings *shifted the most* for these aspects of their practice:

- sharing learning intentions with students (1.71; 1.72);
- providing success criteria against which students could judge the quality of their work (1.69; 1.67);
- providing students with opportunities to help develop success criteria (1.65; 1.44); and
- providing students with opportunities to reflect on and talk about their knowledge and strategies so they can improve their reading comprehension or writing (1.35; 1.25).

Their ratings *shifted least* for these aspects of their practice:

- planning a wide variety of learning experiences that drew on students’ interests and cultural identities (0.50; 0.57);
- providing opportunities for students to engage with a wide range of rich texts (0.68; 0.62);
- linking new teaching with students’ prior experience and knowledge (0.76; 0.74); and
- giving students some choice about what they learn and how they go about it (0.92; 0.92).

Transfer of knowledge to practice in other curriculum areas

Table 42 shows that the practices practitioners most and least frequently reported using in other curriculum areas were similar to those in reading and writing. For example, sharing learning intentions with students and teaching in a deliberate, purposeful, and specific way were the two practices most frequently reported being used in other curriculum areas, and giving students some choice about what they learn and how they go about it, the least frequently.

Table 50 **Shift in literacy leaders' and teachers' knowledge and skills used in other subject areas**

Knowledge/skills	Literacy leader (n=83)		Teacher (n=137)	
	N	%	N	%
Share learning intentions with students	71	86	131	96
Teach in a deliberate, purposeful, and specific way	70	84	124	91
Give targeted feedback and feed forward to students	68	82	127	93
Use assessment to improve future teaching and learning	67	81	114	83
Link new teaching with students' prior experiences and knowledge	67	81	113	83
Plan specific learning objectives for different groups to ensure you target the learning needs of <i>all</i> students	66	80	119	87
Provide explicit criteria (success criteria) for students	62	75	105	77
Use information from students and their work to better understand the effectiveness of teaching	59	71	101	74
Provide students with opportunities to reflect on and talk about their knowledge and strategies	56	68	80	58
Keep up-to-date with current research and innovations in literacy teaching to inform your own teaching	56	68	75	55
Talk with students individually about their understanding of their learning and any difficulties they may be having	55	66	97	71
Give students opportunities to help develop success criteria	54	65	76	56
Plan a wide variety of learning experiences that draw on students' interests and cultural and social identities	51	61	104	76
Give students some choice about what they learn and how they go about it	43	52	73	53
Other	6	7	10	7.3

* Responded totals greater than actual number of respondents as a result of multiple responding.

One explanation for these similarities, as suggested by literacy leaders and teachers from the case study schools, is the consistency across different professional development approaches such as AToL, the Numeracy Project, and the LPDP. One of the teacher survey respondents noted that:

We were able to link what we learnt on AToL and use it with LPDP. (Teacher)

This finding suggests a cumulative effect resulting from professional development projects which are aligned in approach and demonstrates the value of this for schools.

Impact on expectations and perceptions of student learning

Beliefs about the possibility of lifting student achievement varied. Some of the case study school staff expressed high expectations of their capacity to make a difference while others held particular beliefs which limited their expectations. For example, one case study school principal believed that shifts in student achievement at his school were relatively low because

Seventy percent of the school roll is boys and boys don't like writing and take longer to improve. (Principal)

The facilitator for another case study school described how low expectations were part of that school culture.

At the school there was a culture of "We're a low decile school so we can't expect much of our students."
(Facilitator)

Table 43 shows survey participants' views on the impact of the LPDP on convincing them they could lift student achievement.

Table 51 **Effectiveness of the LPDP in convincing practitioners they could lift student achievement**

	Very effective		Quite effective		Not very effective		Not at all effective		No response	
	N	%	N	%	N	%	N	%	N	%
Literacy leader	60	72	20	24	2	2	-	-	1	1
Teacher	69	50	64	47	4	3	-	-	-	-

Over 70 percent of literacy leaders but only half the teachers rated the LPDP as "very effective" in convincing them that student achievement could be enhanced. This is consistent with most literacy leaders but just over half of teachers identifying lifting student achievement as one of the goals of the LPDP.

Literacy leaders with classroom responsibilities²⁴ were more likely than teachers to report a "strong positive impact" on student engagement and achievement in literacy learning. However, literacy leaders and teachers had similar views on the impact of the LPDP on students' ability to identify and talk about their learning. The percentage who reported a "strong positive impact" was relatively low for both literacy leaders (41 percent) and teachers (37 percent). (Tables 52 and 53)

Table 52 **Literacy leaders' views on the impact of the LPDP on their students' learning (n=75)**

	A strong positive impact		Some positive impact		No impact		A negative impact		No response	
	N	%	N	%	N	%	N	%	N	%
Engagement in literacy learning of students' in your class	45	72	26	35	1	1	-	-	3	4
Literacy achievement of the students in your class	47	63	25	33	-	-	-	-	3	4
Ability of students in your class to identify and talk about their literacy learning	31	41	40	53	-	-	-	-	4	5

²⁴ Only literacy leaders who had classroom responsibilities during the LPDP were asked to respond to this question.

Table 53 **Teachers' views on the impact of the LPDP on their students' learning (n=137)**

	A strong positive impact		Some positive impact		No Impact		A negative impact		No response	
	N	%	N	%	N	%	N	%	N	%
Engagement in literacy learning of the students' in your class	61	45	67	49	8	6	-	-	1	<1
Literacy achievement of the students in your class	66	48	65	47	5	4	-	-	1	<1
Ability of the students in your class to identify and talk about their literacy learning (reading or writing)	51	37	76	55	9	7	-	-	1	<1

Impact on confidence and satisfaction of practitioners

Overall, practitioners rated the LPDP as having a positive impact on their confidence, satisfaction, and engagement in literacy teaching. Comments from practitioners in the case study schools suggest that this came from having a clearer sense of “what to do and how to do it” and the reasons for particular practices, as well as seeing positive results in student achievement.

I used to hate teaching writing. Now I look forward to it. (Teacher)

I always thought I was quite a good teacher of literacy but then I realised there were a whole lot of things I didn't know and that I could have been teaching much more efficiently. I felt confident because I had guidelines and knew what I was doing was right. [How?] We could just see from the results we must have been doing it right. (Teacher)

There were marked differences in responses according to school focus. A greater percentage of practitioners from writing schools rated the professional development as having a “strong positive impact” on their confidence, than did those from reading schools (73 percent compared with 58 percent), and on their engagement and satisfaction in literacy teaching (66 percent compared with 56 percent).

There were also differences according to whether respondents were literacy leaders or teachers. A greater percentage of literacy leaders than teachers rated the LPDP as having “a strong positive impact” on their confidence (69 compared with 61 percent) and as having “a strong positive impact” on their engagement and satisfaction (65 percent compared with 56 percent)

Association with shifts in student achievement

The multilevel modelling showed an association between the use of practices focused on during the LPDP and shifts in student achievement, and the chi-square testing showed trends. The associations between teacher practices and schools with high shifts in student achievement are shown on Table 54 and the associations between teacher practices and schools with low shifts in student achievement are shown in Table 55. The statistically significant associations shown by the multilevel modelling are denoted by the letter ‘S’, and the trends, by the

letter ‘T’. As we were unable to match individual teachers with individual classes there are limitations to the conclusions that can be drawn from this data

Table 54 **Associations between practitioner practices and high shifts in student achievement**

High shift schools	Reading	Writing
Teachers who rated their ability at the time of the survey to interpret student data in relation to national norms as “strong”.	T	S
Teachers who rated their ability at the time of the survey to use tools such as asTTle and STAR as “strong”.	T	
Teachers who reported understanding at the time of the survey the theoretical principles underpinning effective literacy teaching and learning “very well”.	S	
Teachers who reported that <i>prior</i> to the LPDP they had at least on occasion given students the opportunity to help develop success criteria.	S	
Staff who, at the <i>start</i> of the LPDP, correctly identified as ineffective the links made to prior knowledge.		T T

Table 55 **Associations between practitioner practices and low shifts in student achievement**

Low shift schools	Reading	Writing
Teachers who reported that <i>prior</i> to the LPDP they at least on occasion kept up to date with current research and innovations in literacy teaching to inform their teaching.	S	
Teachers who reported reading literacy related professional readings for interest in their own time, at least on occasion, <i>before</i> participating in the LPDP.		S
Teachers who rated their pre-LPDP ability to use student data to work out what to teach next as greater than “Not at all strong”..	S	
Teachers who reported that <i>prior</i> to the LPDP they had at least on occasion given students some choice about what they learnt and how they went about it.		S
Teachers who reported that <i>prior</i> to the LPDP they did not understand very well what effective literacy practice looked like.	T	
Staff who, at the start of the LPDP, incorrectly identified as effective the links made to prior knowledge.		T
Staff who, at the start of the LPDP, incorrectly identified as effective the use of learning intentions.		T
Literacy leaders who rated their ability at the time of the survey to interpret student data in relation to national norms as only “quite strong”.	T	
Literacy leaders who reported understanding only “quite well” the theoretical principles underpinning effective literacy teaching and learning at the time of the survey.		T
Teachers who rated understanding the theoretical principles underpinning effective reading comprehension and writing as only “quite important” at the time of the survey.	T	
Teachers who reported that at the time of the survey they provided students with opportunities to reflect on and talk about their knowledge and strategies so they could improve their reading comprehension or writing only “some of the time”.	T	

Although the associations above differ according to school focus (reading or writing), and in significance (that is, the multilevel modelling shows statistically significant relationships, and the chi-square testing shows trends only) the combined data on Tables 54 and 55 give some indication of the skills, knowledge, and practices associated with relative shifts in student achievement for LPDP schools. These data suggest that practitioners associated with high shift schools are those who: are able to use assessment tools, are able to interpret student data in relation to national norms, and have some degree of pedagogical content knowledge. These findings support the LPDP focus on these areas of expertise. As discussed earlier, practitioners rated the LPDP as having a positive impact on their capacity to build these skills and forms of knowledge, and their ratings indicated growth in these areas since beginning the professional development.

Of interest is the statistically significant association between the four effective practices reported to be occurring in schools at the *start* of the professional development and *low* shifts in student achievement shown in the first four rows of Table 55. One explanation is that schools where teachers already had these skills and knowledge had less room for improvement in the context of the professional development provided by the LPDP and so there were relatively lower shifts in student achievement.

A different pattern can be found by looking at the next three rows in Table 55. In these cases teachers who reported not understanding what effective literacy practice looks like, prior to the survey and whose scenario ratings indicated the inability at the start to differentiate between effective and ineffective practice in relation to learning intentions, and to making links to students' prior knowledge tended to come from low shift schools. The associations shown in these cases are not statistically significant, but rather show trends meaning that conclusions drawn about this pattern need to be made more tentatively.

How the LPDP supported learning

LPDP experiences with a strong positive impact

One of the aims of this evaluation is to determine the relative impact of different experiences during the LPDP on practitioner learning. The four experiences most frequently identified by literacy leaders and teachers as having a "strong positive impact" on their learning were:

- analysing and discussing examples of student work (63 percent of literacy leaders and 52 percent of teachers);
- analysing and discussing student achievement data (59 percent of literacy leaders and 44 percent of teachers);
- using information from students and their work to better understand the effectiveness of teaching (54 percent of literacy leaders and 33 percent of teachers); and
- classroom observations by facilitators (52 percent of literacy leaders and 36 percent of teachers).

The case study interviews and qualitative data can show us why these experiences were viewed as having such a positive impact.

Analysing, discussing, and using student achievement data and work

Comments from those interviewed suggest that teachers have become much more expert in using student data effectively in their teaching:

Before LPDP staff never shared children's work. Now they grade work and plan together. (Literacy leader)

There have been huge developments. To begin with teachers would only bring students' best work. Now they are much more ready to say "This is what I've tried, these are the results, where do I go next?" There is more valuing of each other's opinions and more sharing. (Facilitator)

Teachers are more aware of school wide data than just their own. If they know what expected levels of achievement are they know what to aim for. (Literacy leader)

We knew exactly what their weaknesses were. For example I had one child who couldn't read between the lines so we did a lot of work on looking at the author's meaning. The three level guides required them to form their own opinion and explain why. (Teacher)

I used to just do running records, and now we do STAR and talk in teams about data and how to bring students' levels up. Because LPDP was school wide we talk about it a lot more across different age groups and classes. (Teacher)

We now have more focused and informed discussion based on evidence. Team syndicates are looking at children's data, and planning together. There is an enhanced level of discussion, and sharing of ideas with other teachers. (Teacher)

Facilitators' Observations and feedback

Case study and survey responses suggest that many practitioners initially felt uncertain or uncomfortable about the classroom observations, especially in phase one when the purpose was not always made explicit. However, once practitioners were clear about the purpose of the observations they found them helpful.

I wasn't used to having someone in my classroom. She assisted you if you needed it and I needed it. It has created a whole new pattern of teaching. (Teacher)

The feedback was comprehensive and detailed. It included what you are doing really well, and what you could do next, and ideas to try. She was very open. If you were "stuck" she was prepared to model a way to do it. (Teacher)

They had a significant impact. They made me feel better about my teaching. You always wonder if you are doing the right things. The feedback and chat was helpful and provided confirmation that you were on the right track. (Teacher)

It has given me lots of confidence and fuelled my passion for literacy. It made me try harder in the classroom. (Teacher)

It was very good, all written down, very focused. The good thing was it wasn't about how I managed the class... This was focused on the lesson and the objectives, and there were lots of positives from it. There was feedback on feeding forward and where to next for everybody. What you did, the content, the modelling, and the words you said. (Teacher)

The LPDP as a model of professional development

Generally, facilitators, literacy leaders, and teachers were extremely positive about the LPDP in comparison with other professional development they had experienced. Nearly all literacy leaders (92 percent) and teachers (95 percent) indicated they would recommend the LPDP to others working in their role.

This is the best professional learning opportunity I have had in my career. (Facilitator)

This was the most powerful contract I had been on in years! (Literacy leader)

What a great professional development project to be involved in. My teaching in this area has really improved. (Teacher)

Overall strengths of the LPDP

We asked literacy leaders, teachers, and facilitators an open-ended question about what they considered to be the greatest strengths of the LPDP compared with other professional development they had experienced.

The strengths most frequently identified by literacy leaders and teachers were:

- the professional or personal qualities of the facilitator (literacy leaders: 29 percent; teachers: 24 percent)
[Our] first year facilitator was stunning—Infectious!! (Literacy leader)

The facilitator was a competent motivating classroom teacher, whose ideas and strategies were excellent and relevant to my classroom. (Teacher)
- the fact that the PD was school-wide and involved the development of professional learning communities (literacy leaders: 25 percent; teachers: 24 percent)
Everyone grew in confidence and the conversations were excellent and are continuing.

The fact that all the staff were involved and walked along the same learning path together.

Strong and supportive collegial atmosphere—professional learning climate developed. (Teacher)

Having the whole school focused on one particular aspect of our teaching was very effective and gave us a shared experience to discuss. (Teacher)
- the length of the professional development (literacy leaders: 19 percent; teachers: 21 percent);
The length of the project helped embed learning. (Teacher)

Ongoing, continuous over two years [gave us] plenty of time to develop our ideas and skills and to adjust to new learning and teaching strategies. (Teacher)

The time allowed to let us try and consolidate our ideas. (Teacher)

The period of time was good as change could be observed over time and strategies for sustainability put in place. (Teacher)
- the intensity of the professional development—the ongoing nature of the support and guidance provided by facilitators (literacy leaders: 19 percent; teachers: 18 percent);
Consistent follow-up. (Teacher)

The length and the facilitator who kept coming back and keeping us going. (Teacher)

The level of facilitator contact with the staff at staff meetings and the discussions we had as a result. (Teacher)

The greatest strength was that it was continual so you had time to absorb the information, trial it in class, get support. It was very thorough. (Teacher)
- the focus on interpreting and using student achievement data to lift student achievement (literacy leaders: 10 percent; teachers: 10 percent);
Basing teaching on data etc. (Literacy leader)

Our practice has become effective using data to drive our teaching. (Teacher)

It makes teachers aware of the individual needs of students. (Teacher)

- the use of recent research to build teachers' pedagogical content knowledge (literacy leaders: 11 percent; teachers: 16 percent);
 - Giving teachers the content knowledge and good exemplars so we know what a good level 2 should look like etc. (Teacher)
 - The learning content knowledge and the opportunities to put it into practice. Identifying each writer's stage of development. The surface feature/ deeper feature split. (Teacher)
 - Raising teachers' professional knowledge. (Literacy leader)
- the way the PD was tailored to individual school and teacher needs (literacy leaders: 8 percent; teachers: 7 percent);
 - A focused development plan based on *our* school needs. (Literacy leader)
 - More relevant to our students and our situation [than other PD experienced] (Literacy leader)
 - The facilitator coming to us, getting to know us as individuals, how we teach and how to move us on, based on class observations and feedback. (Teacher)
 - Focused directly to school needs and dealt with what people really wanted. (Teacher)
- the focus on improved teacher practice (literacy leaders: 8 percent; teachers: 5 percent)
 - The fact that it is changing the way teachers operate rather than just giving ideas. (Literacy leader)
 - The project's ability to make teachers be more specific in their teaching—deliberate acts of teaching. (Teacher)

Challenges faced during the LPDP

We asked practitioners if there had been any negative impacts of the LPDP. The most frequent response was feeling stressed, overwhelmed, or lacking in confidence as a result of the new learning that they were engaged in, especially in the early stages of the project (18 percent).

Definitely. Very stressed out about workload and level of expectation for improvement in students in initial period (two years). Loss of sleep and worry. Teachers have left the school for the same reasons. Overwhelmed with material initially (one—two years). Okay now.

Making change at first provided stress as it increased the workload initially. Change is hard for older teachers.

It was stressful at the time but retrospectively well worth it.

The second most frequent response was about the time it took (15 percent).

How do we manage a good work/life balance? The workload is an issue especially in a smaller school where staff have to be responsible for so many more areas.

Although the style is ideal, the time commitment to such close student monitoring is substantial.

At times it felt quite busy with professional readings on top of other subjects but in the long run it was beneficial.

Increased workload—meetings, completing interviews etc in relation to target students.

The third most frequent response related to dissatisfaction with some aspect of the facilitator (12 percent).

The facilitator made several people cry and was very threatened by some staff. She kept changing what was expected at very short notice. She did not keep ahead of our teaching.

[A less] enthusiastic, motivated facilitator in the second on-going LPDP year, lost impact of the PD for staff.

Meetings with our facilitator have been very long and little comes from them. The facilitator often misses dates made with the school or is late for meetings.

We also asked literacy leaders about any negative impact of the LPDP. Only 8 percent of literacy leaders responded to this question. The two negative aspects mentioned by at least five percent of them were feeling stressed, overwhelmed, or lacking in confidence as a result of the new learning that they were engaged in, especially in the early stages of the project (5 percent), and the time consuming nature of the LPDP (5 percent).

Practitioners' recommendations for improvements to the LPDP

We asked literacy leaders and teachers how the LPDP could be improved in the future. The most frequent recommendation by teachers (20 percent) and literacy leaders (20 percent) was to ensure that the facilitators had the requisite content knowledge, facilitation skills, and organisational skills and that facilitators were clearer from the start of the LPDP about the direction and expectations for it. The following comments illustrate the nature of their responses,

- Facilitators' content knowledge and understanding of the transfer of pedagogical content knowledge into practice
 - Ensure that all facilitators have the experience, knowledge, and skills to do their job. Our first facilitator was brilliant but in the second year she was more vague and often contradicted herself. When we are learning something new it is important that the facilitator really knows what they are talking about and preferably has done it before in their own classroom. (Teacher)
 - A better outside facilitator who actually knows more than beginning teachers. (Teacher)
 - Making sure facilitators...really know their material. It was frustrating to work with a facilitator who was not quite as far down the track as our school. Not sure how to improve this. (Teacher)
- Facilitators' communication and facilitation skills
 - Use the literacy model itself as a teaching tool for implementation. [Knowing] what the success criteria are, learning intentions, skills and strategies to be developed set up at the beginning. (Teacher)
 - A facilitator needs to be supportive of existing practices and build strengths, be explicit, and explain what she is looking for. It is not helpful to take eight months for us to work out what she wanted. (Teacher)
 - Clear guidelines on what is happening and why. For example, the first observation is to collect data and get feedback from it. And for the scenario—explain that they want our opinions for data collection and that it is not anonymous. (Teacher)
 - The facilitator needs to be sensitive to the needs of the school and a very strong *positive* communicator. (Literacy leader)
 - I felt that the facilitator was affected by pressures from the Ministry to fulfil certain obligations irrespective of the varying demands of different schools. There seemed to be a lot of emphasis placed on forwarding results to the Ministry which would not impact on our children's learning at our school. (Literacy leader)

- Literacy leaders also recommended more ongoing support once the project ends, such as occasional facilitator visits, or a newsletter.

Summary

On average, practitioners thought the LPDP was effective in building their data literacy, pedagogical content knowledge, classroom literacy practice, capacity to lift student achievement, confidence and satisfaction in literacy teaching, and the literacy engagement and achievement of their students.

Literacy leaders rated the effectiveness of the LPDP in building their capability more highly than did teachers, especially in building their ability to interpret and use student achievement data and their pedagogical content knowledge in literacy for which nearly twice as many literacy leaders as teachers rated the LPDP as “very effective”. They also showed greater awareness of the LPDP goals. Findings from the case study schools suggest that, overall, literacy leaders may have been more invested in the project and gained more from it due to their leadership responsibilities and their greater involvement with the school facilitator. There appeared to be greater variability in the involvement of teachers, especially in the larger case study schools where opportunities for teacher engagement and learning were more dependent on the knowledge, practice, and leadership skills of their literacy leaders. We cannot comment on whether these perceived differences translated into actual differences in the learning of literacy leaders as compared with teachers as the LML scenario rating and questionnaire data did not identify whether the respondents were literacy leaders or teachers.

There was a positive increase in practitioners’ ratings of the skills and knowledge focused on during the LPDP. Overall, practitioners rated their pre-LPDP ability to use assessment tools such as aTTL and STAR, interpret student data in relation to national norms, and to interpret data in relation to expected patterns of progress as “not very strong” and their ability at the time of the survey as “quite strong” to “strong”. Literacy leaders reported slightly greater shifts than did teachers.

There were also positive shifts in practitioners’ ratings of their understanding of the theoretical principles underpinning effective literacy teaching and learning, how to put these into practice, what effective literacy practice looks like, and student learning progressions in literacy. By the time of the survey, literacy leaders reported understanding all of these principles and practices “quite well” to “very well”, and teachers “quite well”. Most literacy leaders but just over half of the teachers considered understanding the theoretical principles underpinning effective reading comprehension and writing to be “very important” which is consistent with the finding that less than one-fifth identified improved literacy content knowledge as one of the main goals of the LPDP. These findings suggest that further inquiry could be carried out into ways of effectively supporting teachers to engage with theory and its application to practice.

These recommendations are supported by findings in the research literature which show that for professional learning to have a positive impact on students: teachers’ personal theories need to be engaged rather than bypassed; sufficient time needs to be focused on promoting opportunities to learn; learning resources need to include a range of theoretical tools/principles that integrate teaching, learning, and assessment; learning activities need to include multiple opportunities to learn through a range of activities; and the presentation of theoretical principles needs to be accompanied by activities that translate principles into practice (Timperley et al, in press).

By the end of the professional development the practice most frequently identified by staff from both reading and writing schools as ineffective was the use of learning intentions. The practice least frequently identified was making links to students' prior knowledge. A much larger proportion of staff from writing than reading schools had this understanding by the end of their LPDP participation.

This may help explain why the multilevel modelling showed that the differences in performance of Māori and Pacific students and their New Zealand European counterparts were greater in reading than writing schools, particularly those who started with low levels of achievement. This explanation is supported by the research literature highlighting the importance of teachers adapting students' home literacy knowledge, experience, and practices into classroom programmes (McNaughton, 2002; Bishop & Berryman, 2006).

In response to the lower achievement of Pacific students' in the February 2004 cohort, the project established an inquiry in supporting teachers to understand the linguistic resources of their Pacific students. This information has been used in planning for the 2006 cohorts and facilitators have been focusing on supporting teachers to do this.

The findings of this evaluation support this and suggest that a continued emphasis be placed on supporting literacy leaders and teachers (particularly when the focus is reading) to draw on the cultural and linguistic resources Māori as well as Pacific students bring with them to school. One way of doing this is suggested in the LPDP July 2006 Milestone Report (English et al, 2006b). It describes how, in response to the embedded researchers' analysis of achievement data, team leaders' identified the need to be more effective in using school-by-school and project data to identify the teachers who have achieved strong results for Maori and Pacific students to explore further what it is that these expert teachers do.

There was evidence of improved transfer of pedagogical content knowledge to practice, and increased use of the range of effective literacy practices focused on during the LPDP, particularly: sharing learning intentions with students, providing success criteria against which students could judge the quality of their work., giving students opportunities to help develop success criteria, and providing students with opportunities to reflect on and talk about their knowledge and strategies.

The smallest shifts were in the areas of: planning a wide variety of learning experiences that drew on students' interests and cultural identities, linking new teaching with students' prior experience and knowledge, and providing opportunities for students to engage with a wide range of rich texts, and giving students some choice about what they learn and how they go about it.

At the time of the survey, practitioners most commonly reported teaching in a deliberate, purposeful, and specific way, sharing learning intentions with students, linking new teaching with students' prior experiences and knowledge, and planning specific learning objectives for different groups to ensure the needs of all students are met. The practices they least commonly reported were giving students some choice about what they learn and how they go about it, giving students opportunities to help develop success criteria, talking with students individually about their understanding of their learning and any difficulties they may be having, and providing students with opportunities to reflect on and talk about their knowledge and strategies.

There were associations between some of the practices practitioners reported and school capacity to shift students' achievement. Although these associations differed according to school focus (reading or writing), and in significance (the multilevel modelling shows statistically significant relationships, and the chi-square testing shows trends), the combined data give some indication of the skills, knowledge, and practices associated with

shifts in student achievement for LPDP schools. Practitioners associated with high shift schools were those who: are able to use assessment tools, are able to interpret student data in relation to national norms, and have attained a particular level of pedagogical content knowledge. The reverse appears to be true for low shift schools. These findings support the LPDP focus on these areas of expertise.

Of interest is the statistically significant association shown in the multilevel modelling between effective practices of teachers *before* participating in the LPDP and schools with low shifts in student achievement. The multilevel modelling showed that teachers who indicated that *prior* to the LPDP they, had at least on occasion, informed themselves about current research and innovations in literacy teaching to inform their practice, read literacy related professional readings for interest in their own time, and that they had at least some ability to use student data to work out what to teach next, and had, at least on occasion, given students some choice about what they learnt and how they went about it, were more likely to come from *low* shift schools. One explanation is that schools where teachers already had these high level skills and knowledge had less opportunity for improvement in the context of the professional development and so made relatively low shifts.

There was also a tendency for teachers who reported not understanding what effective literacy practice looks like, prior to the survey and whose scenario ratings indicated the inability at the start to differentiate between effective and ineffective practice in relation using learning intentions, and to making links to students' prior knowledge to come from low shift schools although these associations were not statistically significant and so should be interpreted more tentatively.

These findings have implications both for the schools selected to participate in the LPDP or other similar forms of professional development, and for the capacity of facilitators to adapt the professional development to the differing stages that schools are at.

The experiences practitioners most frequently rated as having a "strong positive impact" on their learning were: analysing and discussing examples of student work and achievement data; using information from students and their work to better understand the effectiveness of teaching; and classroom observations by facilitators. By contrast, discussing evidence collated by the facilitator from the scenario responses, the questionnaire responses, and the observations were rated as the least effective experiences of the LPDP because many practitioners were unaware of the purposes for the data being collected, and had little input into the data analysis.

The multilevel modelling showed statistically significant associations in both reading and writing schools between teachers who indicated they had at least some say in what and how they would learn during the LPDP and high shifts in student achievement. In addition, there were statistically significant associations between teachers from writing schools who rated discussing the scenario ratings, questionnaire responses, and feedback from facilitator observations as having a "strong positive impact" on their learning, and high shifts in student achievement. These associations highlight the importance of involving teachers in the planning and analysis stages of professional development for lifting student achievement.

Practitioners' views of the particular strengths of the LPDP compared with other professional development experiences were: the professional or personal qualities of the facilitator, the fact that the PD was school-wide and involved the development of professional learning communities, the length of the professional development, the ongoing nature of the support and guidance provided by facilitators, the focus on interpreting and using student achievement data to lift student achievement, and that it drew on recent research to build teachers' pedagogical content knowledge.

The three most frequently identified challenges were: feelings of stress associated with new learning, the time consuming nature of the professional development, and areas of weakness in facilitators' literacy or facilitation skills and knowledge.

5. Learning as a literacy leader

The literacy leader is responsible for leading school-wide literacy professional development through the LPDP in conjunction with the principal, and with the support of the facilitator. This role requires leadership and facilitation skills, along with literacy expertise. A crucial component of the LPDP was enabling literacy leaders to develop the knowledge and skills needed to lead staff growth during the professional development and after it ended.

Survey and case study responses suggest that many literacy leaders began the professional development without all the requisite skills needed for their leadership role. Three-quarters of literacy leaders had received no professional development in facilitation prior to their involvement in the LPDP (75 percent) and nearly one-third (31 percent) had received no literacy related professional development in the three years prior to their role as literacy leader.

Literacy leaders' data literacy, content, and pedagogical content knowledge

In order to lead staff growth, literacy leaders require at least the same, and preferably greater, knowledge of assessment tools, data literacy, content knowledge, and pedagogical content knowledge as the teachers with whom they work.

As shown in Chapter 4, literacy leaders rated their knowledge and skills at the time of the survey more highly than teachers rated themselves. However, we do not know whether their knowledge as gauged by the scenario rating data provided by LML was actually greater as this data does not identify the role of respondents as teachers, literacy leaders, or principals.

Table 56 shows teachers' perceptions of their literacy leaders' skills and knowledge at the time of the survey. Between 32 and 36 percent of teachers rated their literacy leaders' pedagogical content knowledge, knowledge of assessment tools, ability to interpret and use data, skills in modelling effective literacy practice, and skills in carrying out observations and giving feedback as "strong" and a further 39–58 percent as "quite strong".

Seventeen percent did not know about their literacy leaders' skills in modelling effective literacy practice and ten percent did not know about their skills in classroom observation and giving feedback to teachers, giving an indication of the percentages of teachers who had not had these experiences.

Only four percent of teachers rated their literacy leaders' abilities to support them to make changes to their classroom practice as "strong" and only 8 percent rated them as "quite strong". Most rated them as either "not very strong" (47 percent) or "not at all strong" (34 percent).

Table 56 **Teachers' perceptions of literacy leaders' skills and knowledge**

	Strong		Quite strong		Not very strong		Not at all strong		Don't know	
	N	%	N	%	N	%	N	%	N	%
Literacy pedagogical content knowledge	48	35	79	58	6	4	1	<1	3	2
Knowledge of assessment tools such as AsTTle or STAR	46	34	72	53	15	11	1	<1	3	2
Ability to interpret and use student achievement data	49	36	73	53	7	5	-	-	8	6
Skills in modelling effective literacy practice	44	32	54	39	11	8	5	4	23	17
Skills in classroom observation and giving feedback to teachers	48	35	59	43	14	10	2	1	14	10
Ability to support you to make changes in your classroom practice	47	4	64	8	11	47	5	34	10	7

A likely reason for this is that many literacy leaders did not have the pedagogical content knowledge or leadership skills needed to effectively support teachers to make changes to their classroom practice, or weren't available to work with teachers in their classrooms. Indeed, literacy leaders on average rated themselves as only "quite strong" at working out the knowledge teachers need in order to develop more effective teaching. Literacy leaders from the case study schools indicated that while they considered the LPDP was effective in building their knowledge and skills, they did not feel they had developed the content knowledge necessary to lead school development without the support of their facilitator. Only one of the twelve case study school literacy leaders reported an increased capability in supporting other teachers to make changes to their classroom practice.

We don't feel we are very good at it. For STAR data we can do the numbers but it is the "so what?" We need a deeper understanding of how students learn. (Literacy leader)

The same was true for carrying out classroom observations and giving specific feedback to teachers which is also dependent on pedagogical content knowledge. At the time of the survey, literacy leaders rated themselves as "not very strong" in carrying out classroom observations and giving specific feedback to teachers.

It was hard for me to do because it was all so new to me. I don't really have any idea what goes on in junior classes. (Literacy leader)

I don't think I was very good at giving feedback, but I tried to give positive feedback. As a teacher of junior students I felt that for the teachers in the senior school I was teaching them to suck eggs. (Literacy leader)

We (literacy leader team) did not do a lot of observations. We're not strong on this. We're not comfortable. (Literacy leader)

Teachers from the case study schools also commented on these issues. They were far more appreciative of facilitator observations and feedback than those from their literacy leader, as they often considered that their literacy leader lacked the content knowledge to offer useful feedback and direction.

It was useful when the facilitator did observations, but the literacy team was not able to give effective feedback, because they didn't know enough. (DP)

Teacher comments confirm research that without extensive training, teachers are not able to provide the sort of feedback that facilitates skill development.

A highly skilled trainer can provide technical feedback, but persons learning a new model of teaching or curriculum are not in a position to offer technical advice to other novices with the procedure.” (Joyce & Showers, 2002, p.86)

The importance of literacy leaders developing these skills cannot be over-stated. The chi-square testing showed that teachers from reading schools who rated their literacy leaders’ skills in classroom observation and giving feedback as “strong” tended to come from higher-shift schools, although no such association was shown for writing schools.

At the time of the survey literacy leaders on average also only rated themselves as “quite strong” at modelling effective literacy practice.

Teacher responses from the case study schools show the perceived capability of the literacy leader was an important school factor in the up-take of the LPDP, as teachers were more likely to respect and learn from literacy leaders if they were perceived to have relevant knowledge and skills. Literacy leaders had more credibility (as well as self confidence) when they had literacy pedagogical content knowledge relevant to all classroom levels.

Thus there are implications for both the effectiveness of the LPDP experience and its sustainability. During the professional development the facilitator is able to support teachers to make changes to their classroom practice, but once the project ends this support is no longer available. The fact that literacy leaders had often not developed the skills and knowledge needed to support teachers to make changes to their classroom practice poses a real threat to sustainability of LPDP changes. This is discussed further in Chapter 7.

Development of leadership skills

Literacy leaders’ perceptions

Most literacy leaders rated the LPDP as having a “strong positive impact” on their confidence in their literacy leader role (58 percent). Two-fifths rated it as having “some positive impact” (40 percent) and less than three percent rated it as having “no impact”.

I have really appreciated the experience. It has empowered me and I can see the reason for doing things, have been given great resources, had time to talk and question...

On a personal level I feel more confident and focused...

Only one quarter of literacy leaders rated the LPDP as “very effective” in building their leadership skills. Over half rated it as “quite effective” (59 percent) and a smaller proportion rated it as either “not very effective” (13 percent) or “not at all effective” (3 percent). Despite these ratings literacy leaders did report growth in their leadership and facilitation skills during the LPDP.

Table 57 shows that on average literacy leaders rated their pre-LPDP abilities to: see the assumptions and beliefs underpinning teachers’ practice; challenge teachers’ assumptions and beliefs without alienating them; support first and second order change rather than having a “do it for them” approach; hold learning conversations; be deliberate, explicit and specific, when working with teachers; and work effectively with resistant teachers as “not

very strong”. (Mean ratings ranged from 2.14 to 2.39.) They rated their ability to give teachers the benefit of the doubt and respect their differing motivations; and to recognise their own beliefs and assumptions and resist imposing these on others, as “quite strong” (2.58 and 2.73, respectively).

By the time of the survey, literacy leaders rated themselves as “quite strong” in all of these areas. The greatest shift was in holding learning conversations and this was also the skill literacy leaders rated the highest of their literacy leadership skills.

Table 57 **Mean rating by literacy leaders of their leadership skills before the LPDP and currently**

	Pre LPDP mean	Current mean	Shift
Hold learning conversations	2.19	3.38	1.19
Be deliberate, explicit and specific, when working with teachers	2.39	3.32	0.93
Recognise your own beliefs and assumptions and to resist imposing these on others	2.58	3.24	0.66
Challenge assumptions and beliefs without alienating teachers	2.39	3.23	0.84
See the assumptions and beliefs underpinning teachers' practice	2.32	3.19	0.87
Give teachers the benefit of the doubt and respect their differing motivations	2.73	3.19	0.46
Support first and second order change rather than having a “do it for them” approach	2.25	3.13	0.88
Work effectively with resistant teachers	2.14	3.00	0.86

* 1= Not at all strong, 2 = Not very strong, 3 = Quite strong, 4 = Strong

Teachers' perceptions

Just under one-third of teachers (31 percent) rated their literacy leaders' leadership and facilitation skills as “strong” at the time of the survey, 53 percent as “quite strong”, 12 percent as “not very strong”, and 3 percent as “not at all strong”, while 1 percent reported that they did not know.

They gave higher ratings to their organisational skills. Over two-fifths of teachers (41 percent) rated them as “strong”, 45 percent as “quite strong”, 10 percent as “not very strong”, 2 percent as “not at all strong”, while 1 percent reported that they did not know.

Experiences supporting the development of literacy leadership skills

Of crucial importance to the effectiveness of the LPDP and future professional development programmes is an understanding of how in-school leaders can be supported to develop the skills they need to lead staff growth in literacy knowledge and practice, both during the professional development and once external support is no longer provided.

Facilitator support

The majority of literacy leaders (70 percent) felt “very well” supported by their facilitator in their literacy leader role and nearly one-quarter (22 percent) felt “quite well” supported.²⁵ The forms of further support literacy leaders most frequently identified as needing included: more modelling by the facilitator (8 percent), more frequent visits during the LPDP (5 percent), and clearer communication about the purpose and process of the professional development experiences they engaged in.

Table 58 shows literacy leaders’ ratings of the impact of various experiences with their facilitator during the LPDP on their development of leadership and facilitation skills. The experiences which literacy leaders most frequently rated as having a “strong positive impact” were:

- carrying out classroom observations alongside the facilitator (53 percent),
- observing the facilitator giving feedback (48 percent) and
- observing the facilitator leading learning conversations (39 percent).

The experience which literacy leaders least frequently rated as having a “strong positive impact” was reading and discussing with the facilitator professional literature about facilitation.

Table 58 **Impact of experiences during the LPDP on literacy leaders’ leadership and facilitation skills**

	Strong +ve impact		Some +ve impact		No Impact		A –ve impact		Didn’t experience	
	N	%	N	%	N	%	N	%	N	%
Carrying out classroom observations alongside the facilitator and comparing notes afterwards	44	53	26	31	3	4	-	-	10	12
Observe the facilitator giving feedback to teachers following classroom observations	40	48	27	33	4	5	-	-	12	14
Observing the facilitator leading conversations with other staff	32	39	38	46	5	6	-	-	8	10
Reading and discussing with the facilitator professional readings about facilitation	23	28	46	55	2	2	-	-	12	14
Getting feedback from the facilitator about the way literacy leaders led conversations and gave feedback to teachers	24	29	34	41	1	1	1	1	23	28

These findings demonstrate the importance of not just being ‘told’ but also ‘shown’ the skills needed to carry out leadership roles, and the value of facilitators spending time with literacy leaders to support the development of their practice. This requires the provision of time for literacy leaders to work with others.

Interestingly, a sizeable proportion of literacy leaders (28 percent) did not experience feedback from their facilitator about the way they led conversations and gave feedback to teachers. Given the large percentage of literacy leaders who entered the LPDP with no previous professional development in facilitation, it seems important that all facilitators provide this, especially given that forty percent of those who did experience this

²⁵ One literacy leader felt “not very well” supported and a small number did not respond (7 percent).

feedback rated the experience as having a “strong positive impact”, and 57 percent, as having “some positive impact” on their learning.

Between 10 and 14 percent did not experience carrying out classroom observations alongside the facilitator, observing the facilitator giving feedback, and observing the facilitator leading learning conversations, also experiences perceived by at least 39 percent as having a “strong positive impact”.

Principal support

Overall, literacy leaders felt they received less support from their principal than their facilitator. Just over half (51 percent) felt “very well” supported in their literacy leader role and just under one-quarter (23 percent) felt “quite well” supported.²⁶ The forms of further support literacy leaders most frequently identified as needing were: to be provided with more release time, and release time on a regular basis (21 percent).

Release time, instead of me doing *all* the work at home on my laptop and entering *all* the school’s data.
(Literacy leader)

Other forms of further support identified were: for the principal to show more interest in the LPDP (13 percent), and for the principal to have greater understanding of the project and the literacy leader role (10 percent).

The 2004 cohort literacy leaders’ estimations of the release time they received and the amount of time they spent in their literacy leader role during the first year of the LPDP are shown on Table 59. Their estimates of the time received and used in the second year followed a similar pattern.

During the first year of the LPDP, the majority of literacy leaders from the 2004 cohorts were given 1–3 hours release time each week (61 percent), one quarter were given no release time, and a small proportion were given 4–6 hours (9 percent), or 7 hours or more (5 percent). During the LPDP over half of literacy leaders (56 percent) spent more time than they received release time for, especially those given one to three hours per week.

Table 59 **Mean time 2004 cohort literacy leaders received and spent during the first year of the professional development**

Time given (hours per week)	Time used (hours per week)							
	1–3		4–6		7+		Total	
	N	%	N	%	N	%	N	%
0	9	16	2	4	3	5	14	25
1–3	19	33	16	28	-	-	35	61
4–6	1	2	2	4	2	4	5	9
7+	1	2	-	-	2	4	3	5
Total	34	53	22	35	7	12	57	100

²⁶ A smaller proportion felt “not very well” supported (8 percent) or “not at all” well supported (2 percent) and 16 percent chose not to respond.

This suggests that the size of the literacy leader job was greater than the time provided. A fully released DP/Literacy Leader in a large case study school pointed out that she routinely gave half of her time to the literacy leader role during the project.

To be a literacy leader is quite a big job. It's a far bigger job than most people think. (Literacy leader)

A number of schools chose to fund the literacy leader role as a full-time position and many more increased the number of literacy leaders in their school during or after the professional development, indicating that the job was perceived to be too big for one person who also had classroom teaching responsibilities.

Findings from this evaluation suggest that further release time was needed for literacy leaders to work with others within their professional learning communities to collectively build their pedagogical content knowledge relating to current concerns about student achievement and classroom practice. Literacy leaders need both the time to further develop their knowledge and skills, and recognition of the time it takes to perform the role skilfully. In an ideal world, literacy leadership would be a full time position, supported by ongoing professional learning, rather than something “fitted in” on top of a full day’s teaching.

Summary

Many literacy leaders began the professional development without the skills and knowledge needed for their role. Literacy leader and teacher responses suggest that many literacy leaders did not develop enough pedagogical content knowledge during the LPDP, or did not have adequate time to provide teachers with specific feedback after classroom observations, model effective literacy practice, or support teachers to make changes to their classroom practice.

Literacy leaders reported positive shifts in their leadership and facilitation skills but only one-quarter rated the LPDP as “very effective” overall in building these skills.

Most literacy leaders felt “very well supported” by their facilitator. The support they most frequently rated as having a “strong positive impact” was carrying out classroom observations alongside the facilitator, observing the facilitator giving feedback, observing the facilitator leading learning conversations, and getting feedback from the facilitator on their ability to lead conversations with teachers. In contrast, only about half of literacy leaders felt very well supported by their principal and the forms of further support most frequently identified as being needed were more release time on a regular basis, and more principal interest in and understanding of the LPDP and their literacy leader role.

The findings discussed in this chapter highlight the value of supporting the ongoing development of literacy leaders’ knowledge and skills to lead school-wide literacy development, and this also requires the provision of time for literacy leaders to work with others.

6. Professional learning communities

One of the goals of the LPDP is to build effectively led professional learning communities.²⁷ This aim is supported by Best Evidence Synthesis findings which show opportunities to interact in a community of professionals to be one of the contextual conditions necessary for promoting professional learning in ways that impact positively on student achievement. (Timperley et al, in press).

Timperley et al (ibid) found that participation in communities of practice was a necessary but not sufficient condition for lifting student achievement. Shifts in student achievement were related to the *nature* of these communities and their activities. Effective professional learning communities were those that provided opportunities to process new understandings and challenge problematic beliefs, with a focus on analysing the impact of teaching on student learning.

Another key idea was that professional learning is best done on site with other teachers. It was expected that teachers would learn within a professional learning community so that the learning and improvement culture would continue after each school completes its two years with the LPDP. It was thought that these communities would initially be developed by the facilitator who would work as a “visiting leader” and that over time school leadership—principals, literacy leaders, syndicate leaders—would lead the professional learning. There was an expectation that these changes in both the classroom and at the school-wide level would take time and that schools would go through the changes at different paces.

The professional learning community outcome had two tools, based on Helen Timperley and Judy Parr’s research. The following research background is quoted from the “Facilitators Guidelines, Appendix 2: Needs Analysis Guidelines for Facilitators”.

Five interrelated characteristics were identified as being distinct and critical to building effective professional learning communities in schools. These are:

- *Engagement in reflective dialogue whereby teachers examine research and link this to their practice, developing a shared language, deepening their instructional knowledge, and using this research to challenge their own assumptions and practices;*
- *A collective focus on student learning and achievement where data is used to reflect on the effectiveness of teaching, to discuss individual rates of progress, to benchmark, and to make decisions about next steps in their literacy practice;*
- *Collaboration amongst teachers to share expertise, to critically examine practices, and to call on each other to develop skills and knowledge;*
- *Deprivatised practices, where teachers learn by peer coaching, structured observations, and sharing their classroom data in teams;*

²⁷ The words “effectively led” were not initially included in this goal. They were added for the 2006 cohorts in response to findings from the embedded research (Timperley, Parr, & Werner, 2005) that many leaders were not leading teachers in professional learning meetings to examine data in ways that were closely connected to their teaching.

- *Teachers have shared values and expectations about literacy teaching and learning and levels of achievement.*

The first professional learning tool is a set of questions used in an interview by the facilitator with the principal and literacy leader/s. When initially used, there was an expectation that the facilitator would ask each question and would then discuss the evidence presented by the school leaders. Once the evidence had been discussed, the group would then make a decision about where the school sat on the continuum of statements linked to the question. From there, they would move to the next question. Probe questions were developed at the first facilitator training hui, and facilitators role-played aspects of the interview as preparation for the interview.

The second tool comprised a questionnaire that teachers were asked to complete. It asked them similar questions about the professional learning community in the school and the roles the leaders played in the community. This questionnaire was completed at the same time as the scenario analysis.

In this chapter we present shifts in practices indicative of effectively led professional learning communities in the LPDP schools, drawing on data from the case study interviews, evaluation questionnaires for literacy leaders and teachers, LML questionnaires for literacy leaders and teachers, and LML questionnaires for school leaders.

When presenting data from the case study interviews and evaluation questionnaires, we report separately the responses of literacy leaders and teachers in most instances. When we combine their responses we use the term ‘practitioners’. Since it is not possible to identify the role of respondents to the LML questionnaires (that is, literacy leader or teacher) when presenting this data we use the term ‘practitioners’. The LML leadership questionnaire was completed at the start of the professional development by each school’s principal and at the end of the professional development by either the principal, the literacy leader, or by both together. As it is not possible to identify the role of the respondents (that is principal or literacy leader) we use the term ‘school leader’ when reporting these responses.

When reading this chapter it is important to remember that:

- Case study data were collected in March 2006;
- Evaluation questionnaires were distributed in August 2006, and practitioners’ ratings of their skills and knowledge at the start of their LPDP professional development were completed retrospectively; and
- LML questionnaires were completed at two time points: at the start and end of their LPDP professional development.

We present statistically significant relationships and trends for associations between professional learning community practices and shifts in student achievement.

Nature of LPDP schools’ professional learning communities

Staff from most case study schools reported that they were working a lot more collectively than previously. They had begun to work in learning communities during the LPDP in ways that were very different from their previous staff or syndicate meetings. With the help of their facilitator they worked through a process of gathering and interpreting data, and making judgements about where to focus next. They also read and discussed research and readings to deepen their understandings of rationales for new approaches.

Boy what a change in two years—from doing their own thing in their own classrooms to teachers talking about learning. (Principal)

We did it in staff meetings and in our own syndicates. Previously we did our own thing in our own classrooms. (Teacher)

We are now a wonderful community of teachers who share and talk. They are a positive resource. The LPDP has turned us into a powerful group of professionals who discuss and don't take things for granted. (Teacher)

Genuine learning communities involve “teachers working in a spirit of openness and critical reflection, sharing their ideas and expertise with each other, and engaging in an ongoing process of inquiry that promotes deep team learning” (Department of Education and Training, 2005). The degree to which this occurred in the case study schools varied.

We asked survey and case study participants to rate on a four point scale the degree to which they considered their syndicate (or school) was operating as a professional learning community, based on the understanding that a professional learning community: focuses on teachers as learners; focuses constantly on the links between teaching and learning; and involves teachers using evidence of student achievement to regularly reflect together on the effectiveness of past teaching practice and to collaboratively plan future teaching.

Twenty-two percent of literacy leaders and 28 percent of teachers considered their professional learning communities were “very well established”. At the other end of the scale a quarter of literacy leaders and 28 percent of teachers considered they were “just beginning” to operate as professional learning communities. Only one literacy leader and three teachers did not consider they worked as a professional learning community at all.

Table 60 **Practitioners' ratings of their professional learning communities**

	Very well established PLC		Established PLC		Just beginning as a PLC		Do not operate as a PLC		No response		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Literacy leader	18	22	39	47	21	25	1	1	4	5	83	100
Teacher	38	28	56	41	38	28	3	2	2	1	137	100
Total	56	25	95	43	59	27	4	2	6	3	220	100

Table 61 shows an analysis of these data by cohort (the 2005 cohort schools are excluded due to small numbers). Practitioners from the February 2004 and July 2004 cohorts held very similar views on how well their professional learning community was established in their school.

Table 61 **Practitioners' ratings of their professional learning communities by cohort**

Cohort	Very Well established PLC		Established PLC		Just beginning as a PLC		Do not operate as a PLC		No response		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Feb 2004	43	27	71	44	41	25	3	2	3	2	161	100
July 2004	11	27	18	44	9	22	-	-	3	7	41	100
Total	54	26	89	44	50	25	3	2	6	3	202	100

Table 62 shows an analysis of these data by school focus (reading or writing). A slightly higher percentage of literacy leaders and teachers from reading schools than writing schools (28% versus 23%) considered their professional learning communities to be “very well established”.

Table 62 **Practitioners’ ratings of their professional learning communities by focus area**

	Very well established PLC		Established PLC		Just beginning as a PLC		Do not operate as a PLC		No response		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Reading	31	28	41	37	30	27	4	4	4	4	110	100
Writing	25	23	54	49	29	26	-	-	2	2	110	100
Total	56	25	95	43	59	27	4	2	6	3	220	100

Teachers from reading schools who rated their professional learning community as “very well established” tended to come from high shift schools, those who rated it as “established” tended to come from mid-shift schools and those who indicated they were “just beginning” tended to come from low shift schools. There was no such association for writing schools.

Leadership support

One of the seven elements in the professional learning context associated with shifts in student achievement is having the active involvement of school leaders (Timperley et al, in press). In this section we look at practitioners’ perceptions of their school leaders’ support, and associations between school leadership, the strength of professional learning communities, and school capacity to lift student achievement.

Overall, literacy leaders saw their principals as committed to the LPDP. At the time of the evaluation survey, two-thirds (66 percent) rated their principal as showing “a lot” of commitment and just under a quarter (24 percent), “quite a lot” of commitment.

Literacy leaders from writing schools who rated their principal as showing “a lot” of commitment tended to come from high shift schools. No association was shown for reading schools. In the following sections we discuss some possible reasons for these differences.

Most school leaders provided adequate organisational support. Nearly all literacy leaders reported that release time was funded for themselves (80 percent) and teachers (74 percent), and that new resources were bought to support the LPDP (77 percent). Over a quarter of literacy leaders reported that more literacy leaders were appointed at their school to support the LPDP (28 percent). Such organisational support is important because as Joyce and Showers (2002) observe “the very best trainers, with the most relevant and powerful content, will find little success or receptivity in poor organisational climates” (p.75).

All principals in the case study schools with higher shifts in student achievement were actively involved in the professional development. There was less consistency in the schools with lower shifts in student achievement. Principals in two of the low shift schools did not ensure that the facilitator had adequate time to meet with teachers. One principal consistently used time in facilitator meetings to carry out school administrative tasks,

leaving insufficient time for the facilitator to achieve her intentions, and another showed little interest during meetings, as illustrated by his spending time sending text messages on his mobile phone. Another principal in a low shift school believed that “parents are more worried about a child bullying than whether he can read or write” and made undermining comments during the LPDP such as, “Research can show anything you want”.

However, survey responses suggest such principals were in the minority and most principals were considered to be actively involved in the professional development. Just under two-thirds of literacy leaders indicated their principal actively participated in LPDP meetings “most of the time” (64 percent). Just under one-fifth indicated that their principal actively participated “some of the time” (19 percent), while 14 percent indicated “not much of the time”, one percent indicated “hardly ever”, and one percent did not respond.

Shifts in the support and challenge provided by school leaders

Large shifts occurred in the percentage of leaders and practitioners who saw that part of a leader’s role was to challenge practices at individual and whole school level (37 percentage points) (Table 63). There were corresponding increases (of 15 to 25 percentage points) in the percentage of practitioners who agreed they had a school leader who supported and challenged them to teach well, helped them identify their professional learning needs, helped them work out strategies to improve their teaching, and helped teachers to learn together.

Table 63 **Shifts in school leader practices as reported by leaders and practitioners**

Practice	School	Start (%)	End (%)	Shift	Association with shifts in student achievement
Leaders see their role as challenging practices at individual and whole staff level.	Reading	40	77	37	No association
	Writing	49	86	37	No association
Practitioners agree they have a leader who supports them to teach well	Reading	68	83	15	No association
	Writing	68	85	17	No association
Practitioners agree they have a leader who challenges them to teach well	Reading	63	79	16	No association
	Writing	59	82	23	Practitioners who at Time 3 agreed they had a leader who challenged them to teach well were more likely to come from high shift schools. (MM)
Practitioners agree they have a leader who helps them to identify their professional learning needs	Reading	53	73	20	No association
	Writing	53	77	24	No association
Practitioners agree they have a leader who helps them to work out strategies to improve their teaching	Reading	51	71	20	No association
	Writing	51	71	20	Practitioners who at Time 1 agreed they had a leader who helped them to work out strategies to improve their teaching were more likely to come from low shift schools. (MM)
Practitioners agree they have a leader who helps teachers learn together.	Reading	54	72	18	No association
	Writing	57	79	22	No association

Association with shifts in student achievement

The multilevel modelling showed that practitioners from writing schools who at the *start* agreed they had a leader who helped them work out strategies to improve their teaching were more likely to come from low shift schools. (Appendix B, Table 7). This suggests the LPDP had less impact in schools where there was less room or opportunity for improvement, in the context of the professional development provided, in leaders' practices. No relationship was shown for reading schools.

The multilevel modelling also showed that practitioners from writing schools who at the end of the professional development agreed they had a leader who "challenges me to teach well" were more likely to come from high shift schools (Appendix B, Table 7). No relationship was shown for reading schools.

Use of student achievement data

Shifts in the use of student achievement data

The use of student achievement data also improved over the course of the LPDP, as perceived by school leaders and practitioners (Table 64).

Of particular note is the large shift in the percentage of reading and writing school leaders who saw as part of their role initiating collaborative analysis of student achievement data to set goals for individual teachers based on identified areas of student need (58 and 57 percentage points, respectively).

The proportion of leaders from reading and writing schools who by the end of the professional development saw discussing next learning steps based on classroom achievement information and teachers' literacy pedagogical content knowledge as the purpose of school meetings was similar (78 percent and 79 percent, respectively). However a greater percentage of writing school leaders (46 percent) than reading school leaders (29 percent) indicated their school had reached the point at which teachers were willing to change their practice when their analysis of achievement information showed a particular method was not working.

By the end of the professional development most practitioners reported assessing their students and discussing student achievement with their literacy leader or principal at least once per term, discussing the achievement of their students with their literacy leader or principal at least twice a year, and talking with colleagues about teaching strategies at least twice a year.

There was little change in the frequency with which practitioners from reading and writing schools reported talking about teaching strategies in relation to their student assessment information with colleagues as the majority did this at least once per term before the professional development. However, as "at least once per term" was the highest frequency option given on the LML questionnaire there may be under reporting of changes in frequency, for example, from once per term, to four times a term would both fall in the same category.²⁸

²⁸ In the evaluation questionnaire we also asked practitioners the frequency with which they discussed the implications of student assessment information for practice but we provided the additional options of "once a month" and "once a week". On average, practitioners from reading and writing schools estimated that by the time of the evaluation survey this had increased to once a month.

Table 64 Shifts in the use of student achievement data as reported by leaders and practitioners

Practice	School	Start (%)	End (%)	Shift	Association with shifts in student achievement
Leaders see their role as leading a collaborative analysis of the data to set goals for individual teachers based on identified areas of student need.	Reading	23	81	58	Leaders from both reading and writing schools who, Time 3, saw as part of their role facilitating a collaborative analysis of the data to set goals for individual teachers based on identified areas of student need tended to come from high shift schools.
	Writing	25	82	57	
Leaders described having school meetings to discuss next learning steps based on classroom achievement information and teachers literacy pedagogical content knowledge.	Reading	No data	78	N/A	N/A
	Writing	No data	79	N/A	N/A
Practitioners reported assessing their students in reading/writing at least once per term.	Reading	69	91	22	Practitioners who at Time 1 reported they either never assessed their students or only did so once a year tended to come from high shift schools (when compared with those who reported assessing their students more frequently).
	Writing	89	94	5	No association
Practitioners reported discussing the achievement of their students with their literacy leader and/or principal, at least once per term.	Reading	40	67	27	No association
	Writing	44	73	29	No association
Practitioners reported talking about teaching strategies in relation to their student assessment information with colleagues at least twice a year.	Reading	82	97	15	No association
	Writing	83	98	15	No association

Associations with shifts in student achievement

Both reading and writing school leaders who, at the end of the professional development, reported initiating collaborative analysis of the data to set goals for individual teachers based on identified areas of student need tended to come from high shift schools. This is consistent with findings in the research literature which show that analysing the impact of teaching on student learning and viewing student achievement as a collective responsibility are conditions shown to support effective change within professional learning communities (Timperley et al., in press).

There was an association between reading school practitioners who at the *start* of the professional development reported either never assessing their students in reading or only doing so once a year, and significantly higher shifts in student achievement. This was not so for writing schools. One explanation is that there was greater room for improvement in reading schools as at the start only 69 percent of reading compared with 89 percent of writing school practitioners reported assessing their students in their respective areas at least once per term. This would suggest that the LPDP had a greater impact on schools with poorer assessment practices to begin with.

Practitioners from writing schools who, at the end of the professional development, reported they talked about teaching strategies in relation to their student assessment information with colleagues more frequently than once a year (as opposed to those who those who reported never having such conversations or only doing so about once a year) tended to come from high shift schools.

No such association was shown in reading schools. This may be because, as reported earlier, a greater proportion of writing school than reading school leaders reported that practitioners were willing to change their practice when their analysis of achievement information showed a particular method was not working.

The greater willingness of writing school practitioners to change their practice when analysis of achievement information showed a particular method was not working, is also likely to relate to the greater degree to which writing school leaders saw as part of their role challenging practices at individual and whole staff level.

Professional reading

There was a large increase in the percentage of reading and writing school leaders who saw as part of their role selecting professional readings for practitioners and arranging discussion specifically related to teacher needs as part of the professional development focus (56 and 46 percentage points respectively) (Table 65). Over one-third of school leaders (40 percent from reading schools and 38 percent from writing schools) indicated that discussions of professional readings were conducted with the explicit aim of promoting student learning.

There were associated increases in the percentage of practitioners who agreed they had a leader who introduced professional readings that were useful for teaching and followed up on their professional reading, who reported reading literacy related professional readings for interest in their own time and who reported discussing at least once a term literacy-related professional readings with colleagues in syndicate or staff meetings (Table 65).

Table 65 **Shifts in school leader and practitioner professional reading practices**

Practice	School	Start (%)	End (%)	Shift	Association with shifts in student achievement
Leaders select readings and arrange discussions specifically related to teacher needs as part of the professional development focus	Reading	25	81	56	Leaders from reading schools who at Time 1 saw as part of their role selecting readings and arranging discussions specifically related to teachers' needs were more likely to come from low shift schools. (MM)
	Writing	20	66	46	No association
Practitioners agree they have a leader who introduces them to professional readings that are useful for their teaching	Reading	45	70	25	No association
	Writing	47	68	21	No association
Practitioners agree they have a leader who follows up on their professional reading	Reading	28	56	28	No association
	Writing	26	52	26	No association
Practitioners report discussing literacy related professional readings with colleagues in syndicate or staff meetings at least once a term	Reading	17	69	52	Reading school practitioners who reported that <i>prior</i> to the LPDP they never had these discussions tended to come from high shift schools.
	Writing	22	69	47	No association

These findings provide a contrast with the negative comments made by practitioners in the case study schools about the professional reading their facilitators required of them. A possible reason is that school leaders were better able than facilitators to choose professional readings of the difficulty and length best suited to the needs and abilities of their staff.

Association with shifts in student achievement

The multilevel modelling showed that reading school leaders who at Time 1 saw as part of their role selecting readings and arranging discussions specifically related to teachers' needs were more likely to come from low shift schools, suggesting the LPDP had less impact in schools with more effective practices to begin with. There was no such association for writing schools.

Reading school practitioners who reported never discussing literacy related professional readings with colleagues at syndicate or staff meetings, prior to the LPDP, tended to come from high shift schools suggesting the LPDP had greater impact in schools with less effective practices to begin with. There was no such association for writing schools.

Peer observations

In both reading and writing schools there was a large increase in the percentage of leaders who reported having regular classroom observations conducted for specified purposes. There were corresponding increases in the percentage of practitioners who reported being observed at least twice a year, having opportunities to contribute to discussions about the purpose of observations and feedback, and who reported receiving useful feedback after observations (Table 66).

Table 66 **Shifts in the frequency and nature of peer observations**

Practice	School	Start (%)	End (%)	Shift	Association with shifts in student achievement
Leaders indicate practitioners have regular classroom observations conducted for specified purposes	Reading	15	65	50	Leaders who at Time 3 reported having regular classroom observations conducted for specified purposes tended to come from high shift schools.
	Writing	11	76	65	No association
Practitioners report being observed at least twice a year by a principal, literacy leader, or colleague	Reading	24	55	31	Practitioners who, at Time 3, reported being observed at least twice a year (compared with those who reported being observed less frequently) tended to come from high shift schools.
	Writing	26	45	19	No association
Practitioners said they always or often had the opportunity to discuss in advance the reasons for observations and had some say in what they wanted feedback about	Reading	36	60	24	No association
	Writing	42	67	25	No association
Practitioners said they always received useful feedback to help them with their teaching after observations	Reading	27	48	21	No association
	Writing	30	55	25	No association

Although there were positive shifts in classroom observation practices, there was still some way to go. Less than one-quarter of school leaders (19 percent from reading schools and 18 percent from writing schools) considered they had reached the point at which observations had become embedded practice and focused on literacy practice related to an identified problem in student achievement.

At the end of the professional development more writing than reading school practitioners thought they “always” or “often” had the opportunity to discuss in advance the reasons for observations and had some say in what they wanted feedback about, and that they got useful feedback. A likely reason is the greater proportion of school leaders from writing schools who reported that classroom observations were conducted with specified purposes.

Although there were increases in the percentage of practitioners who reported always getting useful feedback after observations, the proportion from reading and writing schools who reported this by the end of the professional development had only reached about half (48 and 55 percent respectively), one of the lowest levels for effective professional practice. This is consistent with the finding that literacy leaders reported little shift in their ability to carry out observations and give specific feedback to teachers, discussed in Chapter 5.

There are three likely reasons for the lack of useful feedback. The first relates to schools where professional learning communities had not really developed and where there remained a lack of trust and collaboration among staff. For example the facilitator from one of the case study schools with lower shifts in student achievement indicated that:

The Literacy leader was too intimidated to enter the classrooms of teachers who were antagonistic.
(Facilitator)

The literacy leader in this school commented that the management team in the school were not open to being observed, and put on “fake lessons” when the facilitator insisted on their participation.

The second relates to time allocated for literacy leaders to share feedback with teachers. Findings from the case study schools suggest that it was not always easy to release the literacy leader and teacher for post-observation discussions and this was especially so for schools where availability of relievers was a problem, such as small rural schools. This meant that feedback was sometimes given in unsuitable circumstances, such as in the classroom while students were working independently, in rushed circumstances, or in teachers’ own time, such as after school. However some principals had found alternative solutions. One of the principals we interviewed had addressed this problem by purchasing a video camera and getting teachers to record video tape lessons for later analysis, and this was found to be a useful process by all concerned.

The third possible reason relates to the pedagogical content knowledge of literacy leaders. Providing feedback useful for teaching is dependent on having the requisite pedagogical content knowledge and as reported in Chapter 5 only 35 percent of teachers rated their literacy leaders’ pedagogical content knowledge as “strong”.

Associations with shifts in student achievement

At the end of the professional development leaders from high shift reading schools tended to report having regular classroom observations for specified purposes (as opposed to observations for no specified purposes) but no such association was shown for writing schools.

Practitioners from reading schools, who at the *end* of the professional development, reported being observed at least twice a year tended to come from high shift schools. Those who reported less frequent observations tended to come from low shift schools. There was no association for writing schools.

Modelling classroom literacy practice for colleagues

Table 67 shows there were large increases in the frequency with which literacy leaders from reading and writing schools modelled effective literacy practice for colleagues and practitioners reported observing a colleague's classroom literacy practice so they could learn from it. The increases were greater for reading than writing schools, but both were at similar levels at the end of their LPDP participation. There were no associations with shifts in student achievement.

Table 67 **Shifts in frequency of modelling and observing effective practice**

Practice	School	Start (%)	End (%)	Shift
Literacy leaders have another teacher observe their classroom literacy practice so they can learn from it.	Reading	17	69	52
	Writing	22	69	47
Practitioners observe another teacher so they can learn from it at least once a term.	Reading	10	48	38
	Writing	17	49	32

LPDP support of professional learning communities

Overall, the LPDP was seen to help build professional learning communities. Almost all facilitators and practitioners thought it had at least some positive impacts.

Over one-third of facilitators (41 percent), literacy leaders (37 percent), and teachers (37 percent) rated the LPDP as “very effective” as a means of helping build professional learning communities. Approximately half rated it as “quite effective” (52 percent of facilitators, 50 percent of literacy leaders, and 50 percent of teachers).

The LPDP was seen to have a positive impact on building a school-wide focus on learning, shared school-wide expectations and understandings, and collaboration between teachers (Table 68).

Table 68 **Impact of the LPDP for literacy leaders on building shared expectations, understandings and collaboration (n = 83)**

	A strong positive impact		Some positive impact		No Impact		A negative impact		No response	
	N	%	N	%	N	%	N	%	N	%
Build shared school-wide expectations	50	60	29	35	2	2	-	-	2	2
Build school-wide focus on learning	48	58	31	37	2	2	-	-	2	2
Collaboration between teachers	47	57	31	37	3	4	-	-	2	2
Build shared school-wide understandings	45	54	34	41	2	2	-	-	2	2

Building professional learning communities

Experiences with a positive impact on professional learning communities

The experiences literacy leaders, teachers, and facilitators most frequently identified from the list we provided as having a “strong positive impact” on the development of professional learning communities in their schools were:

- Analysing and discussing samples of student work (literacy leaders: 51 percent; teachers: 34 percent; facilitators: 86 percent);
- Analysing and discussing student achievement data (literacy leaders: 48 percent; teachers: 34 percent; facilitators: 69 percent); and
- Discussions about the implications of data for practice at syndicate or staff meetings (literacy leaders: 41 percent; teachers: 28 percent; facilitators: 48 percent);

Comments from practitioners in the case study schools illustrate how these experiences helped build professional learning communities:

It’s helping collegially. The focus on looking at where our children are at, and where we need to focus our teaching. (Teacher)

Teachers are more aware of school-wide data than just their own. If they know what expected levels of achievement are they know what to aim for. (Literacy leader)

The project sharpened the focus, and created a lot more teacher talk and help. We are now collectively analysing data, looking at each others’ data and sharing what we are doing in the classroom. (Teacher)

I used to just do running records, and now we do STAR and talk in teams about data and how to bring students’ levels up. Because LPDP was school-wide we talk about it a lot more across different age groups and classes. (Teacher)

At every team meeting we spend 10—15 minutes sharing successes. Teachers are now asking in staff meetings “I can’t get these children to shift—what do you suggest?” and the staff try as a group to work out a plan of action. Two teachers previously were not moving and staff combined pressure has brought about change—in the past they didn’t expect too much from their students. Now expectations are changed. There is an expectation for change (Literacy leader)

We now have more focused and informed discussion based on evidence. Team syndicates are looking at children’s data and planning together. There is an enhanced level of discussion and sharing of ideas with other teachers. (Teacher)

We fed off each other. It was a shared effort. We weren’t afraid to share ideas. It was not a closed shop. It was good to share student problems and possible solutions. (Teacher)

Teachers from reading schools who rated discussing the implications of data for classroom practice as having a “strong positive impact” tended to come from high shift schools, whereas those who rated these discussions as having only “some positive impact” came from low shift schools. There was no such association for writing schools.

Experiences least likely to be perceived as having a strong positive impact

The experience least frequently identified as having a “strong positive impact” on the development of professional learning communities in schools was discussing the evidence collated by the facilitator from the scenario

responses, the questionnaire responses, and the observations. Only 19 percent of literacy leaders and 11 percent of teachers rated this as having a “strong positive impact”.

The initial needs analysis was seen by the project leaders as a pivotal part of the intervention, involving the collection of data to inform the content of the subsequent professional development and assist principals and teachers to pinpoint their learning needs. Our case study data indicates that school participants frequently had missed this point.

This was because there was a tendency for facilitators to rush to begin data collection, rather than taking the time to collectively identify what was already known (or not known) about student learning in each school and to explore practitioner views about the perceived strengths and weaknesses of their current approaches to teaching literacy.

The initial observations could also create risks for the creation of trusting and supportive learning environments. Several teachers in the case study schools reported their discomfort at being observed early in the professional development, particularly if it was unclear to them what was being observed. Facilitator records confirmed that observations were carried out as early as the second visit, possibly too early for the need for the observations to be established.

One of the case study teachers we interviewed from a lower shift school felt the observations were like “crit lessons” she had experienced as a student, and she considered the facilitator had acted in a supervisory manner:

She said, “I *will* be coming into your classroom, and I *will* be seeing learning intentions and success criteria, and children not doing busy work.” I felt that they [facilitator and literacy leader] were going to go through the [children’s] books and god help you if you weren’t doing it properly. We weren’t dragging the chain. We were effective teachers—we became paranoid teachers. They didn’t understand your classroom dynamics. (Teacher)

Findings from the case study schools suggest that a trusting relationship between the facilitator and school staff, and a school culture of trust and collaboration between leaders and practitioners were necessary if facilitator observations were to help deprivatise practice in order to build professional learning communities.

It had never happened before. Teachers had to learn to accept their practice being more open. This created consistency, such as planning and using the DATs [deliberate acts of teaching]. (Teacher)

Similarly, a number of teachers did not understand why they were doing the scenario ratings, and many felt that they were being “tested” and would be judged ineffective if their answers were “incorrect”. The student testing took time, and a number of teachers felt frustrated that they hadn’t “done anything” for weeks/months, before the needs analysis was completed.

The first year all we got out of it was a tremendous amount of time gathering data, and we had to do it ‘Wellington’s way’. (Literacy leader)

The relatively limited role teachers had in the data gathering phase had an initial impact on teachers’ motivation to engage with the professional development, develop habits of inquiry, and work together as professional learning communities. This was because the needs analysis appeared not to include teacher “voice” about what school needs were, and reasons for teachers’ views.

As Earl and Katz (2006) emphasise, it is critical for the whole staff to be aware of and engaged in the planning process:

Change is hard work that requires motivation and capacity. If the staff does not believe in the changes and are not willing to explore and use new practices, nothing really happens. They need to be part of the thinking and planning that leads to adopting innovations and new directions. (p 35)

The multilevel modelling showed statistically significant associations in both reading and writing schools between teachers who indicated they had at least some say in what and how they would learn during the LPDP and high shifts in student achievement.

The multilevel modelling showed statistically significant associations between teachers from writing schools who rated discussing evidence from the scenario ratings, the questionnaire responses, and the facilitator observations, collected by facilitators as having a “strong positive impact” on their learning and high shifts in student achievement.

By the end of term 1, 2004, the Leadership and effectiveness Team (LET) were aware (from facilitator observations and interviews, and analysis of facilitators’ case studies) that facilitators were not involving schools in making sense of their data. Findings from the embedded research reported in the July 2004 research report led to the realisation that facilitators did not fully understand or ‘own’ project theories and practices (such as those related to the needs analysis and an evidence-based way of working). The project response was to explore the practice of examining reasons, personal theories, and principled knowledge for action with the LET in term 3 and 4, 2004 and with facilitators at national seminar and regional meetings from February 2005.

The project leaders acknowledge that they did not initially understand or provide the level of support facilitators needed because their own understanding of second order change was still developing (Bareta, English, and O’Connell, 2006).

The number of schools in the 2005 cohort is too small to use to evaluate whether the project’s theory of improvement and subsequent actions described above have had the desired impact on facilitators’ practice, and on teachers’ perceptions of their involvement and subsequent changes to practice. This is a question worth investigating further in future research with the 2006 cohort schools.

Summary

By the end of their LPDP participation, over a quarter of literacy leaders (25 percent) and teachers (28 percent) considered their professional learning communities were “very well established”. At the other end of the scale just over a quarter of literacy leaders (25 percent) and teachers (28 percent) considered they were “just beginning” to operate as a professional learning community. Only one literacy leader and three teachers did not consider they worked as a professional learning community.

By the end of the professional development most school leaders saw as part of their role:

- Challenging practices at both individual and whole school level;
- Leading a collaborative analysis of the data to set goals for individual teachers based on identified areas of need;

- Arranging school meetings to discuss next learning steps based on classroom achievement information and teachers' literacy pedagogical content knowledge;
- Selecting readings and arranging discussions specifically related to teacher needs as part of the professional development focus; and
- Ensuring practitioners have regular classroom observations conducted for specified purposes.

Leaders reported large shifts in these aspects of their work, particularly leading a collaborative analysis of the data to set goals for individual teachers based on identified areas of need.

Overall, the writing school leaders appeared to be more actively involved in supporting and challenging practitioners. The reading school leaders appeared to be more actively involved in the promotion of professional readings.

The findings presented in this chapter show associations between some of the effective practices staff reported engaging in at the end of the professional development or at the time of the survey and shifts in student achievement.

In reading schools, those who tended to come from high shift schools were:

- Leaders who, at the end, saw as part of their role leading a collaborative analysis of achievement data to set goals for individual teachers based on identified areas of student need;
- Practitioners who, at the end, reported being observed by a literacy leader, principal, or colleague at least twice a year;
- Teachers who, at the time of the survey, rated discussing the implications of data for classroom practice as having a "strong positive impact".
- Teachers who, at the time of the survey, rated their professional learning communities as "very well established".

In writing schools, those who tended to come from high shift schools were:

- Literacy leaders who, at the time of the survey, rated their principal as showing "a lot" of commitment to the LPDP;
- Practitioners who, at the end, agreed that they had a leader who challenged them to teach well (The multilevel modelling showed this association to be statistically significant);
- Practitioners who, at the end, agreed they had a leader who helped all staff learn together;
- Leaders who, at the end, saw as part of their role leading a collaborative analysis of achievement data to set goals for individual teachers based on identified areas of student need; and
- Leaders who, at the end, reported having regular classroom observations for specified purposes.

By the end of the professional development practitioners *least* frequently reported being observed at least twice a year and consistently receiving useful feedback after observations. These findings are consistent with the finding that literacy leaders reported little shift in their ability carry out observations and give specific feedback to teachers, discussed in Chapter 5. The likely reasons for this are lack of well established professional learning communities, inadequate time allocated for literacy leaders to share feedback with teachers, and literacy leaders with inadequate pedagogical content knowledge.

By the end of the professional development there was also a relatively low proportion of practitioners who agreed they had at least one school leader who followed up on their professional reading.

LPDP also identified problems for schools around classroom observations and professional reading in its March 2006 milestone report. The project response was to both find out more about how schools saw classroom observations (as a routine task, or as a formative assessment opportunity?), and to see a need for the facilitators to coach leaders more, e.g. rather than provide them with readings, help them identify what was needed and where to look for information. The July 2006 milestone built on this, so that school leaders would be coached to take an inquiry role from the start of the school's LPDP work, and facilitators would work more with school leaders on the range of purposes for classroom observations so that they could make decisions about what aspects of the observations they want to embed in their ongoing professional learning.

Almost all facilitators, literacy leaders, and teachers thought the LPDP had at least some positive impact on their professional learning communities. The experiences they most frequently rated as having a "strong positive impact" were analysing and discussing samples of student work, analysing and discussing student achievement data, and discussing the implications of data for practice at syndicate or staff meetings. The experiences least frequently rated as having a strong positive impact were discussing evidence collated by the facilitator from the scenario responses, questionnaire responses, and observations. Case study responses from this evaluation and project learning from facilitator observations, interviews, case studies, and embedded research suggest that facilitators had tended to rush the initial data gathering and carry out the analysis on their own, because facilitators did not fully understand or 'own' the project theories and practices related to the needs analysis and an evidence-based way of working. This meant that teachers did not always understand the point of the needs analysis or have much involvement in it.

The project response was to introduce the practice of examining reasons, personal theories, and principled knowledge for action with facilitators at national seminars and regional meetings from February 2005. It is worth investigating in future research with the 2006 cohort schools whether the project's theory of improvement and subsequent actions described above have had the desired impact on facilitators' practice, and on teachers' perceptions of their involvement and subsequent changes to practice.

There was some evidence to suggest the LPDP had greater impact on building school capacity to lift student achievement in schools whose practices were less effective to begin with. Those who tended to come from high shift schools were:

- Reading school practitioners who *at the start* reported assessing their students in reading less than once a term;
- Reading school practitioners who reported never discussing literacy related professional readings with colleagues at syndicate or staff meetings, *prior* to the LPDP.

There was also evidence to suggest that the LPDP had less impact on schools whose practices were more effective to begin with.

- The multilevel modelling showed reading school leaders who at the *start* saw as part of their role selecting readings and arranging discussions specifically related to teachers' needs were more likely to come from low shift schools.

- Writing school practitioners who *at the start* agreed they had a leader who helped them work out strategies also tended to come from low shift schools.

These findings have implications both for the schools selected to participate in professional development and for the flexibility of professional development providers to adapt to the differing stages schools are at.

If professional development initiatives such as the LPDP have less impact in schools already exhibiting practices indicative of strong professional learning communities more efficient use of resources could be made by selecting schools with the greatest need. This approach was adopted by the LPDP for the 2006 cohorts.

Another approach would be to offer different experiences or different lengths of professional development time according to need. For such an approach facilitators would need to be well equipped with strategies for both diagnosing and responding to schools' differing needs.

7. Sustaining change

Given the investment in the LPDP, and all professional development, there is considerable interest in whether student outcomes and improvements to school and teacher practices are maintained and improved once the professional development ends. In order to fully answer questions about sustainability, a longitudinal study which tracks the experiences of schools over a longer time period than this evaluation is needed.

In 2006, LPDP began a research study to see whether schools taking part in LPDP have sustained the ongoing culture of improvement that LPDP aimed to develop, including ongoing gains for student achievement, and any transfer of the evidence-based inquiry learning approach to other curriculum areas. Sixteen schools from the February 2004 cohort are taking part in this study.

The data we analyse as part of this evaluation provides a picture of practitioners' actions, experiences, and intentions soon after the professional development ended and of their initial capacity to sustain changes made to their practice. These data include interview responses from the case study schools in the February 2004 cohort and survey responses from literacy leaders and teachers in the February and July 2004 cohorts. We also include school leaders' responses to the Time 3 LML interview about the shifts they anticipated would be difficult to sustain in the light of the actual experiences of practitioners.

When presenting data from the case study interview questions and evaluation questionnaires we report separately the responses from literacy leaders and teachers in most instances. When we combine their responses we use the term 'practitioners'.

When reading this chapter it is important to remember that:

- case study data was collected in March 2006;
- LML leadership interview data was collected at the end of school leaders' LPDP participation;
- evaluation questionnaires were distributed in August 2006, and practitioners' ratings of their skills and knowledge at the start of their LPDP professional development were completed retrospectively; and
- the questions we asked did not define sustainability, thus different respondents may have been thinking of different things. We do not know, for example, whether they conceived sustainability to refer only to their classroom practices in literacy or to new ways of working across all subject areas, and whether they saw questions about sustainability school-wide as relating to the LPDP alone, or whether they recognised the schooling improvement dimensions that it promotes as a being a key to sustainability. These are important questions that warrant further investigation, and are now being addressed in the LPDP research investigation.

We present the trends and statistically significant associations between practitioners' responses and student achievement to identify factors that support student learning and achievement.

Perceptions of how well changes were sustained

School-wide changes

In August 2006 when we surveyed the LPDP schools, around a quarter of literacy leaders (24 percent) from the 2004 cohorts (including the discontinued schools) thought school-wide changes had been sustained “very well” and over two-thirds (68 percent), “quite well”.

Teachers were slightly more positive than literacy leaders with just over one-third selecting “very well” (35 percent), and just over half, “quite well” (58 percent), although there were also groups who selected “not very well” (7 percent) or “not at all well” (1 percent).

Responses by cohort were similar with 31 percent of practitioners from the February cohort and 29 percent from the July cohort selecting “very well”.

Individual classroom practices

Literacy leaders were positive about how well they had sustained changes to their own classroom practice. Just under two-thirds thought they had sustained their changes “very well” (60 percent) and just under half, “quite well” (40 percent).

Teachers tended to rate their ability to sustain changes to their classroom practice lower than literacy leaders. Just under half thought they had sustained changes “very well” (45 percent), and half “quite well”, with a small proportion selecting “not very well” (3 percent) or “not at all well” (2 percent).

The survey asked each literacy leader to rate how well the teachers across their school had sustained changes to their classroom practice. Approximately one-third of literacy leaders considered teachers had sustained changes to practice “very well” (33 percent) and just under two-thirds, “quite well” (63 percent). One literacy leader selected “not very well” and two did not respond.

Factors impacting on the ability to sustain change

Timperley et al (in press) conclude from their Best Evidence Synthesis on effective professional development that student outcomes can be maintained or improved following professional development when practitioners have:

- developed the depth of pedagogical content knowledge needed to make principled decisions about practice;
- developed the evidence-based skills of inquiry needed to identify next teaching steps and to assess whether changes to practice are impacting on student achievement; and
- organisational support to provide them with the evidence base, collective goals, and circumstances that continue to motivate improvement.

Teachers' data literacy and pedagogical content knowledge

One of the risks for sustaining change is teachers who had not developed the requisite data literacy, pedagogical content knowledge, and habits of inquiry needed to maintain and improve student achievement once the professional development ended. At the time of the survey teachers only rated as “quite strong” their ability to use assessment tools, and to interpret student data in relation to national norms and expected patterns of progress.

They only thought they understood “quite well” the theoretical principles underpinning effective literacy teaching and learning, and how to put these principles into practice.

Literacy leaders’ pedagogical content knowledge

The risk this poses was exacerbated by the finding that, although literacy leaders were positive about their ability to interpret student achievement data, many felt they lacked the pedagogical content knowledge needed to lead school change once the support of the facilitator was gone. At the time of the survey literacy leaders on average rated themselves as only “quite strong” at working out the knowledge teachers needed in order to develop more effective teaching. Teachers also expressed low levels of confidence in the ability of literacy leaders to support them to make changes to their classroom practice. Forty-seven percent rated their literacy leader as “not very strong” and 34 percent as, “not very strong at all” in providing this support.

School leaders had also identified this as a risk at the end of their participation in the LPDP. One of the two changes school leaders most frequently anticipated as being the hardest to sustain was “literacy leaders will continue to support syndicate leaders and teachers in their inquiry processes and literacy content knowledge” (selected by 29 percent of leaders from reading and 15 percent from writing schools).

The other change leaders most frequently anticipated as hardest to sustain was “all teachers will be observed and given feedback about the effectiveness of their literacy teaching (selected by 33 percent of leaders from reading and 50 percent from writing schools), a practice dependent on pedagogical content knowledge and inquiry skills. As discussed earlier in this report literacy leaders rated themselves as “not very strong” in carrying out classroom observations and giving specific feedback to teachers both prior to the professional development and at the time of the survey. Case study responses suggest that one of the main reasons for this was inadequate pedagogical content knowledge.

These findings suggest that systems are needed which provide leaders in school-wide professional development initiatives the time and opportunities once the professional development has ended for both their own ongoing professional learning, and for supporting the ongoing professional learning of their colleagues. The project has provided schools with the option of accessing further support from Literacy Development Officers (LDOs) and attendance at LPDP cluster meetings. However although nearly all schools from the 2004 cohorts expressed the intention of accessing this support, the LML Milestone Report, July 2006 (English, et al, 2006b) to the Ministry of Education indicates that a much smaller proportion have attended cluster meetings. This may relate to the amount of release time available to literacy leaders and their priorities for using it. This is discussed further in the section on release time later in this chapter.

Practitioners’ inquiry skills and habits of mind

The focus on developing inquiry skills and an inquiry habit of mind was the most frequently identified strength of the LPDP by facilitators (66 percent) in the open-ended question we asked, but was only identified as a strength of the LPDP by 10 percent of literacy leaders and teachers. A considerable proportion of teachers from the 2004 cohorts did not see the relationships between the data gathered from the project questionnaire (44 percent), scenario ratings (30 percent), classroom observations (17 percent), and student assessments (14 percent), and the professional development they undertook. This is probably because, as discussed earlier, not all teachers from the 2004 cohorts, and especially the February 2004 cohort, had an active role in this data gathering phase. However

data from the case study schools shows that when the facilitator did take the time to work with staff on the needs analysis the experience was positive for building practitioners' skills of inquiry.

Another reason practitioners' inquiry skills may not have developed earlier was that it was not until about one year into the professional development before the second set of school-wide data was collected and practitioners had the opportunity to inquire into the impact of their changes at a school-wide level. It was not until phase two that teachers began their classroom inquiry. Guskey (reported in Kreider and Bouffard, 2006) recommends that the design of professional development programmes should include a mechanism for demonstrating evidence of success from their students rather quickly, ideally "within the first month of implementation". This is because "people must have a positive reaction to a professional development experience before we can expect them to learn anything from it". Certainly seeing normative data about their students' achievement had a motivating effect on many teachers who previously had not known how their students were learning compared with others. And seeing evidence of learning gains was highly reinforcing for teachers.

Despite some misunderstandings during phase 1, teachers did report developing inquiry skills. On average practitioners reported that prior to the LPDP they used information from students and their work to better understand the effectiveness of their teaching "some of the time", and that at the time of the survey they did so "most of the time". This finding has positive implications for sustaining change, particularly if teachers have professional development opportunities to continue to build their pedagogical content knowledge.

Organisational support

Leadership support

The organisational support needed to provide practitioners with the evidence base, collective goals, and circumstances that continue to motivate improvement is dependent on strong leadership support. Over two-thirds of facilitators (62 percent) selected "not enough leadership support" as one of the main challenges to sustaining school-wide change.

In contrast, a relatively small number of literacy leaders (14 percent) identified this as one of the main challenges, even though only 39 percent rated the commitment of their principal to sustaining changes made during the LPDP as "very high".²⁹ This suggests that literacy leaders may have felt that the capacity to sustain school change was not wholly dependent on principal support, possibly because they considered that they or another school leader was in a position to provide this support. Teacher ratings of principal commitment were slightly more positive with 39 percent selecting "very high".³⁰

About the same percentage of practitioners from the July cohort (46 percent) and February cohort (41 percent) rated their principals' commitment as "very high".

Overall, teachers perceived the commitment of literacy leaders to be higher than that of principals. Half of the teachers rated the commitment of their literacy leaders as "very high" and just over one-third as "quite high" (34 percent), while a very small proportion selected "not very high" (6 percent) or "not very high at all" (1 percent).

²⁹ Just over one-third of literacy leaders selected "high" (36), 14 percent selected "not very high" and 1 percent, "not very high at all". A relatively large percentage of literacy leaders (17 percent) did not know or chose not to respond.

³⁰ Just under half of teachers selected "high" (46), 5 percent "not very high" and 2 percent, "not very high at all". Eight percent of teachers did not know or chose not to respond.

Release time

The challenge in sustaining school-wide change identified by most facilitators (83 percent) and literacy leaders (72 percent) was lack of time.

It was the most positive experience for PD that I've ever had. My big fear is that it will go down the drain if we don't have follow-up. The ideal would be if you had release time every week from now on to revisit what was learnt in the PD, to reflect and to plan". (Literacy leader)

The 2004 cohorts literacy leaders' estimations of the release time they received and the amount of time they spent to carry out their literacy leader role once the LPDP ended are shown in Table 69. After completing the professional development, the majority of literacy leaders from the 2004 cohorts was given no release time to carry out their literacy leader role (58 percent). Two-thirds of literacy leaders (66 percent) spent more time than they received during the LPDP, suggesting that the size of the job was greater than the time provided.

Table 69 **Average time literacy leaders from 2004 cohorts received and spent after the LPDP ended**

Time given (hours per week)	Time used (hours per week)									
	0		1-3		4-6		7+		Total	
	N	%	N	%	N	%	N	%	N	%
0	4	7	24	39	6	10	2	3	36	58
1-3	-	-	13	21	3	5	1	2	17	27
4-6	-	-	-	-	4	7	1	2	5	8
7+	-	-	1	2	-	-	3	5	4	6
	4	7	38	61	13	21	7	11	62	100

It is interesting to compare this table with Table 59 from Chapter 4 (which shows the time literacy leaders received and spent *during* the professional development) to see the differences in the release time given and used during the professional development with that given and used after the professional development.

Such a comparison shows that literacy leaders in the 2004 cohorts received less release time to carry out their literacy leader role once the LPDP had come to an end. During the first year of the professional development, 25 percent of literacy leaders received no release time compared with 58 percent once the professional development ended.

There was also a drop in the amount of time literacy leaders *spent* in their literacy leader role. In the first year, 53 percent of literacy leaders spent three hours or less carrying out their literacy leader role, whereas once the professional development came to an end this figure increased to 68 percent (including 7 percent who spent no time in their literacy leader role).

This drop in release time is a concern in terms of sustainability as it would be expected that if any thing literacy leaders, particularly those in schools at which professional learning communities were just becoming established and at which teachers were just beginning to develop their pedagogical content knowledge, would need to spend more time in their role once the project ended when the support of the facilitator is no longer there.

Most literacy leaders had fulltime teaching classroom responsibilities and responses from survey and case study staff suggested they struggled to manage competing priorities.

It is clear that if no time is available for literacy leaders to be released from their classroom responsibilities to provide in-class support for their colleagues then there is no mechanism for this support to occur.

Findings from this evaluation suggest that ongoing release time for literacy leaders to build their own and teachers' pedagogical content knowledge within their professional learning communities was needed. It may have been helpful for literacy leaders to have had opportunities to participate in an ongoing external literacy leader network which would provide them with opportunities for reflective dialogue about their practice. Assisting teachers to develop their literacy skills in both reading *and* writing (when the LPDP focus had been one or the other) requires a knowledge base equivalent to that of a facilitator. It, therefore, seems unrealistic to expect a literacy leader to teach full time *and* assist other teachers in any significant way.

Literacy leaders require conditions to further develop their knowledge and skills, as well as recognition of the time it takes to perform the role skilfully. This might, for example, occur at a systems level with the provision of regular release time for leadership roles such as that of the LPDP literacy leader, or recognition of these roles through the allocation of management units.

Teachers also required further time to develop their pedagogical content knowledge. Literacy leader responses indicate that only 23 percent of the schools provided teachers with release time for building on their development during the LPDP and most teachers (78 percent) selected "not enough time" as one of the main challenges to sustaining changes to their practice.

There is considerable research that suggests that the conditions for teacher learning are reflected in student learning (Hirsch, 2004; Southworth, 2000). When teachers are over busy, there is not the time in the school day for the unhurried examination of practice that learning communities require. There is a need to find ways for schools to provide time and support for collaborative teacher learning.

Staff turnover

Over three-quarters of facilitators (76 percent) and over half of literacy leaders (57 percent) identified staff turnover as one of the main challenges to sustaining school-wide change. After lack of time, this was the most frequently identified challenge.

Small schools are particularly vulnerable to staff turnover, and as there are many small schools in New Zealand, there are particular risks to sustainability when teachers move on to other schools, or when key staff retire. One of the sole charge schools initially selected as a case study could not be included because the principal had moved on and the new principal had little understanding of the project. Practitioners at one of the very small case study schools expressed concern about their capacity to sustain change, given that the teacher of senior classes was due to retire soon, and that their principal had recently moved to another job. Another larger case study school had lost its literacy leader and there was no one in the school with the knowledge and skills to take over the role.

Distributed leadership and established professional learning communities

Staff turnover poses the greatest risk when there is a lack of distributed leadership and when professional learning communities are not well enough established. Just over half the facilitators (51 percent) and nearly one-quarter of literacy leaders (22 percent) identified insufficient distributed leadership as one of the main challenges to

sustaining school-wide change. And nearly two-thirds of facilitators (62 percent), and over a quarter of literacy leaders (26 percent) and teachers (26 percent) identified professional learning communities that were not well enough established. Given the finding that only about a quarter of literacy leaders (25 percent) and teachers (28 percent) considered their syndicate or school professional learning communities were “very well established”, it is perhaps surprising that this was not identified as a challenge by a greater number of literacy leaders. One explanation is that literacy leaders were not always aware of the relationship between well established professional learning communities and school capacity to sustain change. This explanation is consistent with the finding that only 28 percent of literacy leaders (and 4 percent of teachers) identified building professional learning communities as one of the main aims of the LPDP.

Teacher resistance

There was evidence to suggest a lack of commitment on behalf of some teachers in about one-third of schools. Nearly half the facilitators (48 percent) and a third of the literacy leaders (29 percent) identified resistance among teachers as one of the main challenges to sustaining school-wide change.

External support

When asked to describe any further support which would help sustain any school-wide changes made during the LPDP the most frequent response from literacy leaders in the 2004 cohorts was the need for ongoing visits from the facilitator.

However, responses to the LML school leadership interview shows that relatively few leaders anticipated accessing outside professional support to assist the “hardest to sustain changes”. Only two school leaders from writing schools and no school leaders from reading schools anticipated accessing outside professional support for their literacy leaders. And only two school leaders from reading schools and no school leaders from writing schools anticipated accessing outside professional support for syndicate leaders and teachers to support the hardest to sustain changes.

At the time of the interviews literacy leaders from most case study schools were still contacting facilitators “unofficially”. They were uncertain if the Literacy Development Officers (LDOs) responsible for supporting schools once the project ended would be able to offer the professional development and support equivalent to a facilitator with whom they already had formed a relationship, and who knew the school context and the issues staff faced. Later, survey responses show that literacy leaders did value the support provided by the LDOs. Over one third (37 percent) rated their support as “useful” and over one fifth (21 percent) as “very useful.” Nonetheless, ongoing professional development and support from the facilitator remained a frequent survey recommendation from literacy leaders, teachers, and facilitators.

Usefulness of project resources to help sustain change

As well as trying to help schools develop beliefs and practices necessary for sustaining change, the LPDP provided schools with a range of resources to support them once their professional development came to an end. Table 70 and Table 71 show literacy leaders’ and teachers’ ratings of the usefulness of a range of these resources for helping to sustain classroom and school-wide change. The three resources which literacy leaders and teachers found the most useful were the school action plan, the support provided by the LDO (as discussed above), and the

readings and references provided during the LPDP. The online video resource developed by LML for the project also provides a valuable source of external support. However at the time of the survey this resource had only recently become available and less than half the literacy leaders and almost no teachers from the 2004 cohorts had accessed it.

Table 70 **Literacy leaders' views of usefulness of resources for sustaining change**

	Very useful		Useful		Not very useful		Not at all useful		Have not used	
	N	%	N	%	N	%	N	%	N	%
The school action plan	18	22	45	54	9	11	-	-	11	13
Support of Literacy Development Officer	17	21	31	37	3	4	3	4	-	-
Readings provided during LPDP	15	18	45	54	9	11	1	1	13	16
Support of other schools	6	7	19	23	16	19	6	7	36	43
Videos introduced during LPDP	4	5	28	34	15	18	1	1	35	42
On-line video resource	1	1	23	28	5	6	5	6	49	59
Information on project extranet	1	1	17	21	13	16	3	4	49	59

Table 71 **Teachers' views of the usefulness of resources for sustaining change**

	Very useful		Useful		Not very useful		Not at all useful		Don't use	
	N	%	N	%	N	%	N	%	N	%
Readings provided during LPDP	35	26	70	51	12	9	3	2	17	12
Support of Literacy Development Officer	28	20	66	48	13	10	2	2	28	20
The school action plan	24	18	68	50	17	12	1	1	27	20
Videos introduced during LPDP	12	9	58	42	24	18	2	2	41	30
Support of other schools	6	4	16	12	24	18	7	5	84	61
Information on project extranet	6	4	29	21	18	13	4	3	80	58
On-line video resource	4	3	18	13	19	14	6	4	90	66

Capacity to sustain change by cohort

We asked facilitators how many schools they had worked with in each of the February 2004, July 2004, and February 2005 cohorts, and to rate how well they thought these schools would sustain the changes made. Table 72 shows that facilitators saw school capacity to sustain change as increasing slightly with each new cohort. By the 2005 cohort, they thought there would be problems sustaining the changes schools made in their practice in a quarter of the schools; a third would continue what they had gained, and 44 percent would do "quite well".

Table 72 **Facilitator perception on the likelihood of schools sustaining change (n = 29)**

	% of schools sustaining change			
	Very well	Quite well	Not very well	Not at all well
2004 February cohort	30	32	21	17
2004 July cohort	30	42	16	12
2005 February cohort	32	44	15	10

Consistent with facilitator views, a larger percentage of practitioners from the July 2004 (59 percent), than from the February 2004 cohort (45 percent) considered they had sustained changes made to their practice during the LPDP “very well”.

Facilitators interviewed as part of the case studies described how their capacity to support staff to build professional learning communities, inquiry habits of mind, and work towards sustainability earlier in the project had improved, and the positive impact they were seeing in successive cohorts.

We’ve now realised that we have to work towards sustainability earlier. I’m now getting literacy leaders doing things after two months that first time round they were struggling to do after two years. Because I think we didn’t share the big picture with literacy leaders—they thought it was just about literacy.

In my [new schools] there are three I’ll need to do a lot of work [with] but I know how to engage them and what to do. Now I have the skills, so I feel confident.

In my current schools [the learning I have done] has had a huge impact. (Facilitator)

Summary

The findings reported in this chapter show that less than a quarter of literacy leaders and a little over one-third of teachers from the 2004 cohorts thought that changes made to school-wide practices during the LPDP had been sustained “very well” and most thought they had been sustained “quite well”.

Challenges to sustaining change identified by school practitioners included:

- Practitioners without the pedagogical content knowledge needed to work out the changes to make to classroom practice in response to student achievement data;
- Literacy leaders without the pedagogical content knowledge needed to help teachers work out how to alter their practice in response to student achievement data and provide effective feedback following observations;
- School leaders without the knowledge or commitment to sustain change through effective leadership of professional learning communities and the provision of time and opportunities for practitioners to continue building their skills and knowledge;
- Schools with insufficient distributed leadership or well enough established professional learning communities;
- Staff turnover, especially in small schools;
- Teachers resistant to school change; and
- Not enough access to external support.

The challenges described above might be addressed in a variety of ways and at a systems, as well as project and school, level. For example, the additional work and responsibilities required in leadership roles such as LPDP literacy leaders might be recognised with the provision of regular release time or through the allocation of management units. External literacy leader networks could be developed along the same lines as facilitator regional teams so that literacy leaders could build professional learning communities with opportunities for reflective dialogue about their literacy leader practice.

The evidence presented in this chapter suggests that the capacity to sustain change increased with successive cohorts. This is most likely because of increasing project capacity to assist schools to build the structures, culture, knowledge and skills needed for sustained change.

8. Facilitator learning

The practice of providing external experts as part of school professional development programmes, such as the LPDP facilitators, is supported by findings in the research literature. Nearly all the core studies analysed in the Best Evidence Synthesis (Timperley et al, in press) included external experts as part of their professional development programmes in schools. Timperley et al's synthesis showed that the relationship between external expertise and positive student outcomes was dependent on the skills and knowledge of the experts. To achieve positive student outcomes, external experts needed not only pedagogical content knowledge, but also the knowledge of how to make this meaningful to teachers and manageable within the school context. They found external experts to be more effective when they worked with teachers in an iterative way involving the co-construction of meaning rather than trying to impose preferred practices on them.

A core assumption in the LPDP is that what works to improve teachers' practice also works for facilitators and leaders. People working at all levels of the project are therefore expected to develop the habit of conducting an ongoing evidence-based inquiry into the effectiveness of their own practice, with the goal of enabling others to be more effective in their practice. Just like teachers and leaders, facilitators are supported to inquire into the effectiveness of their practice and, in turn, the project directors and leaders attempt to make transparent inquiry into their own practice through modelling evidence-based inquiry, and by reporting their learning and subsequent actions in milestone reports to the Ministry of Education. The addition of the fifth project outcome for the 2006 cohorts, "Evidence of effective facilitator practice," acknowledges the project's collection of evidence on facilitator practice since the beginning of the project, and its inquiry focus leading to changes that would make facilitator practice more effective in their work with schools.

For example the realisation during the first year of the project that facilitators did not fully understand or 'own' project theories and practices (such as those related to the needs analysis and an evidence-based way of working) was informed by researcher feedback, facilitator observations and interviews, and analysis of facilitators' case studies. The project directors used the concept of first and second order change described by Marzano et al (2003)³¹ to conclude that the easier, or "first order", shifts tended to be those associated with improvements of practice, while harder, or "second order", shifts tended to be those requiring an examination of personal beliefs and a new way of working.

Drawing on Marzano et al's findings that communication needs to be different for a second order change than for a first order change, the project directors concluded that the shifts they were aiming for may have been constrained by facilitators' beliefs and ways of working and that we need to search for new ways of communicating. This led them to ask, "How can we communicate to facilitators that what we did with the first cohort was not good enough to make some of the improvements that we need to make? How do we examine our beliefs and support facilitators to examine theirs, as these may be the constraints for the shifts we are looking for?"

³¹ Marzano et al (2003). "Balanced Leadership". MCREL.

The project response included introducing five “deliberate acts of facilitation” and a “learning conversation” process (Timperley, 2001) to be used with teachers and leaders which was focused on and practiced in subsequent regional team meetings and national seminars.

In response to researcher findings about the difficulties facilitators faced in developing the skills needed to use the learning conversation frameworks to co-construct improved practices with teachers, facilitators are now being:

- Supported to reflect on the effectiveness of their practice by analysing transcripts of their conversations with teachers;
- Supported to identify their strengths, needs, goals, and learning pathways;
- Using these to negotiate the focus of team leaders’ observations of their practice;
- Observed by their regional team leaders, and engaging in an evidence-based post observation conversations for the purpose of shared inquiry into the effectiveness and improvement of practice.

In this evaluation, we found the particular facilitators schools had accounted for differences in student achievement shifts across different schools. This is consistent with Timperley et al’s finding that the relationship between external experts and shifts in student achievement is dependent on the nature of that expertise and the context in which it is shared.

The multilevel modelling of the February 2004 cohort data (Dingle & McDowall, 2006) showed a significant facilitator effect accounting for 17 percent of the variation in student achievement shifts in reading schools and 33 percent of the variation in student achievement shifts in writing schools.

In the multilevel modelling carried out on the *combined* data from the February and July cohorts discussed in Chapter 3, the facilitator effect was much reduced, accounting for only five percent of variation in students’ achievement shifts in reading schools, and there was virtually no facilitator effect in the writing schools.

A likely reason for a reduced facilitator effect over time is the increased experience of facilitators as well as the considerable investment in facilitator learning and support made by the LPDP. Facilitators convene regularly at national meetings with the project leaders and university researchers and also belong to regional teams led by regional team leaders.

In this chapter we present facilitators’ views of their learning during the LPDP, and their recommendations for how it could be further improved.

Effectiveness of the LPDP in supporting facilitator learning

Generally, the facilitators gained knowledge and skills through their LPDP work: indicating that most did not start this work with all the expertise the work needed. Most facilitators who responded to the evaluation survey rated the LPDP as “very effective” in building their ability to interpret and use student achievement data (21) and their pedagogical content knowledge (19), but just less than half rated the LPDP as “very effective” in building their facilitation skills (14).

Table 73 **Effectiveness of the LPDP in supporting facilitator learning (n = 29)**

Effectiveness of the LPDP in building your	Very effective	Quite effective	Not very effective	Not at all effective	No response
Ability to interpret and use data	21	6	2	-	-
Pedagogical content knowledge	19	6	3	-	1
Facilitator skills	14	11	4	-	-

In the following sections we look more closely at each of these areas in turn to gain a fuller picture of facilitator learning through their LPDP work.

Interpreting and using student achievement data

Table 74 shows a positive shift in facilitators' ratings of their ability to interpret and use achievement data. Facilitators rated their pre-LPDP abilities to use assessment tools, interpret achievement data, and use it in planning as, "not very strong" to "quite strong". They rated their current abilities as "quite strong" to "very strong".

Table 74 **Mean rating of facilitators' skills in interpreting data before the LPDP and currently**

Statements	Pre LPDP mean	CurrentPost LPDP mean	Shift
Use achievement data to work out next steps for teaching and learning	2.55	3.69	1.14
Interpret student data in relation to expected patterns of progress	2.38	3.62	1.24
Use assessment tools such as asTTle and STAR	2.00	3.52	1.52
Interpret student data in relation national norms	2.24	3.48	1.24

* 1 = Not at all strong, 2 = Not very strong, 3 = Quite strong, 4 = Strong

The area of greatest growth overall was the ability to use assessment tools such as asTTle and STAR.

Pedagogical content knowledge

All facilitators joined the LPDP with at least some degree of literacy expertise or prior experience, and most had recently participated in literacy-related professional development or university study.³²

There were positive shifts in facilitators' ratings of their content and pedagogical content knowledge (Table 75). When asked how well they understood, prior to the LPDP, the principles underpinning effective literacy teaching and learning, how to put the theoretical principles into practice, and what effective literacy practice looks like, facilitators, on average, selected "not very well" to "quite well". When asked how well they understood these things at the time of the survey, they selected "quite well" to "very well".

³² Around three-quarters of facilitators indicated that during the three years prior to their involvement in the LPDP they had been involved in some form of literacy professional development or study. (21). Seven facilitators had carried out university study, and 19 facilitators had participated in some other form of literacy-related professional development.

Table 75 **Facilitators' ratings of their pedagogical content knowledge before the LPDP and currently**

Understanding of:	Pre LPDP mean	Current mean	Shift
What effective literacy practice looks like	3.04	3.89	0.85
The theoretical principles that underpin effective literacy teaching and learning	2.83	3.62	0.79
How to put the theoretical principles into practice	2.55	3.59	1.04

* 1 = Not at all well, 2 = Not very well, 3 = Quite well, 4 = Very well

Understanding pedagogical content knowledge in practice

We asked facilitators to rate their pre-LPDP and current understanding of the importance of a range of literacy practices. On average, facilitators thought they understood “quite well” prior to the LPDP the importance of the practices shown in the next table. By the time of the survey they thought they understood the importance of all these practices “very well”, except for providing students with opportunities to engage in a wide range of rich texts, which they understood “quite well”.

The three practices which at the time of the survey facilitators reported most understanding the importance of were: using assessment to improve future teaching and learning (4.00); teaching in a deliberate, purposeful and specific way (3.93); and linking new teaching with children’s prior experiences and knowledge (3.93).

Table 76 **Facilitators' mean ratings of their pedagogical content knowledge before the LPDP and at the time of the survey**

Understanding the importance of :	Pre LPDP mean	Current mean	Shift
Using assessment to improve future teaching and learning	3.07	4.00	0.93
Teaching in a deliberate, purposeful, and specific way	3.21	3.93	0.72
Linking new teaching with children’s prior experience and knowledge	3.21	3.93	0.72
The importance of using information from students and their work to better understand the effectiveness of teaching	2.76	3.90	1.14
Planning specific learning objectives for different groups or individuals to ensure you target the learning needs of <i>all</i> students	2.90	3.86	0.96
Planning a wide variety of learning experiences that draw on students’ interests and social and cultural identities	3.21	3.86	0.65
Sharing learning intentions with students	2.66	3.83	1.17
Targeted feedback and feed forward from teachers to students	3.07	3.82	0.75
Providing success criteria for students against which they can judge the quality of their work	2.66	3.79	1.13
Providing students with opportunities to reflect on and talk about their knowledge and strategies so they can improve their reading comprehension or writing	2.97	3.79	0.82
Talking with students individually about <i>their</i> understanding of their learning and any difficulties they have	2.90	3.79	0.89
Students having opportunities to help develop success criteria	2.34	3.69	1.35
Providing opportunities for students to engage with a wide range of rich texts	3.41	3.30	-0.11

* 1 = Not at all well, 2 = Not very well, 3 = Quite well, 4 = Very well

Looking at just the shift in ratings, not the start or end mean rating as described above, we see that facilitators' ratings shifted the most for these aspects of their understanding:

- Giving students the opportunity to help develop success criteria (1.35)
 - Sharing learning intentions with students (1.17);
 - Using information from students and their work to better understand the effectiveness of teaching (1.14); and
 - Providing success criteria against which students can judge the quality of their work (1.13).
- The first two and fourth of these were also the practices for which practitioners ratings shifted the most.

Facilitator ratings shifted the least for these aspects of their understanding:

- Providing students with opportunities to engage with a wide range of rich texts (-0.11);
- Planning a wide variety of learning experiences that draw on students' interests and social and cultural identities (0.65);
- Linking new teaching with students' prior experience and knowledge (0.72); and
- Teaching in a deliberate, purposeful, and specific way (0.72).

These four practices were also the practices for which practitioners' ratings shifted the least.

Note that although 'teaching in a deliberate, purposeful, and specific way', and 'linking new teaching with students' prior experience and knowledge' are in the group with least shift, they are also in the group of three practices which at the time of the survey facilitators reported most understanding the importance of. The small shift could be due to the high importance starting rating given to these practices. These findings show the close relationship between facilitator expertise and teacher learning which, in turn, is shown to relate to shifts in student achievement. This highlights how important it is for facilitators to have developed the necessary skills and knowledge prior to their role in schools.

Facilitation skills

Facilitators began the LPDP having had less experience and professional development in facilitation than in literacy. Around half the facilitators (15) reported having had professional development in facilitation skills prior to their involvement in the LPDP. Approximately three-quarters reported having had previous experience working in a facilitation role (22), although the positions the majority held prior to the LPDP tended to be more managerial or advisory in nature. Approximately half the respondents had previously held senior management (7), middle management (2), or teaching (5) positions in schools. Approximately one fifth were educational consultants (6), three were school advisors, two facilitators for other literacy initiatives, one a Reading Recovery tutor, and one, a Resource Teacher of Literacy (RTLit.)

Five facilitators had neither previous facilitation experience nor professional development in facilitation.

Facilitator responses suggest that their prior experiences and knowledge impacted on their initial capacity to do their job.

I don't think I had a handle on it when I was there. The school needed some tough messages but by the time I gave them it was too late. I needed to have done this right from the start.

Others felt better equipped.

Many of my team members express feelings of being overwhelmed because they have a lack of facilitation experience and/or literacy knowledge to feel confident to do the job. This is not my experience—I use the skills I had prior to starting. I enjoy the work.

Facilitators rated themselves, on average, as “not very strong” to “quite strong” prior to the LPDP in all the facilitation skills itemised on Table 77, except modelling effective literacy practice which they rated as “quite strong”. By the time of the survey their ratings had improved to “quite strong” and “strong” for all these facilitation skills.

The facilitation skills with the *highest ratings* at the time of the survey were:

- modelling effective literacy practice
- working out the knowledge teachers need in order to develop more effective teaching;
- being deliberate, explicit, and specific when working with teachers;
- carrying out observations and giving specific feedback to teachers.

The facilitation skills with the lowest ratings were:

- challenging principals who posed risks to the project outcomes by not fulfilling their responsibilities;
- working effectively with resistant teachers; and
- giving teachers the benefit of the doubt and respecting their different motivations.

Table 77 **Mean rating by facilitators of their facilitation skills before the LPDP and currently**

Statements	Pre LPDP mean	Current mean	Shift
Model effective literacy practice	3.14	3.79	0.65
Work out the knowledge teachers need in order to develop more effective teaching	2.68	3.69	1.01
Be deliberate, explicit, and specific, when working with teachers	2.66	3.62	0.96
Carry out observations and give specific feedback to teachers	2.55	3.62	1.07
See the assumptions and beliefs underpinning teachers' practices	2.34	3.45	1.11
Contract (e.g., contacting schools prior to visits to clarify the focus)	2.28	3.41	1.13
Challenge assumptions and beliefs without alienating teachers	2.29	3.36	1.07
Recognise your own beliefs and assumptions and to resist imposing these on others	2.28	3.34	1.06
Hold learning conversations	1.86	3.31	1.45
Define and set boundaries around your role and what this role does and does not entail	2.28	3.28	1.00
Support first and second order change rather than having a “do it for them” approach	1.97	3.24	1.27
Work effectively with resistant teachers	2.34	3.21	0.87
Give teachers the benefit of the doubt and respect their different motivations	2.59	3.19	0.60
Challenge principals who pose risks to project outcomes by not fulfilling their responsibilities	1.93	3.03	1.11

* 1 = Not at all strong, 2 = Not very strong, 3 = Quite strong, 4 = Strong

The skills for which facilitators' ratings *shifted the most* were:

- holding learning conversations;
- supporting first and second order change, rather than having a 'do it for them' approach; and
- contacting schools prior to visits to clarify the focus of the visit.

These shifts reflect the emphasis placed on developing these skills in national and regional meetings initiated by the project directors in response to project learning from the Auckland research findings.

Facilitators from the case study schools described how they had learned the necessity of raising any concerns about a school's participation in the project honestly and early on while they were easier to address. This was described as "having the hard conversations and fronting up early". The learning conversation approach proved invaluable in helping them to develop awareness of their own belief systems and the need to withhold their own judgements until they had tested them out. This had required them to "talk less and listen more" while being prepared to challenge assumptions and beliefs "without permanently alienating everyone".

Working with principals I am much more assertive and explicit about demanding their participation. If the principal says "I don't know anything about literacy", I say "then this will be the opportunity for you to model learning with your staff." I now expect them to be involved in the PD for the example it gives to the staff.

I learned not to let important issues slide and pay more attention to things like where a school tiptoes around a non-performing teacher or a principal who doesn't front. I now make an appointment to see the principal and talk about the impact their absence has. I'm having the hard conversations and knowing the process makes this easier. I always emphasise that the learning outcomes for the children are paramount and what we are there for at the end of the day.

In one school, a facilitator reported that she asked "Why doesn't the timetable allow teachers to teach language every day?" This resulted in timetable changes, a reorganisation of school journals to enable teachers to locate them, and the purchase of a CD-Rom based application that enables teachers and students to search the New Zealand School Journal Catalogue. Some facilitators also had to learn to advocate strongly for schools to provide the agreed upon release time for teachers, as this example illustrates:

I said, "In order for this project to work teachers need to be released to work with me" and he said, "So it's really going to make that much difference is it?" and he agreed.

Facilitators also talked about how they had developed coaching skills to support teachers and the literacy leader. They described "working inside their zone of proximal development", "getting alongside teachers", "learning ways of engaging tired teachers", "building trust", and "being flexible". One facilitator described her approach to working with literacy leaders as:

sharing with them the management skills and the skills for leading meetings, contracting, sharing my skills.

Facilitators described how they had learned to resist the urge to "jump in and solve everything" realising that their role was to help schools to identify and solve their own problems. Several facilitators emphasised the importance of handing responsibility back over to their schools.

Don't "tell". This isn't effective in the long term. Help them to develop the skills themselves.

Changing the way I do things e.g. how I 'feedback' to teachers—to a co-construction model where beliefs are challenged.

Most facilitators rated the LPDP as having a “strong positive impact” on their ability to work with teachers (20)³³ and principals (17)³⁴. Despite the inevitable challenges as an “outsider” working to effect change in a school, facilitators generally considered that they had been explicitly supported to learn the required skills by the project.

It has been the most effective professional learning I have ever done. I now feel I understand the role of principal or DP at a level I never did before.

[Of all my] schools there are three where I’ll need to do a lot of work to get principals on board but I know how to engage them and what to do. Now I feel I have the skills so I feel confident. I was a Scale A teacher with not much experience. The things they’re [principals] talking to me about shows they see me as an equal.

Practitioners’ perceptions of facilitators’ skills and knowledge

Literacy leaders and teachers ratings of their facilitators’ skills (Table 78 and Table 79) paint a similar picture to that described above, although practitioners overall gave lower ratings. Between 41 and 54 percent of literacy leaders and 32 and 42 percent of teachers rated each of the facilitator skills on Table 78 and Table 79 as “strong”, which seem relatively low percentages, given that facilitator skills and knowledge did have some bearing on practitioner learning and thus shifts in student achievement.

Table 78 **Literacy leaders’ perceptions of facilitators’ skills and knowledge at school**

	Strong		Quite strong		Not very strong		Not at all strong		Don’t know	
	N	%	N	%	N	%	N	%	N	%
Literacy pedagogical content knowledge	45	54	35	42	3	4	-	-	-	-
Skills in classroom observation and giving feedback to teachers	44	53	29	35	8	10	1	1	1	1
Ability to interpret and use student achievement data	42	51	34	41	7	8	-	-	-	-
Organisation skills	41	49	28	34	13	16	1	1	-	-
Knowledge of project assessment tools	39	47	34	41	9	11	1	1	-	-
Facilitation skills	39	47	31	37	9	11	4	5	-	-
Ability to support you to make changes in your classroom practice	35	42	34	41	11	13	3	4	-	-
Skills in modelling effective literacy practice	34	41	31	37	8	10	1	1	9	11

³³ Eight rated it as having “some positive impact, and one as having “no impact”.

³⁴ Ten rated it as having “some positive impact”, one as having “no impact” and one as having a “negative impact”.

Table 79 Teachers' perceptions of facilitators' skills and knowledge at school

	Strong		Quite strong		Not very strong		Not at all strong		Don't know	
	N	%	N	%	N	%	N	%	N	%
Ability to interpret and use student achievement data	57	42	70	51	5	4	-	-	5	4
Literacy pedagogical content knowledge	56	41	62	45	14	10	2	2	3	2
Skills in classroom observation and giving feedback to teachers	56	41	60	44	17	12	-	-	4	3
Knowledge of project assessment tools	52	38	67	49	12	9	-	-	6	4
Skills in modelling effective literacy practice	47	34	57	41	17	12	4	3	12	9
Ability to support you to make changes in your classroom practice	47	34	63	46	21	15	2	2	4	3
Organisation skills	46	34	61	45	20	15	7	5	3	2
Facilitation skills	44	32	63	46	18	13	11	8	1	1

The three facilitator skills literacy leaders and teachers most frequently rated as “strong” were: literacy pedagogical content knowledge (54 percent and 41 percent respectively), skills in classroom observation and giving feedback (53 percent and 41 percent respectively), and the ability to interpret and use student achievement data (51 percent, 42 percent respectively).

The three facilitator skills which literacy leaders and teachers most frequently rated as “not very strong” or “not at all strong” were organisational skills (9 percent and 10 percent respectively), facilitation skills (8 percent and 11 percent respectively), and skills in supporting practitioners to make changes to classroom practice (9 percent of literacy leaders and teachers).

How facilitators learned

Learning in regional teams

Facilitators valued the support of the LPDP regional team leaders. Of the 26 facilitator respondents who were not themselves regional team leaders, approximately two-thirds felt their regional team leader supported them “very well” (17) and one-third, “quite well” (9).

Facilitators interviewed as part of the case study component of this evaluation saw the regional team leaders as critically important to their learning and performance in their roles. They described team leaders as having very well developed skills, and considered that regional team meetings provided “major opportunities for learning”.

Regional team leaders were seen to contribute to theoretical and pedagogical content knowledge and “technical know-how” as well as offering opportunities to work through issues and learn more incidentally. Their preparedness to share their own knowledge and skill in providing feedback on facilitator practice in schools was identified as having a powerful impact on the development of facilitator confidence and expertise. Team leaders were seen to “have their feet on the ground”, therefore, enabling them to make meaningful links between research

and practice. A team leader was described as having an “enormous impact” because of her philosophy and “enormous historical knowledge of writing” which for one facilitator was “more significant than any number of boxes to tick in terms of the project”.

Our team leader has been amazing at sharing her amazing ability, content, being available, pointing me in the right direction when I need it. She observed me working with teachers, gave me feedback, and organised professional development where I needed more experience, for example holding group conferences with children.

Team leaders were also appreciated for their breadth of knowledge and ability to build a facilitator learning community.

He’s very skilled at helping us look for the main ideas. He has been the one who has held us together. If it hadn’t been for him I’d have gone. He’s been able to help us get an understanding and has given us time to practice. He allows us to let off steam and then cuts to the chase about what it’s all about. He allowed us to unpack the professional readings...Having the team—we’ve got a strong team.

Of all learning experiences during the LPDP the experiences facilitators most frequently rated as having a “strong positive impact” were those carried out as part of their regional teams. Table 80 shows facilitator ratings of these experiences. Professional conversations at regional team meetings were the experiences most frequently rated as having a “strong positive impact”.

Table 80 **Facilitators’ ratings of the impact on their ability to develop effective skills and knowledge (n=29)**

Impact of the LPDP on ability to develop	Strong +ve impact	Some +ve impact	No impact	-ve impact	Didn’t experience	No response
Professional conversations at regional team meetings	18	8	-	-	-	3
Reading and discussing professional readings about literacy teaching and learning	17	11	-	-	1	-
Opportunities to practice new learning in regional team meetings	14	11	1	1	1	1
Observations and feedback from the regional team leader	13	10	-	1	3	2
Reading and discussing professional readings about effective facilitation	11	13	-	2	3	-
Observing the regional team leader or more experienced facilitators	9	7	-	1	10	2

Over one-third of facilitators had not experienced observing the regional team leader or more experienced facilitators modelling effective facilitator practice (10). Of the 17 of those who did have this experience, 9 rated it as having a “strong positive impact” on their learning and 7 rated it as having “some positive impact” on their learning. One of the facilitators we interviewed as part of the case studies was brought into the project to support

an existing facilitator manage her workload and so had many more opportunities to observe than most, as they worked alongside each other in schools. She saw this as a “fantastic” learning opportunity. The facilitator described how the project was increasingly providing different forms of support to facilitators according to their differing needs.

Further support needed from regional team leaders

We asked facilitators in an open ended question to describe any further support from the regional team leaders which they would have found useful. The most frequent response included more opportunities to observe modelling by the regional team leaders (5).

Several facilitators indicated that they would have felt better supported if their team leader had not had such a large workload (3), had provided a clearer sense of direction at the beginning of the project (3), had been able to give greater amounts of support at the beginning of the project (2), had been able to provide more observations and feedback (2) and had been able to provide more help with the data entry requirements of the project (2). As one of the case study facilitators said,

They are very busy people. If you had a major problem she [regional team leader] would help you. It would be good if team leaders didn't also have to be facilitators—they're like teaching principals, I think it will lead to burn out.

Learning from the project directors

Facilitators also valued the support of the project directors. Over one-third (11) thought the project directors supported them “very well” in their facilitator role, just under half, “quite well” (13), and less than one-fifth (5) “not very well.”

Comments made by survey and case study participants indicate that facilitators valued the way the project leaders modelled inquiry to improve the LPDP, and were responsive to needs.

They're continually building on the knowledge base—going in deeper, building together...They continually model inquiry method—they are excellent role models.

They see the need, listen to the team leaders, and meet the need. They plan high quality stuff. They are always perfecting the model. They have a passion for what they do. They're always sending us stuff and bringing in speakers to meet the needs. They try to upskill people, like with the asTTle training.

Facilitators also valued the fact that one of the project leaders also worked as a facilitator in a school and so understood the realities of the job.

Lyn is in schools as a facilitator...For example today we had a Professional Learning Community and she brought a problem from her own school.

The most frequent recommendation for how this support could be improved included more explicit, clear and timely communication of project guidelines, requirements and expectations (10) and more feedback, particularly in relation to milestone reports (5). Other recommendations included opportunities for facilitators to reflect on, discuss, and question project decisions (3), and more manageable workloads (3).

Clearer guidelines, less change to processes requirements during delivery, slower more realistic pace of new learning, time to reflect and consolidate, not allowing the demands and scope of project to keep growing out of control.

More individual contact and feedback on completed milestone reports and actions.

Be organised earlier so we get the information before we're supposed to be using it.

Being clearer with guidelines from the outset and if changes are being made to give time for facilitators to reflect, discuss, and question these.

Learning from the Auckland researchers

Facilitators perceived the contribution of the university researchers to the LPDP to be important, particularly in terms of developing clarity about their roles and assisting them to learn skills to address problems. Table 81 shows facilitator ratings of the impact of their experiences with the Auckland researchers. The experiences most frequently rated as having a “strong positive impact” were: the learning conversations workshop, the information the Auckland researchers provided on literacy content and pedagogical content knowledge, and findings from the Auckland researchers’ work with schools.

Table 81 **Facilitators’ ratings of the impact on their ability to develop effective skills and knowledge (n=29)**

Impact of the LPDP on ability to develop	Strong +ve impact	Some +ve impact	No impact	-ve impact	Didn't experience	No response
Workshop on learning conversations	16	10	-	1	2	-
Information on literacy content knowledge, pedagogy, and learning	14	12	-	-	3	-
Findings from researchers' work in schools	11	15	-	2	1	-
Modelling provided by the Auckland researchers	9	9	-	2	8	1
Workshops using assessment tools such as asTTle writing	8	13	1	1	6	-
Training in classroom observation	7	12	1	1	8	-
Information on how to unpack the scenario responses	6	12	2	4	4	1

Facilitators from the case study schools reported being “challenged” by the researchers, which helped “take thinking to a higher level”. They perceived the researchers as having “a wealth of knowledge and wisdom” and having had a “huge impact”.

They have been really valuable. They gave a session on asTTle writing and it was superb. They're very, very good. They gave us what was missing at the start. Understanding what the scenario responses meant was a huge gap I had. Now they've showed us how to unpack them.

They've been doing a lot of tracking and feeding back. It is vital to see if things are working. The way they report back is very good... Often there is criticism of academics being in their ivory tower but they are out there interviewing people.

I listened to them talk about roles and responsibilities...I realised I had to be much tighter in other schools. I have had to make my role really clear. [Unnamed] school came in as a first year with me. Listening to the challenges in the researchers' schools was how I learnt. I stuck with an appropriate facilitation role and it has just paid off.

[They provided] helpful workshops, feedback to us, things about writing, reading, teacher knowledge. In research schools they sat in on staff meetings, feedback sessions with teachers... They helped us to know "are we giving clear enough messages to the literacy leader and to the teachers? Do they understand what the expectations are and their involvement in it?"

Challenges faced by facilitators

The challenges faced by at least one third of facilitators related to three main areas: insufficient time to manage the workload, technological difficulties, and the changing nature of the role, with the direction not always being clear (Table 82).

Table 82 **Main challenges faced by facilitators for the LPDP**

Main challenges	No. of responses* (n=29)
Not enough time to reflect on and consolidate new learning	19
Not enough time to complete the project documentation required	19
Not enough time to carry out the day-to-day project requirements	17
Technological problems with asTTle	16
The evolving, changing nature of the project	15
Insufficient expertise in using computers (e.g., excel, spreadsheets)	14
Not having a clear enough sense of direction at the start	14
Not enough time to practice new learning	12
Other	11
Technological problems entering data on the project database	10
Not developing the necessary facilitation skills early enough	9
Insufficient literacy pedagogical content knowledge early enough	4
Insufficient understanding of assessment principles early enough	2

* Responded totals greater than the actual number of respondents as a result of multiple responding.

Time and workload issues

One of the main challenges was time. In relation to facilitation tasks, at the time of the survey approximately two-thirds of the facilitators felt they did not have enough time to complete the project paper work and documentation, just under two-thirds felt they did not have time to carry out the day-to-day requirements of being a facilitator, and many commented on the large amount of time spent travelling to and from schools. In relation to professional learning, approximately two-thirds of the facilitators felt they did not have enough time to reflect on and consolidate new learning and just under half felt they did not have enough time to practice new learning.

I was doing 72 to 80 hours a week.

The time pressures are the main issue—much work/study needs to be done in weekends/evenings—especially trying to find time to digest and link to new learnings!

National seminars are great for professional learning, but you are lectured to on one level, and it's up to you to interpret and represent that information to teachers at staff meetings.

Very high workload—hard to keep momentum up and going in a large number of schools.

In addition, all case study facilitators commented on the heavy workload for participants in the first year. They appreciated the fewer numbers of schools they had to work with in 2005, but cautioned that project expectations were “creeping up” creating further pressure with risks of being “overwhelming.”

Related to the above discussion is the finding that just under half of the facilitators surveyed (13) commented on stress, fatigue, health problems, relationship problems, or an inability to maintain a work-life balance as a result of their involvement in the LPDP. For many the process of learning these new facilitation skills was challenging and emotionally taxing. They described themselves at the beginning of the project as “new and uncertain”, and for some, their self image was dented as they moved from a previous situation where they had felt very competent and successful, to a new role where they were novices faced with expectations that they found difficult to meet.

At times I would have hit the lowest of the low that I've ever been, and thought “I'm hopeless at everything”...There was too much new learning—you never had time to consolidate...You didn't have a life. The outcomes, phases, indicators—they kept firing it at us as if we had that understood.

Not enjoying learning anymore. Health issues, feeling nervous/stressed about not keeping up with new learning, database etc. No balance between personal-work life. Away from home a lot—given up personal commitments. A lot of travel at weekends. Dealing with angry teachers and leaders. Little or no time for own study. In survival mode all the time. The expectation of a 12 hour day as the norm.

At the outset (or during the first year I lost my confidence in my own skills and knowledge and abilities etc as I received *no* feedback. Workload and travel overload have overwhelmed me on a number of occasions and had impact on my health and family relationships.

Health has suffered this year –related to workload and concern re leadership role. I have had to let go extra curricular activities—life feels like it is nothing but work.

Yes—I became depressed, felt incompetent and experienced 'panic attacks' which needed medical support—Learning Media were very supportive but it shouldn't have reached this stage—I indicated early on that things weren't 'right'.

Overload and unreasonable expectations have resulted in resentment about the way people have been treated. Health and relationship and family problems have been a concern for many. The fact that people in mid career have been unable to continue study for qualifications. The time and effort put into gathering data and research material for which facilitators get no credit...

In verbal feedback to the evaluation team in 2006, the project directors stated that the facilitator workload issue was acknowledged in the 2004 seminar and that team leaders often discuss the roles of facilitators and the changing nature of these roles over time. The project directors attributed some facilitator concerns to the stress that accompanies efforts to achieve second order change citing the huge amount of learning about whole-school evidence-based inquiry and knowledge building. They described how some facilitators had taken on new learning and practices while still holding on to old practices and beliefs which caused the workload to be greater, providing

as an example, facilitators who planned a lesson that they intended to model, rather than planning with the teachers so that their decision making can also be modelled.

Several facilitators also acknowledged that much of the early stress was associated with new roles, evolving responsibilities, and responsibility to work in too many schools, and that the project has improved its support to facilitators through this process.

It was an interesting process for me. Although I have a rich background in literacy I found that all my confidence and belief in myself was being eroded during the first year of the project. Once I was aware of this I was able to turn it around, but it is often what the teachers experience too, when they are learning something new that challenges their practices.

Each facilitator seems to have had low times due to stress. As we move through, I can understand why this has happened (second order change) and we are more able to manage/anticipate potential stress areas.

Feelings of uncertainty are consistent with second order change but the intensity of facilitator concerns cited at the time of the survey in 2006 above suggest that while support was provided when LML became aware of the problems associated with facilitators' new roles, there are still enormous expectations on facilitators and workload pressures that, for some facilitators, have had serious impacts on their quality of life and wellbeing.

Technological difficulties

Other frequently reported challenges related to the use of technology, which contributed to the workload and time challenges facilitators experienced. Over half of the respondents identified technological difficulties with asTTle, just under half identified their insufficient expertise in using computers (word processing, Excel, spreadsheets etc.), and over one third identified technological problems entering data on the project database as challenges.

Lack of knowledge of the ASTTLE tool—creating tests, data management, analysis of data—using this to inform teaching. This has been a huge area of knowledge development for me and very valuable.

These difficulties were also raised in case study interviews.

Getting asTTle up and running was a problem. They didn't have the upgraded version and this caused trouble, and staff negativity.

The database is just hopeless. I have been having to get X to help me type up my notes.

Sense of direction

Another main challenge faced by facilitators was lacking a clear sense of where they were heading. Just under half of the respondents felt that they did not have a clear enough sense of direction when they first began working as a facilitator and over half identified the evolving, changing nature of the project as a challenge. A facilitator new to the project discussed how she has found it hard to come to grips with the essence of the project as well as responding to project changes. She felt that she had needed a clearer overview of the project when she began.

There is a lot of information, but it is hard to get a handle on. A lot of things seem to happen in a piecemeal way, it's difficult to keep changing tack and direction. It is confusing to teachers too when this happens. I'm still not sure what phase one actually is, and how the stages move into each other.

One of the consequences of "continually building the knowledge base" is changing expectations. Some facilitators felt that changes in direction were not always communicated to them in a clear or timely fashion.

Communication—About six versions of one needs analysis tool came in quick succession. The guidelines folder I was issued...was full of information [that had] all been superseded but I didn't know.

Reports and folders for the milestone were confusing. Each time we'd be told more and more was needed. We were never shown a model of what was required. When we were and we changed our recording, they would change it again.

Sometimes things are a bit last minute—waiting for materials to be printed when you're already in schools.

Similar responses came from case study interviews. At the time of the interviews some facilitators were “still waiting for the scenario analysis to arrive” and had not been given guidelines on how new data for this year should be presented.

There's no template, we end up putting pressure on the poor literacy leaders because we are late with our deadlines.

These experiences are likely to have impacted on facilitators' capacity to be, and appear to staff as being, organised and having a clear sense of direction. This helps explain the low ratings practitioners gave to facilitators' organisation skills, a finding otherwise difficult to explain given the prior experiences of facilitators as school managers, teachers, and advisors.

Facilitators' views of the key strengths of the LPDP

Facilitators were overall extremely positive about the LPDP when compared with other professional development they had experienced. Nearly all facilitators (26) indicated they would recommend the LPDP to others working in their role.

This is the best professional learning opportunity I have had in my career.

We asked facilitators what they considered to be the greatest strengths of the LPDP when compared with other professional development they had experienced.

The strength most frequently identified by facilitators (66 percent) was:

- the focus on inquiry and evidence-based practice at all levels of the project:

It's about schools inquiring and learning together—an active model rather than sitting passively having the PD 'done to them'! This is empowering but challenging.

Potential to develop the 'inquiry habit of mind' that supports an ongoing focus on improving learning and teaching. (Facilitator)

The breadth of inquiry. The support rather than the advisory role.

Reflective practice at all levels—facilitators, leadership, teachers, students.

The next seven most frequently mentioned were:

- the fact that the PD was school-wide and involved the development of professional learning communities (52 percent)

The push to develop the professional learning community has not been fostered in other PD I have experienced.

- the length of the professional development (35 percent);

The length of time to work with a school, i.e., two years.

- the intensity of the professional development—the ongoing nature of the support and guidance provided by facilitators (28 percent);

The ongoing relationships that develop between teachers, leaders, and facilitators have a positive impact on teachers asking the tricky questions, talking about their practice and what they need to do to help student achievement.

- that it focused on interpreting and using student achievement data to lift student achievement (38 percent);

Teachers are led to use the data to inform teaching—in the past maybe it was just put in the cupboard.

- the fact that it drew on recent research to build teachers' pedagogical content knowledge (24 percent);

Lifting pedagogical content knowledge in subject areas.

- that the PD was tailored to individual school and teacher needs (28 percent);

The ability to tailor the PD to meet the needs of schools, especially in the second round as I feel more experienced to do this.

- that it led to/focused on improved teacher practice (28 percent)

Making teachers think about practice rather than trying to provide programmes.

Recommended changes by facilitators to the LPDP

The recommendations of how the LPDP could be improved fell into two categories—those relating to the facilitators' own professional learning, and work, and those relating to the professional development experience for schools.

Recommendations relating to facilitators' learning and work

The recommendations relating to facilitators' own professional learning and work were consistent with the findings described in the section on challenges above. The most frequent recommendation made by just under a quarter of the facilitators was to provide facilitators with more information, training, and support when they begin the project (7 facilitators).

Introduce information and give time to practice/understand/see others do it *before* they expect us to implement it.

More initial support for new facilitators—unpacking the 'progression of support' and all accompanying documents—and perhaps changing some timelines to allow this to happen.

Longer period of training at the beginning for new facilitators—(For me it was like asking me to build the engine of a car and drive it at the same time!) Having said that I loved the experience.

Just under one-fifth recommended reducing the number of schools each facilitator is responsible for to allow more regular contact and more in-depth support and so improve the quality of delivery (5 facilitators).

Less schools—so we could get into the schools more that we do. More money given so teachers can be released more often—PD budget for some schools has been tremendous.

Less schools and teachers (per facilitator) so facilitators can deliver in more depth and support schools with regular contact and monitoring.

Continue on its path. More time allocation per school to increase the time for coaching.

Other recommendations mentioned by at least two facilitators included: providing clearer goals, expectations, information and sense of direction about the project to facilitators (4), providing more non-contact time for facilitators to study, reflect, plan, observe other facilitators and so forth (4), better catering for the diverse learning needs and interests of facilitators (3), providing facilitators with better technological support (3), being more rigorous and transparent about the criteria used to select schools for the LPDP (3), and having less paper work and accountability requirements of facilitators and more trust (2).

We started off with a hiss and a roar and went out to start without knowing what we were doing really—the evolving nature of this project meant this wouldn't be difficult really. This second cohort (for me) is benefiting from me having more of an idea of what we are aiming for and to help schools figure out where they want/need to go within that.

For the facilitator, more non contact time to support own learning, reflection, planning, evaluation of work in schools, own practice and data entry. Better support around technological issues—data, asTTle, computer for schools and facilitator.

Less reporting and being accountable (little trust). Fewer goals to work through. Less paperwork. A readiness before schools can come onto the project. More money available so literacy leaders can be released on a regular basis. Having release time for PD. More schools being able to come onto the LPDP—at the moment few schools able to access LPDP. Using 'Literacy Leadership' as a model so more schools could be on board. Have own study time instead of having a few people 'do well' out of the research.

If the National directors and PD offered as part of the project were able to be more tailored to diverse needs. This won't be met thru regional meetings either as my needs are vastly different to the rest of my team.

Recommendations relating to improving the experience for schools

Recommendations for improving the professional development experience for schools made by at least two facilitators included:

- more flexibility and responsiveness in relation to individual school needs (three facilitators);
- more release time funded for teachers and literacy leaders in schools (two facilitators);
- making the LPDP available to more schools (two facilitators);
- increasing the duration of the professional development beyond two years (two facilitators);
- providing more ongoing support once the project ends (two facilitators);
- ensuring that schools involved in the LPDP do not have other competing professional development occurring at the same time (two facilitators); and
- providing more funding for schools, as it is costing them much more than is provided (two facilitators).

Summary

The reduced facilitator effect shown in the multilevel modelling on the combined February and July 2004 data (when compared with the large facilitator effect shown in the February 2004 data alone) suggests that over time the quality of facilitator support has become more uniform. An explanation is the increased experience of facilitators as well as the considerable investment in facilitator learning and support made by the LPDP, through the inquiry approach.

Most facilitators rated the LPDP as very effective in building their ability to interpret and use student achievement data, literacy content knowledge, and understanding of transferring pedagogical content knowledge in practice and there were positive shifts in their ratings of their capability in all of these areas.. The area of greatest understanding in relation to pedagogical content knowledge was what effective literacy practice looks like. The area of least understanding was how to put theoretical principles into practice, a finding consistent with practitioners' greatest weakness.

Facilitators' ratings shifted the most for these aspects of their understanding:

- Giving students the opportunity to help develop success criteria;
- Sharing learning intentions with students;
- Using information from students and their work to better understand the effectiveness of teaching; and
- Providing success criteria against which students can judge the quality of their work.
- The first two and fourth of these were also the practices for which practitioner ratings shifted the most.

Their ratings shifted the least for these aspects of their understanding:

- Providing students with opportunities to engage with a wide range of rich texts;
- Planning a wide variety of learning experiences that draw on students' interests and social and cultural identities;
- Linking new teaching with students' prior experience and knowledge; and
- Teaching in a deliberate, purposeful, and specific way.

These four practices were also the practices for which practitioners' ratings shifted the least.

These findings show the relationship between facilitator expertise and teacher learning, highlight the importance of facilitators having the skills and knowledge needed for their role in schools, and validate the project directors' decision to prioritise facilitator learning.

Less than half the facilitators rated the LPDP as very effective in building their facilitation skills, and practitioners gave relatively low ratings to the facilitation and organisation skills of their facilitators. The skills for which facilitators' ratings shifted the most were: holding learning conversations, supporting first and second order change, rather than having a 'do it for them' approach; and contacting schools prior to visits to clarify the focus of the visit.

These shifts reflect the emphasis placed on developing these skills in national and regional meetings initiated by the project directors in response to project learning from the Auckland research findings.

The main challenges identified by facilitators were: lacking a clear sense of direction, the changing nature of the project, the high workload, the amount of new learning required without adequate time to reflect and practice,

making second order change, technological challenges, particularly in relation to aSTTle, and the relatively high levels of stress resulting from the combination of these challenges. These challenges help to explain practitioners' concerns that their facilitators did not provide them with a clear enough sense of direction, kept on changing the focus of the professional development, were unorganised, and lacked facilitation skills.

The findings discussed in this chapter highlight some areas for potential improvement in supporting facilitator learning in the LPDP or future professional development projects. These include:

- Providing facilitators with adequate time to learn about, reflect, and give feedback on, new project directions, documentation, and practices along with time to practice any new approaches these entail; and
- Providing facilitators with the documentation needed to carry out their role in advance of when it is needed (though there may be some unavoidable tension with the inquiry-based model used in the LPDP and its openness to improving practice during the professional development work).

9. Conclusions

In this chapter we draw together the main findings of the evaluation and discuss their implications for the LPDP, followed by some recommendations. The extensive range of data for the evaluation allows us to “knit together” a picture of the strengths of and challenges for the LPDP.

Student achievement

The LPDP (and this evaluation) broke new ground by focusing on shifts in student achievement resulting from professional development. Even accounting for the nature of the data and our conservative treatment of it, there are clear indications of gains in student achievement.

Overall, the gains in reading and writing achievement by students from schools in the LPDP, after taking into account expected growth and maturation, were greater than those that could be expected without the intervention. The mean shift in achievement over the 24 month period between pre- and post-intervention testing for students in schools with a reading focus was 0.53 of a stanine, or an effect size with a 95 percent confidence interval of 0.26–0.30.

The mean shift in achievement over the same time period for students in schools with a writing focus was 129.8 points, 29.8 points more than expected, and equivalent to an effect size of 1.17, with a 95% confidence interval of 1.09–1.25³⁵. With respect to curriculum sub-levels, 87 percent of students who participated in the LPDP for a 24 month period made progress greater than expected³⁶, with half shifting three or more curriculum sub-levels. Accounting for maturation, we get an effect size between 0.74–0.87, assuming a mean increase of 40 points over 24 months, and 0.20–0.31, assuming a mean increase of 100 points over 24 months.

Although the LPDP was effective in lifting student achievement on average, not all students made positive shifts, and some students made significantly greater shifts than others.

These differences provide some indication of what is possible and raise the question about what we can realistically expect a professional development intervention such as the LPDP to achieve. For instance, would it be realistic to expect an intervention focusing on lifting student achievement school-wide, such as the LPDP, to also “close the gaps” between high and low achieving students, between Māori and Pacific students, and their New Zealand European counterparts, or between girls and boys? Or would such goals require different types of intervention targeting more directly the needs of particular groups of schools or students? It seems there is some tension between the goal of lifting student achievement per se and the goal of “closing the gaps”.

Although some of the greatest gains were made by initially low achieving students, the group that was a focus of the project, one-third of students from reading schools who began in stanine one, remained in stanine one.

³⁵ The standard deviation in the sample was 109 at Time 1, slightly greater than 100, so the effect size is smaller than 1.298.

³⁶ If asTTle scores show students are improving by one curriculum level in a two year period they are learning more quickly than expected. (asTTle Volume 4 Manual 1.1, Chapter 3, updated August 2005).

However, students beginning in stanine one who initially scored at or above the “critical score”³⁷ level generally made shifts in their achievement. It is not surprising that a professional development initiative focusing on lifting school-wide achievement in comprehension had less impact on those who began as non-readers. These students needed more individualised and specialised teaching and resources.

In the wider policy context there is interest in the possibilities for reducing the differences in the achievement of Māori and Pacific students and their New Zealand European counterparts. The LPDP achieved its main goal of lifting school-wide achievement in literacy overall and also went some way towards achieving this wider policy goal. There were, for example, no significant differences between the achievement of Māori and New Zealand European students in reading schools (although differences were approaching significance), or between Pacific students and New Zealand European students in writing schools.

However the achievement of Pacific students in reading schools and Māori students in writing schools remained significantly lower than their New Zealand European counterparts.

When considering those in the group with initially low reading achievement both Māori and Pacific groups achieved significantly lower than their New Zealand European counterparts. Again, these findings suggest that if the primary goal is to reduce differences in achievement by ethnicity different types of intervention may be needed.

Likewise, although reducing differences in achievement by decile was not one of the main aims of the LPDP, student achievement data shows no significant difference by decile in reading schools. However students in low decile (decile 1 or 2) writing schools had significantly lower shifts and final scores by the end of their participation in the LPDP than their high decile (decile 9 or 10) schools counterparts. Again this shows that an intervention with a focus on lifting student achievement in general may only go some way towards also reducing differences by decile.

Practitioner learning

Few large-scale professional development initiatives attempt to directly measure growth of staff knowledge, and several useful tools have been developed within the inquiry-based LPDP to examine staff learning, including classroom observations and a scenario tool. The scenario assessment required principals, literacy leaders, and teachers to individually read a scenario of either a reading or a writing lesson that illustrated a range of ineffective teacher practices and rate the scenario teacher’s effectiveness in five teaching areas that were the focus of the LPDP intervention. These practices were:

- Use of learning intentions;
- Links made to students’ prior knowledge;
- Response to students’ ideas, and feedback;
- Opportunities for students to think about quality reading comprehension or writing; and
- Catering for diverse student needs.

³⁷ Elley (2000, p23) defines those scoring below the “critical” level as non-readers.

At the start of their participation in the LPDP the percentage of reading school staff who correctly recognised ineffective practices in the LPDP scenarios ranged from 27 percent (links with prior knowledge) to 52 percent (catering for diverse needs); the percentage of writing school staff ranged from 34 percent (links with prior knowledge) to 51 percent (opportunities to think about quality writing).

By the end of the professional development recognition of ineffective practice was much improved with four of the five items in the 72 to 81 percent range for reading schools, and all five items in the 66 to 79 percent range for writing schools.

The practice most frequently recognised as ineffective by the end of their professional development was the use of learning intentions (81 percent for reading and 79 percent for writing schools). This was also the practice with the greatest increase in staff recognition as ineffective (47 percentage points for reading schools and 41 percentage points for writing schools).

The practice least frequently recognised as ineffective by the end of the professional development was making links to students' prior knowledge. However, a much lower proportion of staff from reading (44 percent) than writing schools (66 percent) had this understanding by the end of their LPDP participation. For reading schools this was the practice with the least increase in staff recognition as ineffective. These findings may help explain why the multilevel modelling showed the differences in performance of Māori and Pacific students and their New Zealand European counterparts were greater in reading than writing schools, particularly those who started with low levels of achievement. This suggests that greater emphasis could be placed, particularly in the area of reading comprehension, on supporting literacy leaders and teachers to draw on the cultural and linguistic resources Māori and Pacific students bring with them to school.

The shifts in classroom practice most and least frequently reported were consistent with shifts in understanding shown in the scenario ratings. The practices which literacy leaders and teachers most frequently reported using “*most of the time*” at the time of the survey were:

- teaching in a deliberate, purposeful, and specific way;
- sharing learning intentions with students;
- linking new teaching with students' prior experiences and knowledge; and
- planning specific learning objectives for different groups to ensure the needs of all students are met.

The practices which literacy leaders and teachers reported using *least frequently* at the time of the survey were:

- giving students some choice about what they learn and how they go about it;
- giving students opportunities to help develop success criteria;
- talking with students individually about their understanding of their learning and any difficulties they may be having; and
- providing students with opportunities to reflect on and talk about their knowledge and strategies.

On average, literacy leaders and teachers reported using these practices at the time of the survey only “some of the time”.

Literacy leaders and teachers ratings *shifted the most* for these aspects of their practice:

- sharing learning intentions with students; and
- providing success criteria against which students could judge the quality of their work.

Their ratings *shifted least* for these aspects of their practice:

- planning a wide variety of learning experiences that drew on students' interests and cultural identities;
- linking new teaching with students' prior experience and knowledge; and
- providing opportunities for students to engage with a wide range of rich texts.

McNaughton (2002) argues that effective teaching for children from diverse cultural and language backgrounds includes: raising their awareness of the goals and rules of classroom activities and how to perform them through explicit instruction and apprenticeship—situated practice—immersion activities; and drawing on the cultural and linguistic resources that students bring with them to school—modifying or supplementing classroom activities so that they better match those of the community. To do this, McNaughton argues,

Teachers need to know what children currently know, both in the forms embedded in familiar activities outside of school and in those recognised for conventional literacy. Then they need to show to the children the relevance of that knowledge, incorporating it into versatile activities of text reading and writing. (93)

The findings of this evaluation suggest the LPDP has been very successful in achieving the first of McNaughton's teaching recommendations as shown by the large increase in practitioner understanding and use of learning intentions and success criteria, but that there is still some way to go in achieving the second recommendation. In their Milestone Report, July 2006, to the Ministry of Education (English et al, 2006b) the project directors express the intention to address this challenge by using school-by-school and project data to identify the teachers who have been most successful in lifting student achievement, particularly for Māori and Pacific students, in order to examine what it is exactly these teachers do. The findings from such an exploration would be useful, not only for informing the future direction of the LPDP, but also for informing other literacy initiatives.

One of the main challenges teachers faced was using student data to work out what to teach next, knowledge that is derived from skills and understanding of literacy theory and practice. This study suggests that teachers may need more concentrated periods of time to develop their content knowledge if they are to have the in-depth knowledge required to develop or choose teaching actions that target and address student learning progressions effectively.

Teachers, on average reported understanding "quite well" the theoretical principles underpinning effective literacy teaching and learning, how to put these principles into practice, student progressions in reading or writing; and what effective literacy practice looks like.

However, little more than half of teachers considered understanding the theoretical principles underpinning effective literacy teaching and learning to be very important. Responses from case study schools suggest that teachers did not always view what they saw as the 'theoretical' component of the LPDP to be relevant especially when this was associated with professional readings they felt required to read by facilitators. Teachers may see the term "theory" as oppositional to "practice", if they have not been convinced that professionals need to know the reasons behind their decisions, and if readings have not been contextualised in ways that relate to their teaching practice.

Given the findings of this evaluation and of other research findings (Timperley et al, in press) showing a relationship between content and pedagogical content knowledge and student achievement, professional developers in general need to find more contextualised ways of helping teachers build their content knowledge, so that it is not dismissed as "theory". As Joyce and Showers (2002) show, inadequate pedagogical content

knowledge also poses a potential risk to sustainability because, without theory, teachers are unable to use new skills in flexible ways.

Most literacy leaders but only half of the teachers rated the LPDP as “very effective” in convincing them that student achievement could be enhanced. This is consistent with the finding that most literacy leaders but just over half of the teachers identified lifting student achievement as one of the goals of the LPDP. This suggests that the LPDP may need to place greater emphasis on addressing practitioners’ beliefs about their capacity to make a difference for all students, especially given the research findings demonstrating the relationship between teacher expectations and student achievement (McNaughton, 2002; Bishop & Berryman, 2006).

Literacy leaders also thought the LPDP had more impact on their students’ engagement and learning than did teachers. These differences in perception may reflect literacy leaders’ greater awareness of the main goals of the LPDP, and greater belief in their capacity to lift student achievement. They may also reflect actual differences in the learning of students which (if literacy leaders’ perceptions are correct) would result from the greater learning and higher expectations that literacy leaders rated themselves as having when compared with teachers. As the LML data does not identify the role of respondents (either literacy leader or teacher), it is not possible to confirm if these hypotheses are valid.

Impact of experiences during the LPDP on practitioner learning

The four experiences most frequently identified by literacy leaders and teachers as having a “strong positive impact” on their learning were:

- analysing and discussing examples of student work;
- analysing and discussing student achievement data;
- using information from students and their work to better understand the effectiveness of teaching; and
- classroom observations by facilitators.

Literacy leaders rated the impact of the professional development higher than did teachers. They also had greater awareness of the main goals of the LPDP. Findings from the case study schools suggest that overall literacy leaders may have been more invested in the project and gained more from it due to their leadership responsibilities and their greater involvement with the school facilitator. There appeared to be greater variability in the involvement of teachers, especially in the larger case study schools where opportunities for teacher engagement and learning were more dependent on the knowledge, practice, and leadership skills of their literacy leaders, which varied from school to school. We can not comment on whether these perceived differences translated into actual differences in the learning of literacy leaders as compared with teachers as the LML data on teacher learning does not identify the status of respondents, that is, literacy leader or teacher.

Association between staff knowledge and practices at the time of the survey and student achievement

Some of the effective practices practitioners reported using at the time of the survey were associated with positive shifts in student achievement.

Those associated with high shift reading schools were:

- Teachers who rated their ability at the time of the survey to use tools such as asTTle and STAR as “strong”;

- Teachers and literacy leaders who rated their ability at the time of the survey to interpret student data in relation to national norms as “strong”; and
- Teachers who reported understanding very well at the time of the survey the theoretical principles underpinning effective literacy teaching and learning.

Those associated with high shift writing schools were:

- Teachers and literacy leaders who rated their ability at the time of the survey to interpret student data in relation to national norms as “strong”.

There were two effective practices practitioners reported using at the *start* of the professional development which were associated with positive shifts in student achievement. From reading schools teachers who reported that prior to the LPDP they had, at least on occasion, given students the opportunity to help develop success criteria were more likely to come from high shift schools, as were staff from writing schools who, at the start of the LPDP correctly identified the scenario teacher as being ineffective at making links to students’ prior knowledge.

Learning in the literacy leader role

Literacy leaders reported growth in their pedagogical content knowledge, however the findings of this evaluation suggest that many did not develop the depth of knowledge needed to provide teachers with specific feedback after classroom observations, model effective literacy practice or support teachers to make changes to their classroom practice. The level of expertise required to fulfil these roles cannot be overemphasised; this knowledge goes well beyond that required of a classroom teacher and it would be unrealistic to expect that this knowledge could be built up during facilitator visits, however frequent.

Literacy leaders reported positive shifts in their leadership and facilitation skills but only one-quarter rated the LPDP as “very effective” overall in building these skills.

Most literacy leaders felt “very well supported” by their facilitator. The support they most frequently rated as having a “strong positive impact” was carrying out classroom observations alongside the facilitator, observing the facilitator giving feedback, and observing the facilitator leading learning conversations.

In contrast, only 51 percent of literacy leaders felt “very well supported” by their principal. The forms of further support they most frequently identified as needing was more release time (and release time on a regular basis) and more principal interest in and understanding of the LPDP and the literacy leader role.

During the LPDP over half of the literacy leaders spent more time than they received in their literacy leader role, and survey and case study responses suggest that many found the size of the job challenging. A number of schools chose to fund the literacy leader role as a full-time position and many more increased the number of literacy leaders in their school during or after the professional development indicating that the job was perceived to be too big for one person who also had classroom teaching responsibilities.

Findings from this evaluation suggest that further release time was most needed for literacy leaders to build their own and teachers’ pedagogical content knowledge within their professional learning communities.

Facilitator learning

Most facilitators rated the LPDP as very effective in building their ability to interpret and use student achievement data, literacy content knowledge, and understanding the transfer of pedagogical content knowledge to practice and there were positive shifts in their ratings of their capability in all of these areas. The area of greatest understanding in relation to pedagogical content knowledge was what effective literacy practice looks like. The area of least understanding was how to put theoretical principles into practice, a finding consistent with practitioners' greatest weakness.

Facilitators' ratings shifted the most for these aspects of their understanding:

- Giving students the opportunity to help develop success criteria;
- Sharing learning intentions with students;
- Using information from students and their work to better understand the effectiveness of teaching; and
- Providing success criteria against which students can judge the quality of their work.

The first two and the fourth of these were also the practices for which practitioner ratings shifted the most.

Facilitators' ratings shifted the least for these aspects of their understanding:

- Providing students with opportunities to engage with a wide range of rich texts;
- Planning a wide variety of learning experiences that draw on students' interests and social and cultural identities;
- Linking new teaching with students' prior experience and knowledge; and
- Teaching in a deliberate, purposeful, and specific way.

These four practices were also the practices for which practitioners' ratings shifted the least.

These findings show the close relationship between facilitator expertise and teacher learning, and highlight the importance of facilitators having the skills and knowledge needed for their role in schools. The ongoing inquiry into facilitator practice of the Leadership and Effectiveness Team ensures that facilitators can be provided with the necessary professional development and support. Examples include the decision documented in the LPDP Milestone Report, July 2006 (English et al, 2006) to source material to inform facilitators (as well as school staff) about Pacific students and literacy teaching and learning, and to support a small number of facilitators to inquire into the use of the home literacy background to improve Pacific student achievement.

Less than half the facilitators rated the LPDP as very effective in building their facilitation skills, and practitioners gave relatively low ratings to the facilitation and organisation skills of their facilitators. These findings most likely reflect the fact that it was not until about six months into 2004 that inquiry into facilitator practice highlighted their professional development needs in facilitation skills. The skills for which facilitators' ratings shifted the most were: holding learning conversations, supporting first and second order change, rather than having a 'do it for them' approach; and contacting schools prior to visits to clarify the focus of the visit.

These shifts reflect the emphasis placed on developing these skills in national and regional meetings initiated by the project directors in response to project learning from the embedded research findings.

The main challenges identified by facilitators were: lacking a clear sense of direction, the changing nature of the project, the high workload, the amount of new learning required without adequate time to reflect and practice,

making second order change, technological challenges, particularly in relation to asTTle, and the relatively high levels of stress resulting from the combination of these challenges. These challenges help to explain practitioners' concerns that their facilitators did not provide them with a clear enough sense of direction, kept on changing the focus of the professional development, were unorganised, and lacked facilitation skills.

The multilevel modelling of the February 2004 cohort data (Dingle & McDowall, 2006) showed a significant facilitator effect accounting for 17 percent of the variation in student achievement shifts in reading schools and 33 percent of the variation in student achievement shifts in writing schools. In the multilevel modelling carried out on the combined data from the February and July cohorts, the facilitator effect was significant in the reading schools accounting for an extra five percent of variation in students' achievement shifts, and there was virtually no facilitator effect in the writing schools.

A likely reason for a reduced facilitator effect is the increased experience of facilitators as well as the considerable investment in facilitator learning and support made by the LPDP. A summary of this support is described by the project directors in their Milestone Report, July 2006 to the Ministry of Education (English et al, 2006b, p.6).

In this milestone report the project leaders highlight the need to further explore the effectiveness of their leadership behaviours in supporting facilitators to make second order changes in their practice. The findings of this evaluation support this intention.

Professional learning communities

Approximately one-quarter of literacy leaders and teachers considered their professional learning communities were "very well established". At the other end of the scale, approximately one-quarter of literacy leaders and teachers considered they were "just beginning" to operate as a professional learning community.

By the end of the professional development most school leaders saw as part of their role:

- Challenging practices at both individual and whole school level;
- Leading a collaborative analysis of the data to set goals for individual teachers based on identified areas of need;
- Arranging school meetings to discuss next learning steps based on classroom achievement information and teachers' literacy pedagogical content knowledge;
- Selecting readings and arranging discussions specifically related to teacher needs as part of the professional development focus; and
- Ensuring practitioners have regular classroom observations conducted for specified purposes.

Leaders reported large shifts in practice in all of these areas. Overall, the largest shifts reported by reading and writing school leaders was seeing as part of their role leading a collaborative analysis of the data to set goals for individual teachers based on identified areas of need. Overall, the writing school leaders appeared to be more actively involved in supporting and challenging practitioners and the reading school leaders appeared to be more actively involved in the promotion of professional readings.

There were also large shifts in teacher practices and there were associations between many of the effective practices staff reported engaging in by the end of the professional development and shifts in student achievement. In writing schools, those who tended to come from schools with higher shifts in student achievement were:

- Literacy leaders who rated their principal as showing “a lot” of commitment to the LPDP;
- Practitioners who agreed that they had a leader who challenged them to teach well;
- Practitioners who agreed they had a leader who helped all staff learn together;
- Leaders who saw as part of their role leading a collaborative analysis of achievement data to set goals for individual teachers based on identified areas of student need;
- Practitioners who reported discussing the achievement of their students with their literacy leader and/or principal at least twice a year;
- Practitioners who reported discussing with colleagues teaching strategies in relation to assessment information at least twice a year; and
- Leaders who reported having regular classroom observations for specified purposes.

In reading schools, those who tended or were more likely to come from schools with higher shifts in student achievement were:

- Leaders who saw as part of their role leading a collaborative analysis of achievement data to set goals for individual teachers based on identified areas of student need;
- Practitioners who agreed they had a leader who introduced professional readings that were useful for their teaching; and
- Practitioners who reported being observed by a literacy leader, principal, or colleague at least twice a year.

By the end of the professional development the three practices practitioners *least* frequently reported occurring were having a school leader follow up on their professional reading, being observed at least twice a year, and consistently receiving useful feedback after observations. The findings relating to these last two practices are consistent with the finding that literacy leaders reported little shift in their ability carry out observations and give specific feedback to teachers.

There are three explanations for the lack of useful feedback. The first relates to schools at which professional learning communities had not really developed and at which there remained a lack of trust and collaboration among staff.

The second explanation relates to inadequate time allocated for literacy leaders to share feedback with teachers. Findings from the case study schools suggest that it was not always easy to release the literacy leader and teacher for post-observation discussions and this was especially so for schools where availability of relievers was a problem, such as small rural schools. This meant that feedback was sometimes given in unsuitable circumstances, such as in the classroom while students were working independently, in rushed circumstances, or in teachers’ own time, such as after school.

The third explanation relates to the pedagogical content knowledge of literacy leaders. Providing feedback useful for teaching is dependent on having the requisite pedagogical content knowledge and, as discussed earlier, many literacy leaders did not feel they had this.

Almost all facilitators, literacy leaders, and teachers thought the LPDP had at least some positive impact on the professional learning communities in their schools. The two experiences most frequently identified by practitioners as having a “strong positive impact” on the development of their professional learning communities were: analysing and discussing examples of student work and analysing and discussing student achievement data. The experiences least frequently rated by practitioners as having a “strong positive impact” were discussing

evidence collated by the facilitator from the scenario responses, the questionnaire responses, and the classroom observations.

Sustaining change

Less than one quarter of literacy leaders and a little over one-third of teachers from the 2004 cohorts thought that changes made to school-wide practices during the LPDP had been sustained “very well” although most thought they had been sustained “quite well”. The main challenges to sustaining change faced by school staff included:

- Practitioners’ lack of the pedagogical content knowledge and inquiry skills needed to work out the changes to make to classroom practice in response to student achievement data;
- Literacy leaders’ lack of the pedagogical content knowledge needed to help teachers work out how to alter their practice in response to student achievement data and provide effective feedback following observations;
- Lack of commitment by some school leaders to sustain change through effective leadership of learning communities and the provision of time and opportunities for practitioners to continue building their skills and knowledge;
- Not enough distributed leadership or well enough established professional learning communities;
- Staff turnover, especially in small schools;
- Teacher resistance; and
- Lack of external support.

There is evidence to suggest that the capacity to sustain change increased with each successive cohort. This is most likely because of increasing project capacity to assist schools to build the structures, culture, knowledge and skills needed for sustained change.

Conditions associated with student achievement

School characteristics associated with student achievement

There were large significant school effects with schools alone accounting for almost 30 percent of the variance within the model for reading schools and 23 percent for writing schools. This means that one of the greatest indicators of student progress was the particular school students attended, regardless of the school background characteristics, such as decile or size.

These differences may be attributed to factors such as school leadership, school culture, the capability of literacy leaders, the strength of professional learning communities, and so forth.

Given the considerable financial investment in the LPDP by the Ministry of Education, it is important to identify the characteristics of schools associated with higher and lower shifts in student achievement to ensure that the schools selected to participate are those likely to benefit the most.

Professional learning community practices associated with achievement

We found that the schools with higher shifts in student achievement tended to be those which, according to practitioner responses, had fewer or weaker professional learning community practices to begin with. The

converse was also true. Schools with lower shifts in student achievement tended to be those which, according to practitioner responses, had more established professional learning community practices to begin with.

For instance:

- Reading school practitioners who *at the start* reported they either never assessed their students or only did so once a year (when compared with those who reported assessing their students more frequently) tended to come from *high shift* schools;
- Reading school practitioners who reported that *prior* to the LPDP they never discussed literacy related professional readings tended to come from *high shift* schools;
- Writing school practitioners who *at the start* agreed they had a leader who helped them to work out strategies to improve their teaching were significantly more likely to come from *low shift* schools; and
- Reading school leaders who at the start of the LPDP reported providing opportunities for teachers to engage in professional reading for specific purposes were significantly more likely to come from *low shift* schools.

The most likely explanation for the greater impact of the LPDP on building school capacity to lift student achievement in schools where there were fewer practices indicative of strong professional learning communities to begin with is that there was greater room for improvement in these schools.

Data literacy, pedagogical content knowledge and transfer to practice

When both trends and statistically significant relationships are taken into account, the associations between practitioners' reported data literacy, pedagogical content knowledge, and transfer to practice *at the start of the LPDP* and shifts in student achievement are less clear. The picture becomes clearer when only the statistically significant associations are considered, and it provides a similar message to the one described above. Literacy leaders and teachers from low shift schools tended to rate their knowledge, skills, and practice at the start of the LPDP more highly than their counterparts from schools with higher shifts in student achievement.

For instance:

- Reading school teachers who indicated that prior to the LPDP they, at least on occasion, kept up to date with current research and innovations in literacy teaching before the LPDP (compared with those who “hardly ever” did).
- Writing school teachers who indicated that prior to the LPDP they read literacy related professional readings for interest in their own time, at least on occasion, (compared with those who reported “not at all”);
- Reading school practitioners who indicated that prior to the LPDP they had at least some strength in using student data to work out what to teach next (compared with those who selected “not at all strong”);
- Reading school practitioners who indicated that prior to the LPDP they had at least some strength in using student data to work out what to teach next (compared with those who selected “not at all strong”) at the start of the professional development;
- Reading school practitioners who indicated that prior to the LPDP they talked with students individually about their understanding of their learning at least on occasion (compared with those who “hardly ever” did); and
- Writing school teachers who indicated that prior to the LPDP they, at least on occasion, gave students some choice about what they learnt and how they went about it (compared with those who “hardly ever” did

were all significantly more likely to come from low shift schools.

Association between class level and student achievement

There was a tendency in the schools included in this evaluation for *older* students to make greater shifts than younger students. For instance, in writing schools, students who started in Year 7 had significantly higher shifts and final scores than those who started in Years 4 and 5. In reading schools, Year 5 and 6 students achieved significantly higher shifts and final scores than Year 3 students. As there has traditionally been more emphasis placed on literacy in the lower levels in New Zealand schools, it is possible that teachers at higher levels of the school, and particularly in Intermediate schools where the literary focus changes, had greater room for improvement in their literacy content knowledge and practice, and so benefited the most.

Association between school size and student achievement

Such an interpretation would also help explain the finding that in the group focusing on reading comprehension, small, small-medium, and medium-large schools had significantly lower shifts and final scores compared with the largest schools (500+) which were mainly Intermediate schools.

Implications

The selection criteria used by the project for the 2004 and February 2005 cohorts meant that schools with a wide range of starting points in terms of professional learning communities, skills, and knowledge were included in the LPDP.

The findings discussed in the sections above have implications both for the schools selected to participate in professional development and for the flexibility of professional development providers to adapt to the differing stages schools are at.

If professional development initiatives such as the LPDP have less impact in schools already exhibiting practices indicative of strong professional learning communities and in schools where literacy leaders and teachers already have at least some data literacy, content, and pedagogical content knowledge, and at least some effective practices, more efficient use of resources could be made by selecting schools with the greatest need. This approach was adopted by the LPDP for the 2006 cohorts.

Another approach would be to offer different experiences or different lengths of professional development time according to need. For such an approach facilitators would need to be well equipped with strategies for both diagnosing and responding to schools differing needs.

LPDP experiences associated with student achievement

Opportunities for input into the content and process of learning

The professional development experience most strongly associated with higher shifts in student achievement was the opportunities practitioners had to have some say in what and how they learned during the professional development. The multilevel modelling showed that teachers from both reading and writing schools who indicated they had at least a little input into decisions about their professional development were more likely to come from schools with higher shifts.

However, nearly one-third of teachers considered that they had either “not much” say in what and how they would learn in the LPDP and 62 percent considered they had “not much at all”. In an open-ended question on the key strengths of LPDP, nearly one-third of facilitators identified tailoring professional development to the individual needs of schools, but only seven percent of practitioners identified this as one of the key strengths. Given the association with higher shifts in student achievement, these findings suggest the need for teachers to be given more opportunities to contribute to decisions about their professional development.

The discussions based on evidence from the scenario ratings, questionnaire responses, and observations, collected by the facilitator needs were designed with this purpose in mind and there is evidence from the writing schools to suggest that when these experiences were positive, there were associations with higher shifts in student achievement. The multilevel modelling showed that writing school teachers who rated the impact of facilitator-led discussions of the scenario ratings, questionnaire responses, and observations as having a positive impact on their learning were more likely to come from schools with higher shifts in student achievement. There was no such association for reading schools. A possible reason for this is that teachers were not so knowledgeable about writing to begin with. Another possible reason is that using the writing exemplars and the experience of assessing and discussing student work samples provide greater opportunities for building content knowledge than discussing STAR results. This may have placed practitioners in writing schools who had positive experiences early in the project at an initial advantage.

Unfortunately however, discussing findings from the scenario ratings, questionnaire responses, and observations was, overall, one of the experiences least frequently rated as having a “strong positive impact” on practitioner learning and on supporting the development of professional learning communities. This was because many were unaware of the purposes for these data being collected and had little input into the data analysis. At the time of the survey some teachers from the 2004 cohorts “did not know” the extent to which staff responses to the LML questionnaire (32 percent), scenario ratings (22 percent), classroom observations (12 percent), and even student achievement data (10 percent) were used to tailor the professional development to the particular needs of their school.

McNaughton (2006) identifies as one of the main tensions in schooling improvement the need to both adhere to a set of instructional procedures in order to guarantee fidelity and the need to develop procedures from context specific problem solving, in order to support local autonomy and efficacy. Particularly with the first cohort, facilitators’ focus on the procedures involved in the initial needs analysis tended to be at the expense of context specific problem solving. They tended to rush to begin data collection, rather than taking the time to collectively identify what was already known (or not known) about student learning in each school and to explore staff views about the perceived strengths and weaknesses of their current approaches to teaching literacy. In the first cohort, many facilitators analysed the needs analysis data on their *own* in order to quickly move on to the next phase of the LPDP, instead of allowing time for teachers to examine the implications of the data themselves.

This had an initial impact on teachers’ motivation to engage with the professional development and the development of habits of inquiry, since the needs analysis appeared not to include teacher “voice” about what school needs were, and reasons for their views. As Earl and Katz (2006) emphasise, it is critical for the whole staff to be aware of and engaged in the planning process:

Change is hard work that requires motivation and capacity. If the staff does not believe in the changes and are not willing to explore and use new practices, nothing really happens. They need to be part of the thinking and planning that leads to adopting innovations and new directions. (p. 35)

By the end of term 1, 2004, the Leadership and effectiveness Team (LET) were aware (from facilitator observations and interviews, and analysis of facilitators' case studies) that facilitators were not involving schools in making sense of their data. Findings from the embedded research reported in the July 2004 research report led to the realisation that facilitators did not fully understand or 'own' project theories and practices (such as those related to the needs analysis and an evidence-based way of working), that is they had not engaged in second order change. The project response was to explore the practice of examining reasons, personal theories, and principled knowledge for action with the LET in term 3 and 4, 2004 and with facilitators at national seminar and regional meetings from February 2005.

The project leaders acknowledge that they did not initially understand or provide the level of support facilitators needed because their own understanding of second order change was still developing (Bareta, English, and O'Connell, 2006). This project level learning contributed to the project's evolving theory of improvement.

The number of schools in the 2005 cohort is too small to use to evaluate whether the project's developing theory of improvement and subsequent actions described above have had the desired impact on facilitators' practice, and on teachers' perceptions of their involvement and subsequent changes to practice. This is a question worth investigating further in future research with the 2006 cohort schools.

Project coherence

One explanation for the success of the LPDP in lifting student achievement is the "coherence" (Newmann et. al., 2001) promoted both *within* and *across* the communities of practice at all levels of the project.

Coherence within communities of practice

The LPDP promoted coherence *within* communities of practice by supporting the development of effectively-led professional learning communities in which there were shared expectations and goals, reflective conversations about practice and its impact, deprivatisation of practice, and joint planning. The structural features of the LPDP set up to support the development of professional learning communities include:

- the collective use of evidence to inquire into the effectiveness of practice to support learning;
- the provision of evidence-and research-based professional development to meet learning needs; and
- systems for shared observation, accountability, and collegial consultation.

By the time of the survey there was evidence of coherence within the facilitators' regional and national communities of practice. This was demonstrated in the shared understanding of the main goals of the LPDP and in the consistency of the principles and practices espoused by the facilitators in the interviews and the survey. Facilitators valued the ongoing professional development provided through the regional team professional learning communities.

There was also evidence of coherence within schools' communities of practice although the degree of coherence differed from school to school depending on the strength of their professional learning communities. Schools particularly successful at lifting student achievement tended to be those in which staff perceived their professional learning communities to be very well established and led, and in which there were, therefore, higher levels of

programme coherence. (This is supported by the findings of Newmann et al. (2001) who demonstrate the importance of school-based “coherence” for student achievement).

Staff attributed a number of experiences during the LPDP to supporting their capacity to build professional learning communities. The features most frequently identified as having a strong positive impact were: analysing and discussing samples of student work; analysing and discussing student achievement data; classroom observations and feedback; discussing the implications of data for classroom practice; and teachers being supported to inquire into the effectiveness of their classroom practice by using information from students and their work to better understand the effectiveness of their teaching.

Coherence across communities of practice

One of the main challenges for the project has been developing coherence *across* communities of practice at the different levels of the project. The project developed a number of structures and approaches to support this. These included making practice explicit, having some members who worked across adjoining communities of practice, and having artefacts common across communities of practice.

Facilitators saw attempts to build this coherence across all levels of the project as being one of the project’s main strengths.

The findings from this evaluation suggest that the degree of coherence between the Leadership and Effectiveness Team (LET)³⁸ and the various communities of practice (facilitators, literacy leaders, and teachers) decreased down the tiers of the project. That is, coherence was greatest between the LET team and facilitators and least between the LET team and teachers. There is evidence from the LML milestone reports and from survey and case study responses from this evaluation that, the messages the LET team sent sometimes changed in meaning or emphasis by the time they had been passed down through the different levels of the project to teachers. This is illustrated in the differing degrees of awareness of the main goals of the LPDP at different levels of the project. For example, improving student learning and achievement was identified as one of the main goals of the LPDP by 97 percent of facilitators, 63 percent of literacy leaders, and 55 percent of teachers. Improving teacher content knowledge was identified by 83 percent of facilitators, 33 percent of literacy leaders, and 19 percent of teachers. Improving the transfer of the understanding of literacy pedagogy to practice was identified by 95 percent of facilitators, 82 percent of literacy leaders, and 69 percent of teachers. Building professional learning communities was identified by 93 percent of facilitators, 28 percent of literacy leaders, and only 4 percent of teachers.

Perceived strengths of the LPDP

Generally facilitators, literacy leaders, and teachers were extremely positive about the LPDP when compared with other professional development they had experienced. Nearly all facilitators, literacy leaders, and teachers indicated they would recommend the LPDP to others working in their role.

The strengths of the LPDP, when compared with other professional development experiences most frequently identified by practitioners were (in order of frequency):

- the professional or personal qualities of the facilitator;

³⁸ See Page 2 for a description of LET.

- the fact the professional development was school-wide and involved building professional learning communities;
- the length of the professional development;
- the intensity of the professional development, that is, the ongoing nature of the support and guidance provided by facilitators;
- the focus on interpreting and using student achievement data to lift student achievement;
- the use of recent research to build teachers' pedagogical content knowledge;
- the tailoring to individual school needs; and
- the focus on improved teacher practice.

The strengths of the LPDP, when compared with other professional development experiences most frequently identified by facilitators were exactly the same and in the same order of frequency with one exception. The strength they most frequently identified was the LPDP focus on building habits and skills of inquiry at all levels of the project and they did not identify the professional or personal qualities of facilitators as a strength.

The strengths of the LPDP identified by facilitators, literacy leaders, and teachers are consistent with many of the features of professional development Timperley et al. (in press) found as having outcomes of educational significance for students. These include: the utilization of expertise external to the group (facilitator support); sufficient time focused on promoting opportunities to learn (the length and intensity of the PD); inquiry skills; and participation in professional learning communities.

Recommendations

We recommend that:

- The project continue to inquire into the individualised and specialised teaching and resources required to ensure that those with the lowest literacy achievement can make progress comparable to their peers;
- The Ministry of Education support further inquiry into the specialised teaching and resources required over and above literacy professional development initiatives targeting school-wide shifts in student achievement to ensure that differences between the lowest and highest achieving students can be reduced. The findings of this study suggest that this may be beyond the scope of initiatives focusing on school-wide shifts, such as the LPDP, as there is a tension between the goal of shifting student achievement per se and the goal of 'closing the gaps';
- The project continue to inquire into practitioners' capacity to draw on the cultural and linguistic resources Pacific students bring with them to school, that a particular emphasis of the inquiry be in the area of reading, and that this inquiry also be extended to include Māori students. We support the intention expressed in the LPDP Milestone Report, July 2006 (English et al, 2006b) to use school-by-school and project data to identify the teachers who have achieved strong results for Maori and Pacific students to explore further what it is that these expert teachers do;
- Schools likely to benefit most from the LPDP continue to be prioritised for inclusion, as modelled with the 2006 cohorts;
- The project inquire into the impact of building greater flexibility into the nature of the professional development and its delivery in response to school needs, such as its two year duration, the frequency of facilitator visits, and so forth;

- The project inquire into the effectiveness of the more extensive and responsive training period provided to the more recently inducted facilitators so that the approach used ensures facilitators have the necessary skills before working with large numbers of schools;
- Facilitators are provided with adequate time to learn about, reflect, and give feedback on, new project directions, documentation, and practices along with time to practice any new approaches these entail;
- Literacy leaders are provided with adequate support including recognition of the learning and time it takes to perform the role skilfully both during the professional development and once the facilitator support is no longer available. At the school level this might involve providing ongoing, regular release time to carry out this role or the provision of management units in recognition of this role. At the project level it might involve inquiry into building and strengthening professional learning communities for literacy leaders within clusters along similar lines as those developed for facilitators, including modelling, observation, and feedback from a more experienced leader;
- The project carry out further inquiry into ways in which the connections between facilitators and teachers, and between literacy leaders and teachers, could be further strengthened given the considerable differences in teachers' and literacy leaders' reported experiences of, and learning in the project; and
- The project carry out further inquiry into reasons why such a high proportion of teachers did not see the theories underpinning effective teaching and learning as very important by re-examining the ways in which facilitators support literacy leaders and teachers to engage with theory and its application to practice.

These recommendations are supported by findings in the research literature which show that for professional learning to have a positive impact on students: teachers' personal theories need to be engaged rather than bypassed; sufficient time needs to be focused on promoting opportunities to learn; learning resources need to include a range of theoretical tools and principles that integrate teaching, learning, and assessment; learning activities need to include multiple opportunities to learn through a range of activities; and the presentation of theoretical principles needs to be accompanied by activities that translate principles into practice (Timperley et al, in press).

References

- Assessment Tools for Teaching and Learning (asTTle) Version 4, Manual 1.1. (Updated August, 2005).* Wellington, NZ: University of Auckland/ Ministry of Education/Learning Media. At http://www.tki.org.nz/r/asttle/user-manual_e.php
- Bareta, L., English, C., O'Connell, P. (2006). *Leading sustainable change: Deliberate acts of facilitation.* Paper presented to the 21st World Congress on Reading, Budapest, Hungary.
- Bateson, M. C. (1994). *Peripheral visions: Learning along the way.* New York: Harper Collins.
- Bishop, R. & Berryman, M. (2006). *Culture speaks: Cultural relationships and classroom learning.* Huia: Wellington.
- Creswell, J. (1994). *Research design: Qualitative and quantitative approaches.* Thousand Oaks: Sage Publications Inc.
- Department of Education and Training. (2005). *Professional learning in effective schools: The seven principles of highly effective professional development.* Melbourne. Retrieved 4th February, 2006, from <http://www.sofweb.vic.edu.au/blueprint/fs5/default.asp>
- Dingle, R. & McDowall, S. (2005). *Evaluation of the Literacy Professional Development Project: Report on the analysis of the quantitative data on student achievement and teacher learning.* Wellington: Unpublished interim report to the Ministry of Education.
- Dingle, R., & McDowall, S. (2006). *Evaluation of the Literacy Professional Development Project. Report on the analysis of the quantitative data on student achievement and teacher learning. Milestone One.* Wellington: Unpublished interim report to the Ministry of Education.
- English, C., Bareta, L., & O'Connell, P. (2004a). *Milestone report, July 2004.* Unpublished report for the Ministry of Education.
- English, C., Bareta, L., & O'Connell, P. (2004b). *Milestone report, December 2004.* Unpublished report for the Ministry of Education.
- English, C., Bareta, L., & O'Connell, P. (2005a). *Milestone report, February 2005.* Unpublished report for the Ministry of Education.
- English, C., Bareta, L., & O'Connell, P. (2005b). *Milestone report, August 2005.* Unpublished report for the Ministry of Education.
- English, C., Bareta, L., & O'Connell, P. (2005c). *Milestone report, December 2005.* Unpublished report for the Ministry of Education.
- English, C., Bareta, L., & O'Connell, P. (2006a). *Milestone report, March 2006.* Unpublished report for the Ministry of Education.
- English, C., Bareta, L., & O'Connell, P. (2006b). *Milestone report, July 2006.* Unpublished report for the Ministry of Education.

- Earl, L. M., & Katz, S. (2006). *Leading schools in a data-rich world. Harnessing data for school improvement*. Thousand Oaks, California: Corwin Press.
- Earl, L., & Fullan, M. (2003). Using Data in Leadership for Learning. *Cambridge Journal of Education*, 33(3), 383–394.
- Elley, W. (2000). *STAR Supplementary tests of achievement in reading: Years 4–9*. Wellington: New Zealand Council for Educational Research.
- Elley, W. (2000). *Star Supplementary tests of achievement in reading: years 4–9*. Unpublished manuscript, Wellington, NZCER.
- Elley, W. (2003). *STAR Supplementary tests of achievement in reading: Year 3*. Wellington: New Zealand Council for Educational Research.
- Elley, W. (2003). *STAR Supplementary tests of achievement in reading: Year 3*. Unpublished manuscript, Wellington: NZCER.
- Fullan, M. (2001). *The new meaning of educational change*. New York: Teachers College Press.
- Goldstein, H. (1995). *Multilevel Statistical Models (2nd edition)*. London: Arnold.
- Guskey, T. R. (2002). Professional development and teacher change. *Teachers and Teaching: theory and practice*, 8(3/4), 38–391.
- Hakim, C. (1987). *Research design: Strategies and choices in the design of social science research*. London: Allen & Unwin.
- Hattie, J., Brown, G., Keegan, P., MacKay, A., Inrving, S., Patel, P., et al. (2005).
- Hattie, J., Brown, G., Keegan, P., MacKay, A., Irving, S., Patel, P., Sussex, K., McCall, S., Sutherland, T., Yu, J., Cutforth, S., Mooyman, D., Leeson, H., & Campbell, A. (2005).
- Hirsch, E. (2004). *Teacher working conditions are student learning conditions. A report to Governor Mike Easley on the 2004 North Carolina Teacher working Conditions Survey*. The South East Center for Teaching Quality.
- Joyce, B., & Showers, B. (2002). *Student achievement through staff development. 3rd Edition*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Kreider, H., & Bouffard, S. (2006). Questions and answers: a conversation with Thomas, R. Guskey. *The Evaluation Exchange*, 11(4 Winter).
- McNaughton, S. (2002). *Meeting of minds*. Wellington: Learning Media Ltd.
- McNaughton, S. (2006). *Becoming expert: Formative assessment in schooling improvement and the promotion of teacher learning*. Paper presented at the United States-New Zealand Education Policy Round Table. December 4–8.
- Ministry of Education. (2003). *Effective Literacy Practice in Years 1 to 4*. Wellington: Learning Media Limited,.
- Newmann, F., Smith, B., Allensworth, E., & Bryk, A. (2001). Instructional program coherence: What is it and why it should guide school improvement policy. *Educational Evaluation and Policy Analysis*, 23 (4), 297–321.

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- Patton, M. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, California: Sage Publications, Inc.
- Poulson, L., & Avramidis, E. (2003). Pathways and Possibilities in Professional Development: case studies of effective teachers of literacy. *British Educational Research Journal*, 29(4), 543–560.
- Smith, G., & Smith, J. (2005). Regression to the mean in average test scores. *Educational Assessment*, 10(4), 377–399.
- Southworth, G. (2000). How primary schools learn. *Research Papers in Education*, 15 (3), 275–291.
- Sparks, D., & Hirsh, S. (1997). *A new vision for staff development*. Alexandria, VA: ASCD.
- Timperley, H., Fung, I., Wilson, A., & Barrar, H. (2006). *Professional learning and development: A best evidence synthesis of impact on student outcomes*. Paper presented to the Annual Educational Research Association, San Francisco, California.
- Timperley, H., Wilson, A., Barrar, H., & Fung, I. (in press). *Teacher professional learning and development: Best evidence synthesis*. Wellington: Ministry of Education.
- Waters, J. T., Marzano, R. J., & McNulty, B. A. (2003). *Balanced leadership: What 30 years of research tells us about the effect of leadership on student achievement*. Aurora, CO: Mid-continent Research for Education and Learning.
- Wenger, E. (1998). “Communities of practice: Learning as a social. system. *The Systems Thinker*, 9 (5) 1–5.
- Yin, R. (1994). *Case study research: Design and methods (2nd ed.)*. Thousand Oaks, California: Sage Publications, Inc.