

This document is part of a set of materials for teachers and school leaders that summarises research articles and milestone reports from New Zealand's Literacy Professional Development Project (LPDP). The full set is available online at [www.literacyonline.tki.org.nz](http://www.literacyonline.tki.org.nz)

Online users can also access the hyperlinks indicated in blue in the text.

# Improving Learning for All: Learning from the Literacy Professional Development Project



## It's All about the Students: Helping Students Become Self-regulated Learners

### Wider Implications of the LPDP Learning

In recent years, two bodies of educational research have tended to converge: the research around formative assessment and that around self-regulated learning. Together, these bodies of research suggest that if students are to build the skills and capabilities of self-regulated learners, teachers need to build shared understandings of what constitutes quality work. They can do this by being very explicit about the learning aims and by designing learning experiences and providing feedback that align with those aims.

The [Literacy Professional Development Project \(LPDP\)](#) research suggests that while teachers have embraced the notion of formative assessment, especially in terms of explicitly stating their learning aims and success criteria, they may not be sharing enough of the knowledge their students need in order to be able to evaluate their own learning. In fact, students' confidence that they have this knowledge seems to decrease as they progress through their schooling. This is a real concern, given the vision offered in *The New Zealand Curriculum* ([Ministry of Education, 2007](#)) of ensuring that all students develop the competencies of a lifelong learner. The research indicates that teachers need a high level of “[pedagogical content knowledge](#)” if they are to let their students in on the secrets of successful learning. For teachers of literacy, this includes developing their knowledge of what makes quality reading and writing. Hypothetical lesson scenarios seem to be a valuable tool for exploring teacher knowledge and how this might relate to student progress.

### Key Questions

As you read this paper, you may like to consider the following questions with regard to your own professional learning context:

- What do students need to know and do if they are to become independent, self-regulated learners?
- What do teachers need to know and do to help their students become independent, self-regulated learners?
- How can teachers find out what they need to know and do to help their students become independent, self-regulated learners?

## Main Sources for this Research Summary

- Building Professional Knowledge to Teach Writing (Parr, 2009)
- Examining the Role of Teacher Pedagogical Content Knowledge in Literacy (Parr & Timperley, 2006)
- Sharing Guild Knowledge for Student Self-assessment for Learning (Parr, & Timperley, 2009)
- What Is This Lesson About? Instructional Processes and Student Understandings in Writing Classrooms (Timperley & Parr, 2009)

## Background

The LPDP's strategic outcome is to improve student literacy achievement. It does this by providing opportunities for all participants to:

- develop the skills of self-regulatory inquiry;
- build relevant content knowledge, pedagogical knowledge, and [pedagogical content knowledge](#).<sup>1</sup>

This outcome is underpinned by some important beliefs that align to both the Literacy Strategy and *The New Zealand Curriculum*. One is that literacy knowledge and skills are essential if students are to be successful in their schooling and as citizens of New Zealand in the twenty-first century. The other is that such success requires students to develop the competencies of a lifelong learner. Two of these competencies, thinking and managing self, are drawn together in the concept of self-regulation. Self-regulation refers to the ability of learners to use metacognitive strategies to manage their own learning. Part of managing this learning involves self-assessment.<sup>2</sup>

This research summary focuses on students and what needs to happen for them to become self-regulated learners. In particular, the summary looks at what the LPDP researchers have discovered about the knowledge students need in order to assess their learning and what teachers can do to ensure that their students have this knowledge.

## What Do Research and the Literature Tell Us?

There is a considerable body of literature about formative assessment and its role in enabling students to become independent, self-regulated learners. The essence of this concept is captured in the term, "assessment for learning". Parr and Timperley (2009) detected a change in focus in recent literature:

*There has been a shift in emphasis from teaching to learning. While earlier discourse around formative assessment focussed on the act of teaching and the role of teachers in gathering information and using it to inform their teaching, more recently there has been a reconceptualisation and formative assessment has been reframed as a social, collaborative*

<sup>1</sup> Pages 9–10 of this research summary discuss the relationship between content knowledge, pedagogical knowledge, and pedagogical content knowledge. Teachers blend their content knowledge with their knowledge of effective pedagogy to develop their pedagogical content knowledge: the specialised knowledge needed to teach effectively within a specific discipline.

<sup>2</sup> See *Effective Literacy Practice in Years 1 to 4* and *Effective Literacy Practice in Years 5 to 8* (Ministry of Education, 2003, pp. 62–63, and 2006, pp. 63–64, respectively) for a brief discussion of self- and peer assessment and their roles in building independent, self-regulating readers and writers.

activity, that is aligned more with learning (Black & Wiliam, 2006; Gardner, 2006). The spotlight has shifted to the teacher and the students, working in partnership (Hawe, Dixon & Watson, 2008) to enhance student learning. Students are being accorded a more significant role in their learning and in the process of assessing such learning.

Introduction, para. 1

One body of theory that has been influential in this shift is that of “activity systems”, within which there is potential for “systems of learning and development” to form. An “activity system” comprises the actions and interactions of individuals or groups who are engaged in the same activity. It includes the participants’ shared goals, values, artefacts (such as documents and assessment tools), and “normative practices”.<sup>3</sup> The activity system provides a context for learning in which knowledge and expertise are distributed across the system. While one person or group may have more expertise and so guide the learning process, others participate by managing their own learning. Within a classroom, the teacher holds the greatest expertise. Formative assessment provides a process for guiding students towards independence by enabling them to self-assess and therefore self-manage their learning. As explained in Parr and Timperley (2009):

*The explanatory framework in terms of how the system for learning and development is formed, we conceive of as being within the interactions between teachers and students and among peers as they engage in formative assessment practices, particularly in relation to enabling student self assessment and self regulation of learning.*

Introduction, para. 3

The formative assessment practices that teachers use to encourage the advancement of effective systems for learning and development that enable students to become self-regulated learners include questioning, providing feedback, and sharing learning goals and success criteria (Black, McCormick, James, & Pedder, 2006). According to Sadler (1989), teachers also need to pass on their “guild knowledge”, their understanding of what successful learning would look like in relation to a particular activity. Students can then use this knowledge to monitor their learning and development. Opportunities for self- and peer assessment enable students to further develop the knowledge and expertise required for self-regulated learning (Sadler, 1989). Thus, students are not passive recipients of feedback but work in collaboration with their teachers as learning partners. In the words of Parr and Timperley (2009):

*To support learning, the feedback teachers give needs to provide learners with information about where they are heading, how they are achieving, where they need to go next and how to close the learning gap (Hattie & Timperley, 2007). The feedback has to be provided in a manner that helps students to become aware of their own cognitive processes so that students are supported to gain mastery of them to become self-regulating learners.*

Introduction, para. 4

## Taking Part in Professional Inquiry

The research summary “Creating a Chain of Influence: Enabling Reciprocal Learning from Policy to Practice” describes how the LPDP has elaborated on the Teacher Inquiry and Knowledge-building Cycle to Promote Valued Student Outcomes, as presented in the Best Evidence Synthesis iteration (BES) *Teacher Professional Learning and Development* (Timperley, Wilson, Barrar, & Fung, 2007), to ensure that all LPDP participants are supported to build their knowledge around literacy content and pedagogy and to self-regulate their learning.

<sup>3</sup> The term “normative practices” refers to social norms; people’s understandings of the right and wrong ways to behave in particular social contexts.

The cycle is presented in figure 1 below. The LPDP's researchers conduct formal research that parallels the cycles of practitioner inquiry. That is, they gather and analyse a range of evidence, including student achievement information, to identify and understand:

- the learning needs of those for whose learning they are responsible;
- their own learning needs;
- the impact of any changes in practice that have resulted from new learning.

The researchers are responsible for helping to identify and address the learning needs of participants at all levels of the LPDP and ultimately also those of students. The researchers' own learning needs arise from their identification of questions, puzzles, and issues that need to be addressed if the participants in the LPDP are to continue to improve their work to promote student literacy achievement. The researchers share their learning with other participants in an ongoing conversation. This conversation is conducted with many people, including Ministry of Education policy makers, the LPDP leaders, facilitators at national seminars, and teachers in a group of case study schools. These people participate in activities intended to deepen their professional knowledge and skills around the new learning. They go on to use their knowledge and skills to take action and influence student learning. Both the teaching professionals and the LPDP researchers monitor the impact of any changes made in response to the learning. The researchers report on their findings to all the participants in the LPDP's inquiry cycle, often identifying new questions for further research and inquiry in the process.

In the three cycles of inquiry described below, the student learning needs that were being explored centred on self-regulated learning. The teachers' learning needs centred on the knowledge and skills that they would need in order to use formative assessment effectively to create systems of learning and development in their classes that would enable students to become self-regulated learners.

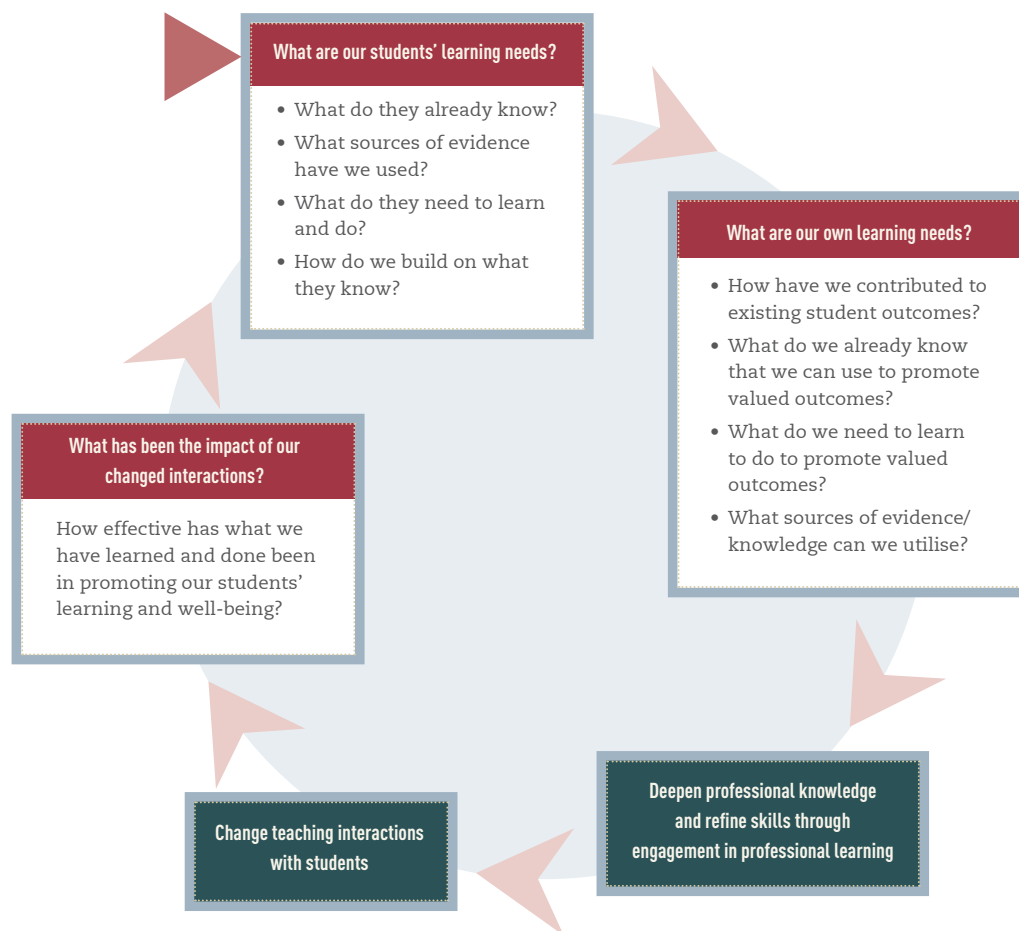
The first two cycles of inquiry are directly connected. The first cycle of inquiry (Study 1) was undertaken with the case-study schools from the February 2004 to December 2005 cohort. The changes to teacher practice led to improvements in the students' abilities to regulate their learning but left the researchers with more questions. The researchers posed these questions in a second cycle of inquiry (Study 2), conducted with the case-study schools from the February 2006 to December 2007 cohort.

In Study 1, the researchers demonstrated the importance of teacher actions in making clear to students the key aspects related to the students' learning. The researchers found that, for students to take increased responsibility for their learning, teachers need to integrate and align their learning aims, success criteria, learning activities, and feedback.

Study 2 showed that, while students report that teachers are being clear about the learning aims, success criteria, and areas that need to improve, this information does not necessarily relate to students knowing about their performance or understanding specifically what they need to do to improve. The study showed that students' confidence in their knowledge of the type of information they need to self-assess drops as they progress through their schooling, and this is especially obvious in the area of reading. This study concluded by raising further questions that are the subject of ongoing research.

In the third cycle (Study 3), the researchers looked at the nature of teacher knowledge, in particular the concept of pedagogical content knowledge. The study affirmed the belief that students' achievement improves when their teachers are supported to build the content knowledge and pedagogical content knowledge relevant to the purpose of learning. It also showed that scenario analysis can be useful for both measuring and building teacher knowledge.

Figure 1: Teacher Inquiry and Knowledge-building Cycle to Promote Valued Student Outcomes<sup>4</sup>



### Inquiry and knowledge-building, cycle 1

In the first cycle (Study 1), the researchers observed lessons in fifteen classes and then interviewed the students in those classes to find out their understanding of their learning. The researchers collected and analysed three main sources of information:

- written information from teachers about the lesson aims, the lesson's fit within the current sequence of learning, the planned activities, and the ways students would be organised
- transcripts of the teachers' instructions and interactions during the lessons
- the students' responses to a set of interview questions.

The researchers talked with two or three students from each class at the end of each observed lesson, sometimes individually but usually in groups of two or three. They explained to the students that the interview schedule comprised a set of questions, each of which had a specific purpose.

<sup>4</sup> This cycle was first presented in the *BES Teacher Professional Learning and Development* (Timperley et al., 2007). Since then, it has been adapted slightly by the lead writer, Helen Timperley.

As shown in the excerpt below, the researchers noted the purpose for each question in brackets following the question:

- *What are you working on today?* (Purpose – general introduction so students felt comfortable talking to researchers)
- *What are you learning about writing while you are doing this?* (Purpose – to find out if they were aware of the writing learning aims for the lesson)
- *Can you tell me what a good [type of writing focus of the lesson] looks like, for example, what a good argument looks like?* (Purpose – to find out if they know the criteria for mastery)
- *What does your teacher tell you to work on in your writing?* (Purpose – to find out students' understanding of any feedback/feed-forward received)

Timperley & Parr, 2009, pp. 47–48

The researchers were able to compare the students' responses to the teachers' statements about the aims and the criteria for success in order to evaluate how well the students had understood the aims and criteria. They also unpacked the transcripts to find out what kind of feedback the teachers had provided and the degree to which this feedback aligned with the learning intentions. They compared this to the students' responses to find out whether the students had understood the teachers' feedback.

All the teachers' learning aims were related to the deeper features of writing, such as audience or structure, but one-third of the students responded to the question about the learning aims by referring to surface features, such as spelling. The students understood the learning aims best when the aims were clearly specified, recorded, and linked to their previous learning. However, even when the aims were clearly stated, the students became confused if the aim and other messages didn't also align with what their teacher had told them to work on in their writing. When the students were not clear about the teachers' aims, they tended to default to focusing on a very broad aim such as "becoming a better writer", to taking actions such as "describing a lot and breaking up sentences" (in direct contradiction to the teacher's emphasis on joining sentences), or to focusing on surface features.

Most of the teachers who were clear about the learning aims were also clear about the criteria for success. However, the researchers found a number of cases where the success criteria did not seem to match the learning aim and where the teachers' instructional practices failed to focus their students on the progress the students needed to make to meet those success criteria.

Students' understandings of what their teachers had told them to work on were closely related to the feedback they had received during the lesson. Where this feedback was closely linked to the lesson aims and success criteria, students were able to talk about personal learning goals that were closely related to those aims and criteria. Teachers who provided such feedback tended also to be those who had been very explicit throughout the lesson about the aims and success criteria. However, the majority of teachers tended to offer only non-specific praise and feedback that was related to the mechanics of writing rather than to the deeper features the teachers had referred to in their lesson aims. As a consequence, when the researchers asked the students what their teachers wanted them to work on, most referred to the mechanics of writing or gave quite generalised responses. Common responses included to "spell words right", to "use more descriptive words", or "make sure it all makes sense".

In the example below, the teacher's purpose was to help her students start their stories with an interesting beginning. However, the researchers' analysis showed that the teacher did not share this aim with the students; she did not make the criteria for success explicit in either the lesson's introduction or in the activities and instruction that followed, and the feedback she provided did not relate to the aims or criteria for success.

*In the initial observations, [the lesson began] with the topic of the recount (“Getting lost”), with most of the lesson focused on motivating the students to recall a circumstance of getting lost through reading them a story about a child getting lost, recounting a personal experience and asking the students to share their experience in pairs. Students were then told to write their story of what had happened to them. While these strategies may be effective in motivating students, at no time were the criteria for effective recounts divulged to the students during the introductory activities which took up most of the lesson time.*

*Teacher 1 also modelled a first sentence for the students, which was consistent with her aim – “To help children to start their stories using an interesting beginning” – but all her references during the modelling were related to the mechanics of constructing words, not to the qualities of interesting beginnings (her lesson aim). Her only references to the qualities of interesting beginnings during the lesson occurred when the students began to write and she gave an instruction to write their first sentence and to “think of an interesting beginning to your story”. Her assistance to individuals as they were writing included one suggestion to “start off with a bang” and three specific wording suggestions for starting. She also suggested that two students use some speech in their first sentence and told two others that they should not start with “once upon a time” because that beginning was for fairy tales.*

*She also gave many other suggestions as she stopped to help individual students during independent writing. These suggestions were not related to the beginning sentence but could be seen to constitute implicit references to information students could use to construct successful recounts. Most of the individual assistance was focused on helping the students with the mechanics of writing. Given all this information it was not surprising that, when interviewed, the students explained that good writing of the type they were doing was neat, and had a title, capital letters and full stops.*

[Timperley & Parr, 2009, pp. 55–56](#)

The key lessons the researchers ([Timperley & Parr, 2009](#)) took from this study were that:

- it is important to be explicit about the lesson aims and the criteria for success;
- there is a clear link between students’ understandings and teachers’ instructional strategies;
- it is important to ensure that the feedback students receive during a lesson is clearly aligned to the lesson aims and success criteria;
- it is important for teachers to check their students’ understandings of the lesson aims and success criteria.

A number of the teachers in the study were concerned at the gap the interviews revealed between their own understandings of the lesson aims and the students’ understandings of the same aims. They reflected on what they had learned and took part in professional learning activities designed to help them formulate clearer instructional aims and to impart these aims in ways that their students could understand. They realised that their ability to be explicit was limited by their own lack of pedagogical content knowledge about writing. Through their reading and the professional learning activities they took part in, the teachers gained considerable knowledge about the ways in which writers craft their text in order to communicate with their audience. The teachers became self-regulated learners themselves; they set a learning goal (that their students would understand the learning aims and success criteria for each writing lesson), and they used questions similar to the research questions to monitor their students’ understandings and change their own practices when it seemed necessary.

Just four months after the study took place, the researchers returned to two of the classes where the students had exhibited the least clear understandings (including that of Teacher 1 described above). They found a marked improvement, revealed in both interview responses and actual student achievement gains.

*When interviewed during this second lesson, the students in both classes were able to articulate the learning aims and mastery criteria with a focus on the deeper features of writing. They spontaneously indicated how much they enjoyed writing, as did the teacher. They were less clear in their responses to questions about feedback, however, with less than half the students mentioning features of recounts. It appeared that the students' understanding of learning aims, mastery criteria or feedback/feed-forward was closely related to the specificity of each particular aspect of the lesson.*

*Achievement gains from the independently marked scripts showed an effect size of 1.04<sup>5</sup> over the four-month period. Notably, despite the lesson having become focused on deeper features, achievement gains at the time of the second lesson were as great for surface as for deep features.*

*Timperley & Parr, 2009, page 57*

## **Inquiry and knowledge-building, cycle 2**

The next cycle (Study 2) grew out of the first but took place two years later. This time, the researchers wanted to find out about the extent to which teachers were helping students to gain important information related to self-assessment. Instead of conducting interviews, the researchers asked nearly 1000 students from years 3 to 8 classes to complete a questionnaire in which they used a six-point scale to rate their teachers on the following six items:

- *I know what I need to work on to get better at ...*
- *I know if I am being successful in my ...*
- *My teacher makes it clear what we are learning about in ...*
- *My teacher tells me what I specially need to work on to improve ...*
- *I know what my learning goals are in ...*
- *My teacher explains what we are trying to achieve in ...*

*Parr & Timperley, 2009,*

*Table 1: Study 2 Mean and Standard Deviation for Items*

The students' responses were generally positive, ranging between "probably yes" and "yes" for most questions. The two items that received the highest mean scores (5, "yes") were: "My teacher makes it clear what we are learning about in ..." and "My teacher explains what we are trying to achieve in ...".

In recent years, a great deal of professional development and many teaching resources have focused on the importance of making explicit the learning intentions and the associated success criteria for lessons. It seems clear that teachers have understood these messages and implemented them in their practice.

*Parr and Timperley (2009)* examined the correlations between different items. Their findings included the following three points:

- There were lower correlations between the items relating to the teacher actions ("My teacher makes it clear what we are learning about in ..." and "My teacher tells me what I specially need to work on to improve in ...") and the item relating to students' knowledge of whether they are being successful ("I know if I am being successful in my ..."). The researchers put the argument that knowing how successful you are is essential for self-regulation; if you don't know what the expectations are, you cannot

<sup>5</sup> The term "effect size" is used in measuring the LPDP's impact. It shows the extent of student progress in the project relative to their starting point and allows comparison with the students' expected progress.



know whether you are achieving them. They suggested that the explanation for this low correlation might relate to the nature of teacher feedback. Teachers' feedback might not be specific enough about where students are relative to the desired performance, either in terms of the expected standard for the average student at their current year level or in terms of those students' long-term growth as readers and writers.

- There is also a relatively low correlation between the item relating to students' knowledge of success ("I know if I am being successful in my ...") and the item relating to teachers explaining what is to be achieved ("My teacher explains what we are trying to achieve in ..."). Again, the researchers suggested that this might relate to the quality of teacher feedback. They speculated that teachers may not be making their "guild knowledge" (their understanding of what successful learning would look like in relation to a particular activity) accessible to the students, and they pointed out that it is likely to be particularly difficult for teachers to define what quality writing looks like because writing can always be improved. They cited Marshall (2004), who argues that progress in writing involves teachers helping students move towards a "broad horizon" rather than a specific goal (cited in Parr & Timperley, 2009, under Study 2: I Know and My Teacher Makes It Clear: What Did We Find?, para. 7). Teachers develop this knowledge when they work together to make judgments about samples of student writing. Interestingly, as they advance through school, students seem to become less certain that they know what they are learning, have been told what they are meant to be learning, or know what success looks like. This is concerning – students' confidence that they have the knowledge they need to assess their own learning is decreasing rather than increasing.
- Parr and Timperley (2009) identified two dimensions to the knowledge that affects a student's ability to self-assess their learning: what the student knows and what the teacher explains, makes clear, or tells. When the researchers compared these items, they found that those relating to teacher actions do not necessarily link well to those relating to student knowledge. They wondered whether the items on student knowledge may simply be tapping into students' recollections of what they have been told and not into the knowledge they have been able to construct for themselves. This has led to further research investigating the difference between simply knowing and actively constructing understanding.

## What Do Research and the Literature Tell Us?

There is a great deal of research on teacher knowledge, because teaching is seen to account for a lot of the variance in student achievement (Alton-Lee, 2003) and because teacher knowledge is seen to be central to effective teaching practice (Timperley et al., 2007). There have been no clear definitions of "teacher knowledge", but it does seem to include the following four components:

- Knowledge of learners: This includes knowledge gained from analysing student achievement data, but it also includes knowledge about all aspects of students' personal and group identity and how these aspects contribute to the way each person learns.
- Content knowledge: This includes teachers' knowledge of the subject that is to be learned or taught, including teachers' understandings about important concepts within a discipline and how these concepts are acquired and organised.
- Pedagogical knowledge: This includes teachers' knowledge about the theories and practices associated with effective teaching and learning, about learners, and

about the education system. This extends to teachers' knowledge of formative assessment, which, in turn, requires them to have guild knowledge.

- Pedagogical content knowledge: This relates to the particular blend of content and pedagogical knowledge that teachers need in order to enable particular groups of students to learn within a particular discipline.

The concept of “pedagogical content knowledge” is a fairly recent one, first introduced by Shulman (1986, 1987) and discussed by Judy Parr in a paper presented to a United Kingdom Literacy Association conference in 2009:

*The notion of a different form of subject matter or content knowledge was proposed by Shulman (1986, 1987) who focussed attention on the question of how subject matter was transformed from the knowledge of the teacher into the content of instruction. He called this a “missing paradigm” (1986) in the study of teaching, claiming that teachers require a “special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding” (1987, p. 8). Teachers need to know the subject in a way that helps them to teach it to others. Shulman’s (1986) notion was that such is pedagogical content knowledge (PCK) and it “embodies the aspects of content most germane to its teachability” (p. 9). This includes not only the major topics but representations of knowledge (particularly, the transformation of subject matter for teaching) and an understanding of what makes learning easy or difficult, individually and developmentally; of student learning difficulties and of strategies to deal with them.*

under [The Nature of Teacher Knowledge](#), para. 1

Teachers of literacy face particular difficulties in defining the knowledge they need to teach effectively because the subject area is so vast, it is constantly expanding, and much of it requires the user to be able to bring to conscious awareness thought processes that are often subliminal. [Parr \(2009\)](#) suggests the following working definition of pedagogical content knowledge (PCK) in writing:

*Clearly, teachers need more knowledge than a competent adult writer. They need to know, at a conscious level, how texts work to achieve their communicative, rhetorical purposes, including knowledge of the features of text most commonly employed to support writing for a particular purpose. This involves a detailed knowledge of language and of text structures, what might be considered subject matter knowledge. But, PCK also involves the ability to articulate and make accessible to developing writers that which is implicit and often at a level below conscious thought; to unpack what writers are doing as they engage in the writing process. Arguably, in order to teach developing writers, teachers need to know, for example, what strategies more expert writers use as they engage in the complex activity of writing. Bringing to conscious awareness that which is automatic and implicit would seem to be a component of PCK in both reading and writing. Further, teachers need to marry this explicit knowledge of language and how texts work in contexts and of process and strategies with knowledge of the developmental trajectory that may operate in learning to write and of the approaches, activities and resources most efficacious to employ with developing writers. This package is then applied in concert with evidence of individual student (and group) pattern of achievement in writing.*

under [Pedagogical Content Knowledge in Literacy](#), para. 4

### **Inquiry and knowledge-building, cycle 3**

The final cycle reported here (Study 3) took place at about the same time as Study 2. The researchers wanted to dig down into the kinds of knowledge teachers need to enhance student achievement, and they wanted to know more about how this knowledge related to student achievement. In particular, they wanted to focus on teachers' pedagogical content knowledge and whether that knowledge was sufficient to enable their students to learn. The research involved sixteen schools whose literacy focus was on writing.

The researchers used a project tool – a set of scenarios – as an indicator of teachers’ pedagogical content knowledge in relationship to writing. Each scenario presented a set of student writing assessment data and a description of teaching practice for a hypothetical class. Teachers first used the data to identify the students’ literacy strengths and needs and to suggest a suitable teaching focus for the group. Then, in order to rate the effectiveness of the teaching episode, they applied the framework employed by the LPDP’s facilitators and literacy leaders and used it to evaluate the effectiveness of the scenario teachers’ observed practices. The structure of the LPDP framework involves:

- explicit teaching of writing (or reading) processing and comprehension strategies
- teachers’ interactions with students’ ideas, including feedback
- informed and shared learning intentions
- explicit links to prior knowledge, both world and literacy knowledge
- catering for diverse literacy needs.

In addition, teachers were asked to rate the extent to which the teachers in the various scenario lessons appeared to respond to the information from the student writing assessment data.

The set of scenarios was presented on two occasions, and the researchers compared the teachers’ responses to the writing progress of students in those teachers’ classes. Interestingly, there was no relationship between student achievement and teachers’ pedagogical content knowledge the first time the scenario was presented (Time 1), but there was a significant relationship at Time 2:

*The level of PCK with which the teachers began ... did not relate to [the] extent of ... progress the students made; however, the level that their PCK score reached by Time 2 was significantly related to the progress score of their class from Time 1 to Time 2 ( $r = 0.47, p < .01$ ).*

Parr, 2009,  
under [Relationships between Teacher Knowledge and Student Progress](#), para. 1

This suggests that the LPDP had been successful in supporting teachers to acquire more knowledge and to transfer this knowledge to their practice.

The scenarios proved to be a valuable way for the LPDP facilitators to find out about teachers’ pedagogical content knowledge. This information was necessary to enable the facilitators to design appropriate professional learning activities and monitor the impact of such activities. The scenarios also facilitated the teachers’ self-regulated learning. The scenarios set up authentic contexts that prompted teachers to reflect on their own knowledge, and that was a catalyst for professional discussion as the teachers analysed data, considered how that data might apply to their practice, and evaluated the appropriateness of the decisions made by the teachers in the various scenarios.

The research suggests that one of the things that distinguishes teachers’ pedagogical content knowledge from simple content knowledge is that pedagogical content knowledge involves applying the content knowledge. As an example, in writing, teachers both build and apply this knowledge when working collegially to score and moderate student writing samples. Considerable pedagogical content knowledge is required in order to give quality feedback on writing because it is so difficult to specify what a quality outcome looks like. An earlier LPDP research paper (Parr & Timperley, 2006) shows how teachers’ ability to provide written feedback on student writing improved through the teachers’ participation in the LPDP and how this improvement related to improvements in the teachers’ pedagogical content knowledge. The discussion that takes place while teachers learn to give quality feedback helps them develop the guild knowledge that is an essential component of pedagogical content knowledge.

Parr (2009) concludes:

*In the case of written language, teachers may not realize or acknowledge the extent to which subject content knowledge is an integral part, for example, of their efficacy in undertaking formative assessment (Dixon, 2008). The scenario has promise as clearly the type of instrument needed is one that requires teachers to diagnose a situation, retrieve the knowledge they have, then transform this knowledge to the instructional context. ... The notion of pedagogical content knowledge relating to key aspects of formative assessment in writing is worthy of further exploration.*

Discussion, para. 9

Now that you have read this research summary, you may like to refer back to the wider implications and suggested key questions sections at the start of the summary to think about how you might use the summary as a springboard for professional learning in your own context.

## References

- Alton-Lee, A. (2003). *Quality teaching for diverse students in schooling: Best Evidence Synthesis iteration (BES)*. Wellington: Ministry of Education. Retrieved 10 August 2009 from [www.educationcounts.govt.nz/publications/series/2515/5959](http://www.educationcounts.govt.nz/publications/series/2515/5959)
- Black, P., McCormick, R., James, M., & Pedder, D. (2006). Learning how to learn and assessment for learning: A theoretical enquiry. *Research Papers in Education*, 21, 119–132.
- Ministry of Education (2003). *Effective literacy practice in years 1 to 4*. Wellington: Learning Media.
- Ministry of Education (2006). *Effective literacy practice in years 5 to 8*. Wellington: Learning Media.
- Ministry of Education (2007). *The New Zealand Curriculum*. Wellington: Learning Media. Retrieved 10 August 2009 from [http://nzcurriculum.tki.org.nz/the\\_new\\_zealand\\_curriculum/the\\_school\\_curriculum\\_design\\_and\\_review](http://nzcurriculum.tki.org.nz/the_new_zealand_curriculum/the_school_curriculum_design_and_review)
- Parr, J. M. (2009). Building professional knowledge to teach writing. Paper presented to the United Kingdom Literacy Association 45<sup>th</sup> Annual Conference, London, 10–12 July 2009.
- Parr, J. M. & Timperley, H. S. (2006). Examining the role of teacher pedagogical content knowledge in literacy. Paper presented to the Annual Meeting of the American Educational Research Association, San Francisco, April 2006.
- Parr, J. M. & Timperley, H. S. (2009). Sharing guild knowledge for student self-assessment for learning. Paper presented to the European Association for Research in Learning and Instruction, Amsterdam, August 2009.
- Sadler, D. R. (1989). Formative assessment and the design of instructional systems. *Instructional Science*, 18, 119–144.
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15, 4–14.
- Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57, 1–22.
- Timperley, H. S. & Parr, J. M. (2009). What is this lesson about? Instructional processes and student understandings in writing classrooms. *The Curriculum Journal*, 20 (1), 43–60.
- Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). *Teacher professional learning and development: Best Evidence Synthesis iteration [BES]*. Wellington: Ministry of Education. Retrieved 10 August 2009 from [www.educationcounts.govt.nz/publications/series/2515/15341](http://www.educationcounts.govt.nz/publications/series/2515/15341)

## Acknowledgments

The Ministry of Education would like to thank all those who contributed to these materials, in particular:

- all LPDP facilitators and all schools who have participated in this research;
- Judy Parr, Helen Timperley, and their research team at Auckland University;
- Pam O'Connell, Lyn Baretta, and Carolyn English, LPDP Project Directors at Learning Media.

Writer: Kate Dreaver  
Editor: Bronwen Wall  
Designer: Penny Newman

The diagram on page 5 is copyright © Crown 2007.  
Quotations are copyright © their respective authors.

Published 2009 for the Ministry of Education by Learning Media Limited,  
Box 3293, Wellington 6140, New Zealand.  
[www.learningmedia.co.nz](http://www.learningmedia.co.nz)

Copyright © Crown 2009  
All rights reserved.  
Enquiries should be made to the publisher.

ISBN 978 0 7903 3468 4  
Item number 33468