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

MINISTRY OF EDUCATION
Te Tāhuhu o te Mātauranga

Creating a Chain of Influence: Enabling Reciprocal Learning from Policy to Practice

Wider Implications of the LPDP Learning

The experiences of the Literacy Professional Development Project (LPDP) have shown that when professional learning is based on a sense-making framework, policy messages can be communicated clearly and implemented in ways that have a powerful impact on outcomes for students. Three factors seem to be fundamental to the success of a professional learning project:

1. the use of an evidence-informed inquiry and knowledge-building cycle that is used at each layer of the project;
2. the development of tools and routines to convey the Ministry of Education's policy messages;
3. a role for facilitators' that spans the boundaries within the project.

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 people at each layer of a professional learning project need to know, believe, and do if the project is to support learning for all?
- How do you ensure that each person's learning is connected and aligned to others' learning at different levels of a professional learning project?

Main Sources for this Research Summary

- Chain of Influence from Policy to Practice (Timperley & Parr, 2009)
- Policy, Assessment and Professional Learning (Timperley, 2009)

Background

New Zealand has had a self-managing school system in place since 1989. Apart from exceptional circumstances, policy makers in the Ministry of Education cannot prescribe particular programmes or practices. Rather, they communicate messages through documents such as *The New Zealand Curriculum* (Ministry of Education, 2007b) and the draft *Literacy Learning Progressions* (2007a) and in assessment tools such as asTTLe (Assessment Tools for Teaching and Learning: Ministry of Education, ongoing).

Literacy Professional Development Project

Learning Media
Te Pou Taki Kōrero

Policy messages about literacy teaching and learning are articulated through the national Literacy Strategy. The overarching goal of the Literacy Strategy is "to improve English language and literacy learning and achievement and equip all New Zealand students with the necessary literacy knowledge and skills to be successful throughout schooling and as citizens". The Ministry of Education delivers messages about how to achieve this goal through five work streams, which include teaching and learning resources and professional development.[1] The messages represent key understandings that have been reported in national and international research about the changes educators need to make to achieve better outcomes for students.

The Literacy Strategy sits within a network of Ministry of Education goals, policies, and strategies. Currently, an important goal across the Ministry of Education is to shape New Zealand's education system to be more responsive to the strengths, needs, and interests of those students who are yet to achieve as expected for students at their year level. In particular, there is a focus on ensuring that Māori and Pasifika students achieve at the level necessary for success.

The LPDP forms a significant part of the Literacy Strategy's investment in professional development. It works towards helping teachers improve students' literacy achievement by conveying two policy messages in particular. These relate to:

- teachers developing the skills of self-regulatory inquiry;
- teachers building relevant content knowledge, pedagogical knowledge, and pedagogical content knowledge.[2]
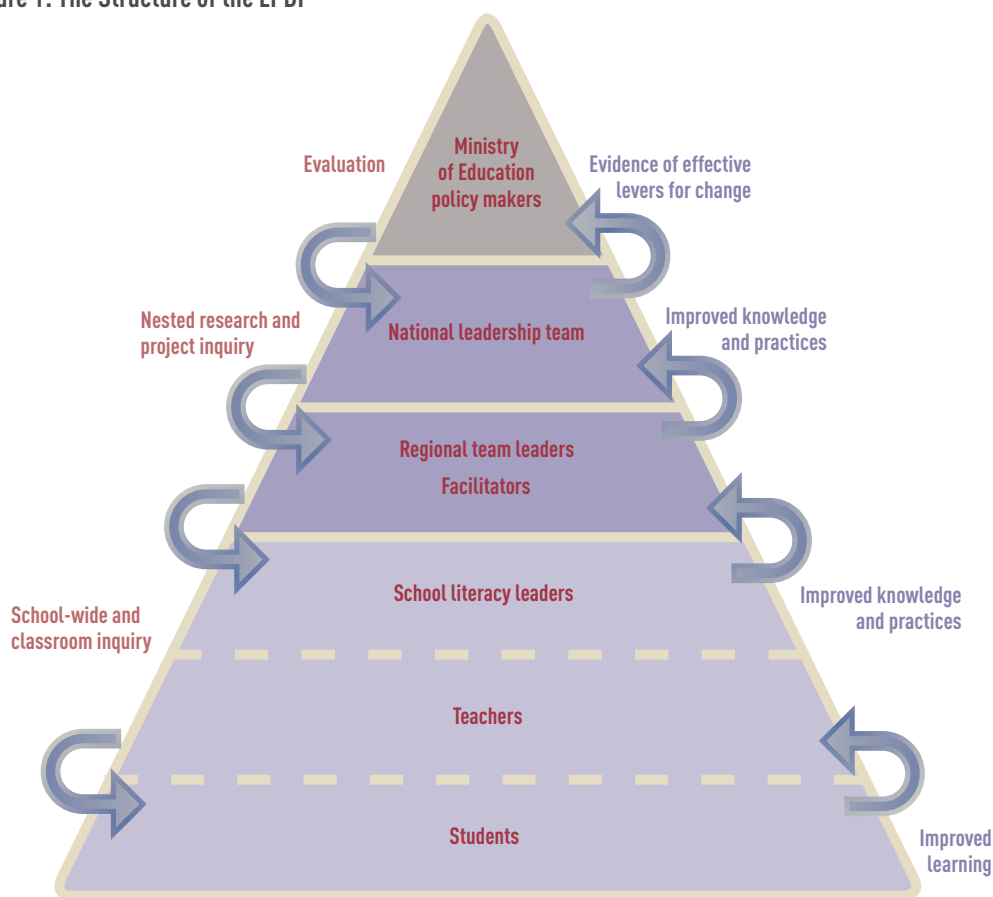
The LPDP is structured in seven layers (see figure 1 below):

- Ministry of Education policy makers contract the professional development providers and monitor the LPDP's progress.
- National LPDP leaders work with the regional team leaders, two researchers, and a Ministry of Education representative to constitute a leadership team. This team meets regularly to review progress, make adjustments to the LPDP, and plan implementation strategies.
- Each regional team leader co-ordinates a small team of facilitators in their region.
- Each facilitator works for two years with teachers and literacy leaders in six to eight schools. The facilitators meet regularly in their regional teams and as a national team.
- Schools appoint literacy leaders to lead the learning and provide a link between the facilitator and the rest of the staff.
- Teachers take part in whole-school learning that is nevertheless targeted to the specific strengths and needs of the students in their individual classes.
- Student achievement is the "touchstone" for measuring the impact of changes in teacher practice. Teachers learn to notice, recognise, and respond to their students' strengths and needs.

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[1] See Literacy Online for an overview of the Literacy Strategy (http://literacyonline.tki.org.nz/ Literacy-Online/What-do-I-need-to-know-and-do/Professional-development/Foundation-Learning-Literacy#Background)

[2] The research summary "It's All about the Students: Helping Students Become Self-regulated Learners" discusses 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.

Figure 1: The Structure of the LPDP[3]

Ministry of Education policy makers

Evaluation

Evidence of effective levers for change

Nested research and project inquiry

National leadership team

Improved knowledge and practices

Regional team leaders
Facilitators

School literacy leaders

School-wide and classroom inquiry

Improved knowledge and practices

Teachers

Students

Improved learning

The LPDP began in 2004, and five years on, the project has amassed detailed information about its impact on two large cohorts of schools. Effect sizes[3] show that the project has indeed been successful in meeting its objective of improving student outcomes. Schools participate in the LPDP for two school years. Both the February 2004 to December 2005 and the February 2006 to December 2007 cohorts achieved double the usual progress for the average student. Moreover, students who were involved in the LPDP cohorts and who began with achievement levels in the lowest 20 percent achieved approximately four times the expected progress (Timperley, 2009, under Student Achievement, para. 1).

Many professional development programmes attempt to communicate policy messages in ways that will impact on the actual practices of teachers and school leaders. Few achieve this aim. This research summary looks at how the LPDP has succeeded in sharing the key policy messages described above with teachers, school leaders, and facilitators in ways that have significantly influenced people's practices and have led, ultimately, to greatly improved literacy outcomes for many young New Zealanders.

What Do Research and the Literature Tell Us?

The literature is full of accounts of professional development initiatives that have tried to persuade teachers and school leaders to implement key policy messages. However, while many of these initiatives make useful contributions to our understandings of the process of professional learning and to the development of educational theory, few of them have

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[3] 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.

tested whether they have brought about changes in teacher or school leader practices to have a real and positive impact on outcomes for students. The LPDP has had such an impact. What makes it different? Possibly the application of sense-making theory.

Sense-making theory is based on the recognition that learners are not empty vessels to be filled with knowledge. Rather, it sees learning as involving the active construction of new ideas and understandings, a process that often requires the alteration or even rejection of old ideas and beliefs. For learners to learn something new in such a way that they change their behaviour, they must first notice the new idea, recognise it as something new and of value, and then interpret the idea in the light of their previous knowledge, experience, and beliefs. Learning is finally embedded when learners are able to self-regulate their learning, by monitoring to find out whether it is having the desired effect and making changes if it is not.

The policy messages that the Ministry of Education seeks to convey are essentially simple, but their instigation requires some fundamental shifts in thinking. Teachers, school leaders, facilitators, and project leaders need to make some quite profound changes to the knowledge and skills they bring to their work. Sense-making theory offers a way of comprehending the depth of the learning that needs to take place for the policy messages to be understood and implemented in practice. As Helen Timperley (2009) explained:
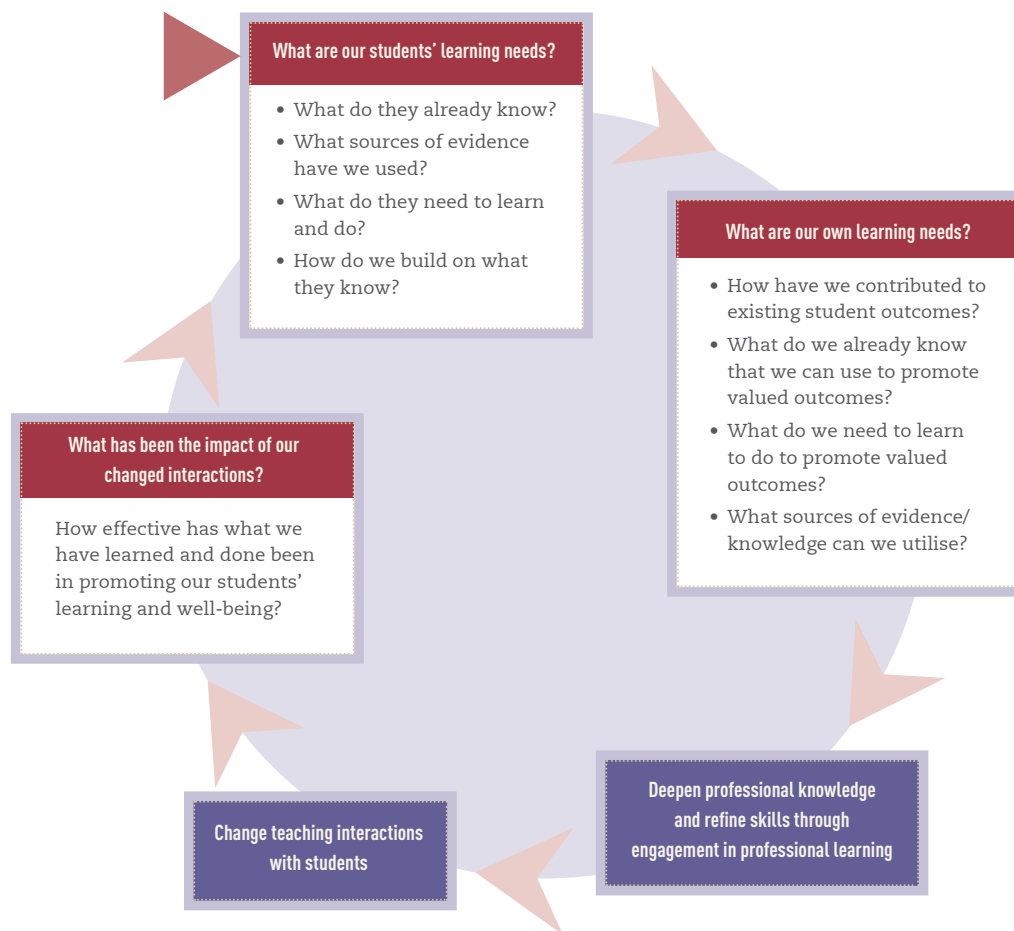
> *Within a sense-making framework, policy-making and interpretation [are] essentially interactive. In reality, policy implementation is a process of policy construction at different layers of the system and, to have an impact, [it] must ultimately be interpreted in ways that influence what happens in classrooms (Spillane, 2004). At each layer, those involved identify what [the policy] means for their work and pass on their understandings to the next layer. In reality, policy making is not just the prerogative of a central Ministry but, rather, occurs at all layers of the system as the policy intent is re-translated by actors at each layer.*

<div align="right">Sense-making Theory, para. 2</div>

The New Zealand Curriculum reflects this notion of "sense making". It provides a general framework and common direction for all schools but gives them the scope, flexibility, and authority to design and shape a curriculum that is suitable for their particular students. Likewise, the Literacy Strategy doesn't prescribe a set of solutions to the literacy issues within schools. It accepts that teaching is a complex activity and that the ways in which teachers enact policy messages will inevitably be affected by a variety of other issues and concerns, including the teachers' beliefs about what constitutes important content and how students learn and their concerns about their students' willingness to participate in class (Kennedy, 2004). This means that we should not judge the success of a policy by how well people replicate certain practices. Instead, we need to look at whether the policy has enabled its participants to achieve the desired outcomes, which for literacy in New Zealand means raising students' average literacy achievement level while ensuring that all students have the opportunity to do well.

The Best Evidence Synthesis iteration (BES) *Teacher Professional Learning and Development* (Timperley, Wilson, Barrar, & Fung, 2007) presents an evidence-informed inquiry and knowledge building cycle that aims to describe the sense-making process for teachers. This inquiry cycle is presented in figure 2 below. The cycle integrates the Ministry of Education's messages about the importance of self-regulated learning and of building content knowledge, pedagogical knowledge, and pedagogical content knowledge in reading and writing. Its purpose is to improve the outcomes that are valued for students, and so student assessment information is critically important. Teachers use this information to self-regulate their learning – to identify their students' learning needs and to monitor whether changes in their own practices are having the desired impact on student outcomes.

Figure 2: Teacher Inquiry and Knowledge-building Cycle to Promote Valued Student Outcomes [4]

What are our students' learning needs?

- What do they already know?
- What sources of evidence have we used?
- What do they need to learn and do?
- How do we build on what they know?

What are our own learning needs?

- How have we contributed to existing student outcomes?
- What do we already know that we can use to promote valued outcomes?
- What do we need to learn to do to promote valued outcomes?
- What sources of evidence/ knowledge can we utilise?

What has been the impact of our changed interactions?

How effective has what we have learned and done been in promoting our students' learning and well-being?

Deepen professional knowledge and refine skills through engagement in professional learning

Change teaching interactions with students

Taking Part in Professional Inquiry

The LPDP has elaborated on the Teacher Inquiry and Knowledge-building Cycle to Promote Valued Student Outcomes to ensure that the Ministry of Education's policy messages about self-regulated learning and the need to build content knowledge, pedagogical knowledge, and pedagogical content knowledge are shared throughout the project in respectful ways. The project encourages each participant to make sense of the messages in terms of their own knowledge, experience, and learning context. Participants at each layer of the LPDP use 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.

Connections that span the various layers of the LPDP enable policy messages to be shared throughout the project in ways that make it easier to translate the language of policy to the language of the classroom.

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[4] 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.
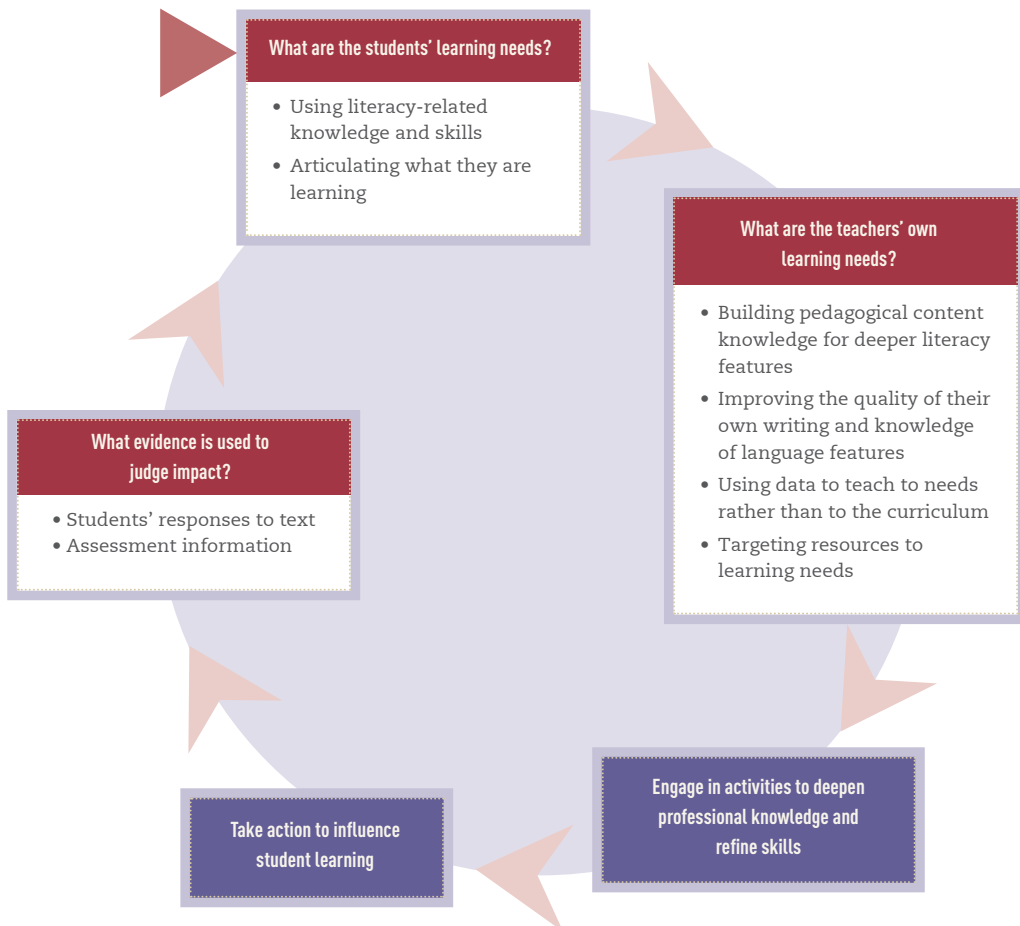
The researchers interviewed a sample of teachers, facilitators, project leaders, and policy makers towards the end of 2007, when the second cohort of schools completed their involvement in the LPDP. The purpose of the interviews was to find out about these participants' experiences in relation to the inquiry and knowledge-building cycle and about the policy messages that were important in the context of their work. The interviewees were also asked about the people and the project tools that had had the greatest impact on their learning.

The researchers found that the Ministry of Education's policy messages were translated and implemented in different ways at each layer of the LPDP. Policy makers and project leaders tended to express the messages in quite abstract terms, while teachers were much more specific in their uses of the policy messages. The researchers also found that there were differences in the learning needs described by participants at each layer of the project.

Teachers' inquiry and knowledge-building

Figure 3 summarises the teachers' responses to the research interviews.

Figure 3: Teachers' Inquiry and Knowledge-building Cycle

What are the students' learning needs?

- Using literacy-related knowledge and skills
- Articulating what they are learning

What are the teachers' own learning needs?

- Building pedagogical content knowledge for deeper literacy features
- Improving the quality of their own writing and knowledge of language features
- Using data to teach to needs rather than to the curriculum
- Targeting resources to learning needs

What evidence is used to judge impact?

- Students' responses to text
- Assessment information

Take action to influence student learning

Engage in activities to deepen professional knowledge and refine skills

Teachers' primary responsibility is for their students' learning, and the teachers participating in the LPDP research were specific about the literacy-related knowledge and skills their students needed, listing needs such as:

Understanding that quality is not the same as quantity

Writing to an audience

Very low on vocabulary knowledge.

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Timperley, 2009,
under Sense-making across System Boundaries: Teachers, para. 2

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However, the teachers interviewed did not seem to have understood the importance of the policy message about students needing to be able to self-regulate their learning – only one teacher commented on students' need to "articulate what they are learning".

At the same time, the teachers described their own learning needs, especially with regard to the improvements they needed to make in their knowledge and their strategies for literacy teaching if they were to meet their students' needs. Some teachers described how they now use assessment information to help them match knowledge and strategies to their students' learning needs:

"The majority of [tests] were done and went in the [principal's] files somewhere … I remember we did one test and I told [the principal] this is a waste of time, you know, so I just did it because I was told to do it …. But when I actually looked at the data and started to understand it, I used it so much, it [helped me to form] my groups, it informed me what I needed to do next and things like that and that is the same with the writing data, no real standardized test and just my own general knowledge, but now I know what a level 2B is and I know how to work with that."
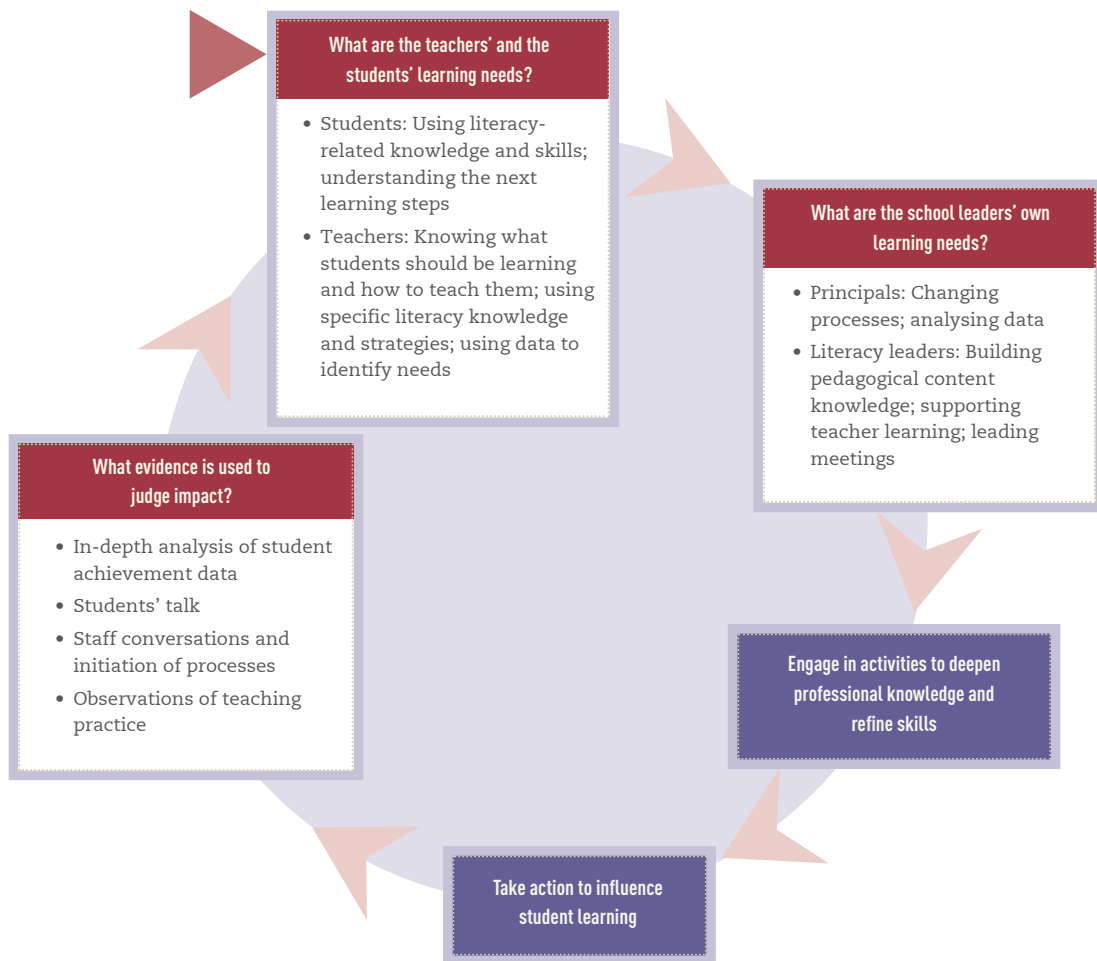
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Timperley, 2009,
under Sense-making across System Boundaries: Teachers, para. 3

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The teachers explained that they were also using assessment information, along with consideration of their students' writing and reading behaviours, to check the impact of their changed practices on their students. However, the teachers were much less clear about the need to use self-regulatory inquiry to check the impact of their practices than they were about the need to build their pedagogical content knowledge.

School leaders' inquiry and knowledge-building

Figure 4 summarises the school leaders' responses to the research interviews.

Figure 4: School Leaders' Inquiry and Knowledge-building Cycle

What are the teachers' and the students' learning needs?
- Students: Using literacy-related knowledge and skills; understanding the next learning steps
- Teachers: Knowing what students should be learning and how to teach them; using specific literacy knowledge and strategies; using data to identify needs

What are the school leaders' own learning needs?
- Principals: Changing processes; analysing data
- Literacy leaders: Building pedagogical content knowledge; supporting teacher learning; leading meetings

What evidence is used to judge impact?
- In-depth analysis of student achievement data
- Students' talk
- Staff conversations and initiation of processes
- Observations of teaching practice

Engage in activities to deepen professional knowledge and refine skills

Take action to influence student learning

There are two kinds of school leaders participating in the LPDP: principals and literacy leaders. A school leader's responsibility is to address their students' learning needs by addressing the learning needs of the teachers. Early in their involvement in the LPDP, each school conducts a needs analysis to form a detailed picture of the current learning needs of its students, teachers, and leaders. One literacy leader described the initial situation in her school:

> *"As far as knowing what students' needs were with writing, and the teachers I was working with, I really had no idea where the base was …. I was amazed. Absolutely amazed with the lack of knowledge from the teachers. It just seemed to be that nobody really was doing anything."*

<div align="right">

Timperley, 2009,
under Sense-making across System Boundaries: School Leaders, para. 2

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Literacy leaders taking part in the LPDP research tended to describe the knowledge and strategies teachers and students need to develop in considerable detail, while principals tended to speak in more general terms. However, both literacy leaders and principals understood the need for teachers and students to develop inquiry skills as well as literacy-related skills.

When speaking about their own learning needs, principals tended to comment on their role in leading change across the school while, once more, literacy leaders spoke more specifically about the pedagogical content knowledge that they needed to develop if they were to lead learning for others. The literacy leaders expressed some discomfort about leading learning for others, and many expressed concerns about their credibility:

"I was very aware of my lack of knowledge as I was going into watch somebody else do something that I was crap at myself."

Timperley, 2009,
under Sense-making across System Boundaries: School Leaders, para. 4

Most school leaders, both principals and literacy leaders, talked about the use of student achievement data to inquire into the impact of the changes to teaching and leadership practice, but conversations with colleagues and students and observations of teaching practices were also important.

Facilitators' inquiry and knowledge-building

Figure 5 summarises the facilitators' responses to the research interviews.

Figure 5: Facilitators' Inquiry and Knowledge-building Cycle

What are the leaders', teachers', and students' learning needs?
- Students: Using literacy-related knowledge and skills; using self-monitoring strategies
- Leaders and teachers: Building pedagogical content knowledge; using assessment data; becoming self-regulated learners
- Leaders only: Knowing what is taught in classrooms

What are the facilitators' own learning needs?
- Building pedagogical content knowledge
- Helping teachers and leaders use data to make teaching and organisational decisions
- Shifting from "telling" to "co-constructing"
- Developing the attitude and skills in teachers and leaders to become self-regulated learners

What evidence is used to judge impact?
- Professional practice improvements
- Interactions with and between professionals
- Student achievement

Engage in activities to deepen professional knowledge and refine skills

Take action to influence student learning

The facilitators are responsible for the school leaders' learning, as well as that of the teachers and students. The facilitators interviewed for this LPDP research were very clear about the links between the learning needs of each of these groups. Their comments aligned closely with the key messages that the LPDP is trying to communicate because they talked about the kinds of knowledge each group needed to develop while also discussing the need to help members of each group become self-regulated learners.

In the following extract, the facilitator interviewed refers to the elements that many facilitators see as being key teacher needs: building pedagogical content knowledge, including their assessment knowledge, and becoming self-regulated learners:

> *"The data on teacher knowledge showed us that whilst we had committed, professional teachers they didn't have strong content knowledge, or pedagogical content knowledge, relating to teaching reading. That created angst for us and then presenting that back to teachers who, themselves, probably had stronger beliefs than I did ... really created a hornet's nest here. There had been a culture of positivity ... between staff and between teachers in appraisals and any observations that had been conducted. And when we came in with ... 'we expect you to self-reflect about your practice ...', that was met with huge resistance.... The student data actually showed that the children were performing below the mean, which was a shock to everybody concerned."*

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Timperley, 2009,
under Sense-making across System Boundaries: Facilitators, para. 4

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The facilitators identified an additional need for school leaders: the need to learn what to look for when conducting classroom observations. This need reflects the fact that, in the past, classroom observation hadn't focussed enough on developing teachers' pedagogical content knowledge.

The facilitators were highly reflective about their own learning needs, which included growing their content knowledge, their assessment knowledge, and their facilitation skills. Many facilitators said they wanted to improve their ability to help teachers self-regulate their learning. One facilitator said that a learning need for teachers was to move from talking about their "competence" to talking about their "effectiveness in promoting student learning". This facilitator identified one of their own needs as being to know what to look for as evidence of effectiveness. This facilitator and their colleagues sought this evidence of effectiveness in the student assessment data, but they also found rich evidence in the shifts they observed in school leaders' and teachers' practices, in their close analyses of their own conversations with school personnel, and in their analyses of the interactions between the teachers and school leaders. As one facilitator said:

> *"It's the shifts I've noticed in practices in the school and whether or not I actually have to go back to the same thing over and over again. When I see a shift in terms of practice that's making a difference for children in their learning then I believe I've been effective. But if I haven't seen a shift, then I haven't been effective."*

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Timperley, 2009,
under Sense-making across System Boundaries: Facilitators, para. 7

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Project leaders' inquiry and knowledge-building

Figure 6 summarises the project leaders' responses to the research interviews.

Figure 6: Project Leaders' Inquiry and Knowledge-building Cycle
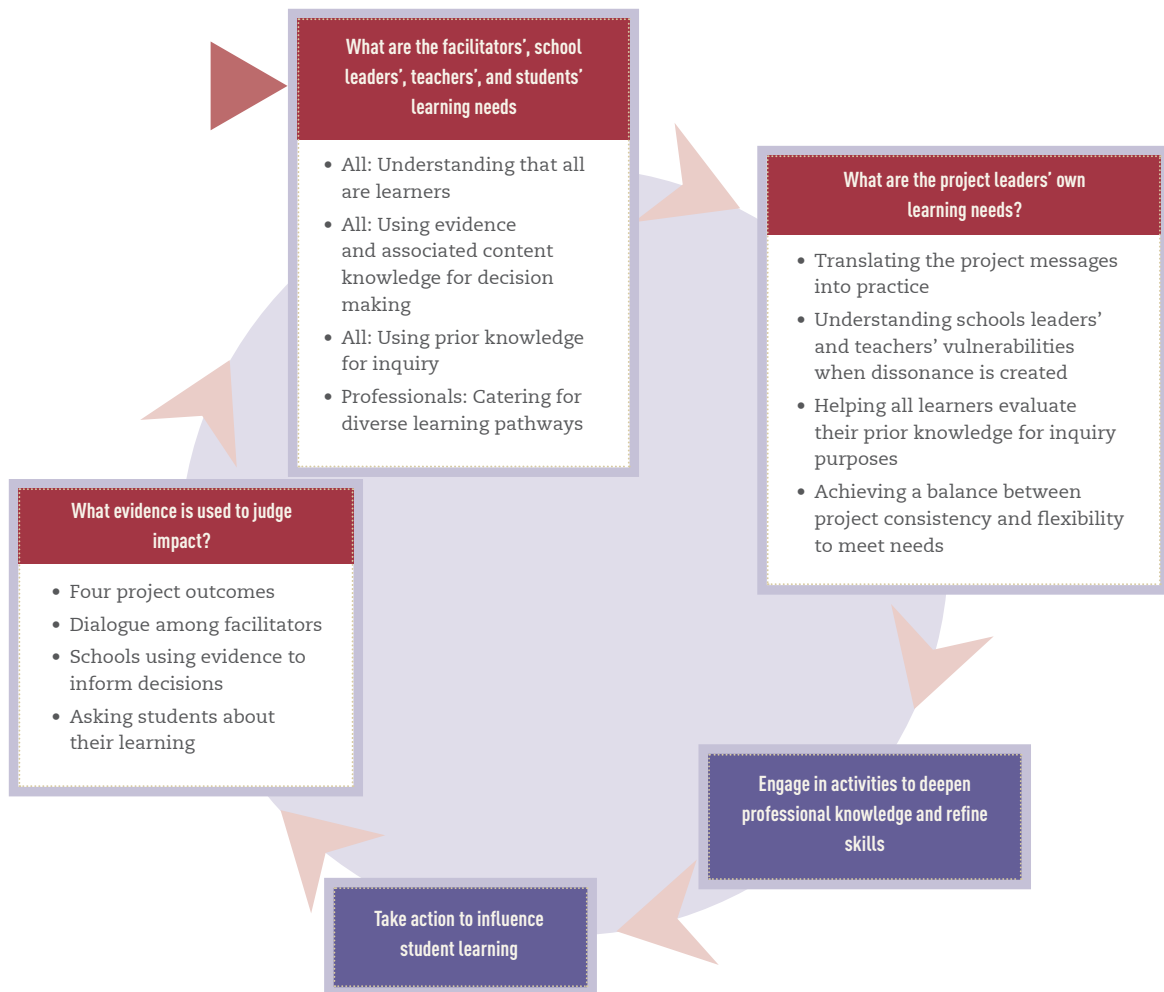
The project leaders' responsibilities are to students and to all the teaching professionals involved in the LPDP. Some of the learning needs identified by the project leaders in this research were common across all groups, including the need to understand that all are learners and the need to use evidence to establish priorities. In relation to school leaders, one project leader who was interviewed commented that leaders need to:

> "… learn to use evidence to think about what they need to know about students and about their teachers and how to put that sort of evidence together to then know what they as leaders of learning need to do. What is important to notice and what to sift out."

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Timperley, 2009,
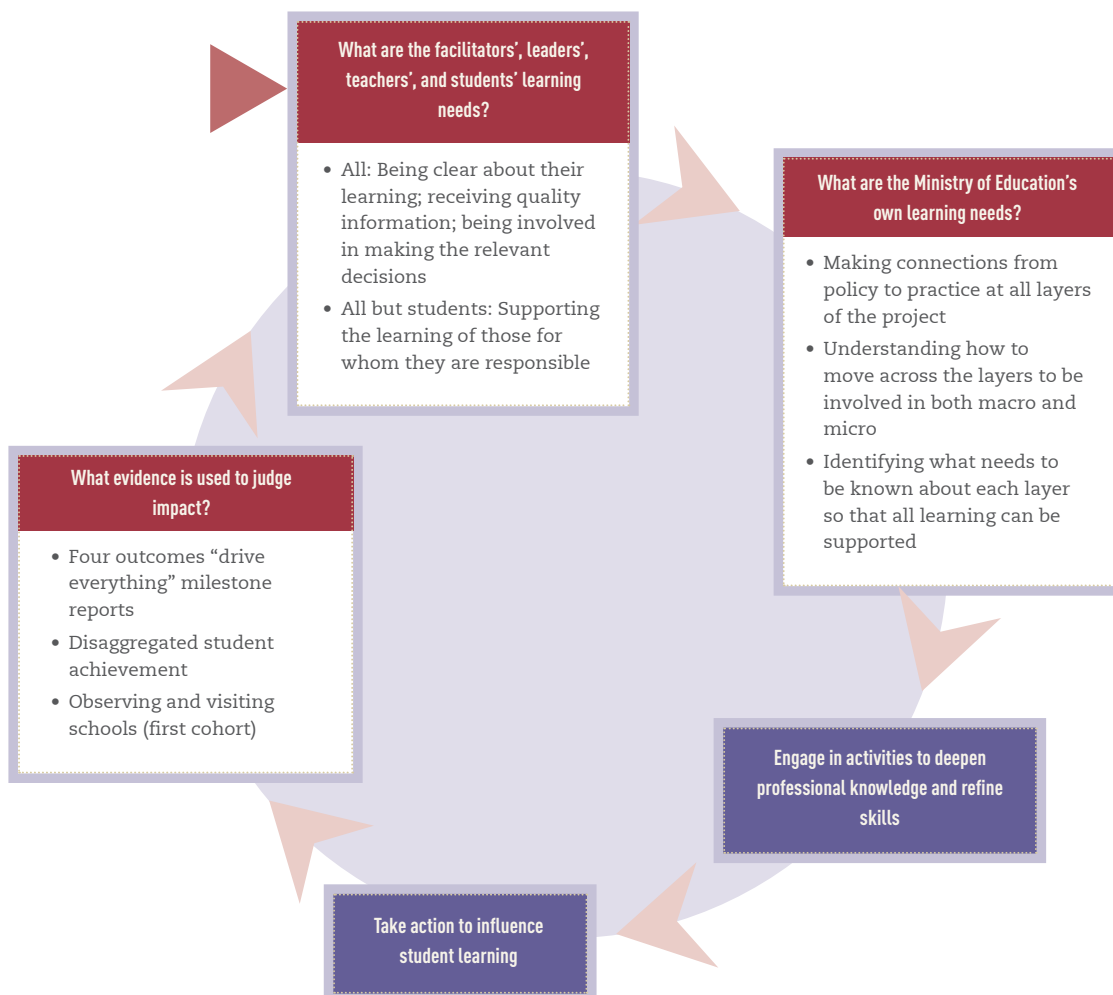under Sense-making across System Boundaries: Project Leaders, para. 1

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The project leaders were deeply aware of their own learning needs as they faced the challenges involved in integrating an inquiry approach to professional development with one that is aimed at building knowledge. They wondered, for example, how they could ensure consistency in delivering the LPDP's key messages and approaches while also ensuring enough flexibility to enable each individual's learning needs to be met.

Like the other LPDP participants, the project leaders consider a range of evidence as they seek to assess their impact. National project student achievement data are used to evaluate the project's progress towards its strategic outcome of improving student achievement. Other evidence is used to look at progress towards the four other LPDP outcomes that contribute to the outcome.[5] For example, the project leaders look at evidence of the facilitators' understandings of key project processes as well as the understandings of the teachers and school leaders. The project leaders report on this evidence in regular milestone reports to the Ministry of Education. These reports follow a structure based on an ethos that is consistent with the LPDP's inquiry approach, and one of the project leaders described them as addressing a series of questions: "What's improved?", "What hasn't?", and "What's the project going to do about it?".

Ministry of Education policy makers' inquiry and knowledge-building

Figure 7 summarises the responses of two Ministry of Education policy makers to the research interviews.

Figure 7: Ministry of Education Policy Makers' Inquiry and Knowledge-building Cycle

What are the facilitators', leaders', teachers', and students' learning needs?

- All: Being clear about their learning; receiving quality information; being involved in making the relevant decisions
- All but students: Supporting the learning of those for whom they are responsible

What are the Ministry of Education's own learning needs?

- Making connections from policy to practice at all layers of the project
- Understanding how to move across the layers to be involved in both macro and micro
- Identifying what needs to be known about each layer so that all learning can be supported

What evidence is used to judge impact?

- Four outcomes "drive everything" milestone reports
- Disaggregated student achievement
- Observing and visiting schools (first cohort)

Engage in activities to deepen professional knowledge and refine skills

Take action to influence student learning

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[5] See "Introduction: The Literacy Professional Development Project: A Learning Project" for a discussion of the five outcomes of the LPDP.

The policy makers interviewed in this research showed a very clear understanding of the inquiry and knowledge-building cycle and of their place in this cycle. Their responses were similar to those of the project leaders in that they perceived the requirement to meet student learning needs as the underpinning goal of the LPDP. In the words of one of the Ministry of Education respondents, all participants need to be clear about their own learning needs, to receive quality information relating to those needs, and to be involved in relevant decisions (Timperley, 2009, under Sense-making across System Boundaries: Ministry of Education, para. 2). The policy makers felt that it is harder for professionals to identify and acknowledge their own learning needs than it is for students to identify their learning needs. One policy maker said:

> *The largest growth [within the project] has been for teachers to understand that their knowledge is not as secure as they thought.*
>
> Timperley, 2009,
> under Sense-making across System Boundaries: Ministry of Education, para. 3

Like the project leaders, the Ministry of Education policy makers' learning needs centred on how to translate policy messages to practice at each layer of the LPDP while meeting the very diverse learning needs of the project participants:

> *We were very much thinking about the student as the outcome without being able to unpack it … in understanding the notion of peeling back those layers … It's being able to step back and to peel each layer back.*
>
> Timperley, 2009,
> under Sense-making across System Boundaries: Ministry of Education, para. 4

The milestone reports, along with the Ministry of Education's inquiry cycle framework, enabled the policy makers to reflect on the LPDP's impact and have conversations with the project leaders about how the LPDP can be made more effective. Such reflection and conversations have often had an impact beyond the project. For example, an examination of the evidence from the first cohort of schools involved in the LPDP showed that a small group of students began in the lowest achievement band and remained there, despite their teachers' best efforts. The policy makers realised that teacher professional development was not going to be enough to enable such students to reach the achievement levels necessary for success. These students need targeted specialist assistance, and this assistance needs to be part of an integrated strategy within schools. The process of developing the necessary assistance continues to be a focus for Ministry of Education work.

Crossing Boundaries

The researchers' findings enable us to understand how the LPDP has helped its participants make sense of key policy messages, make changes in their professionals' practices, and improve students' learning outcomes. The teachers' responses to the research questions show that they found the messages about building knowledge more compelling than the messages about self-regulated inquiry. The responses also show that the teachers interpreted the messages more literally than did the LPDP leadership participants.

Nevertheless, it is clear that, consciously or not, the LPDP routines of evidence-informed inquiry and knowledge building have strongly influenced the thinking of all participants:

Sense-making (Coburn, 2001; Spillane, 2004) occurred through the complementary inquiry processes through different system layers. The links between assessment information about student learning and teachers' knowledge and practice [were] central to identifying the professional learning of teachers, and school leaders. Assessment of students', teachers' and leaders' knowledge and practice was used by facilitators to identify their learning needs. What they needed to teach others was what they needed to learn themselves. These cycles occurred up through the system to project leaders and the Ministry of Education.

<div style="text-align: right">Timperley, 2009, Conclusions, para. 3</div>

This "sense making" occurred across the boundaries of the different layers of the LPDP structure in two key ways. That is, the participants "make sense" by:

- developing tools and associated routines that inform and enable evidenced-informed inquiry and decision making;

- influencing key personnel.

The LPDP has developed a set of "tools" that are designed to promote sense making around the key project messages. The researchers asked interviewees about the usefulness of key tools in enabling sense making. They found that:

Tools that effectively conveyed key project messages were those that required users to examine evidence related to their own practice and/or their students' understandings, together with a clear direction for how to improve.

<div style="text-align: right">Timperley & Parr, 2009, Conclusions, para. 6</div>

Few of the tools are used at every layer of the project, but all tools span more than one layer. For example, one tool is the development of classroom observation protocols that provide information about teacher practice. Teachers, literacy leaders, and facilitators rated this tool especially highly. It identifies aspects of effective practice, and these aspects can be discussed with regard to a record of evidence of teachers' actual practices. Crucially, this tool includes interview questions that ask students about their understandings of their learning, explicitly connecting student learning to teacher learning.

A project outcome matrix is another tool that was rated highly by policy makers, project leaders, facilitators, and school leaders. This tool allows school leaders and facilitators to identify where they are situated as they progress towards each project outcome and to pinpoint where they need to focus their attention. It enables the policy makers and project leaders to understand the shifts across the project as a whole and identify areas for improvement.

The most significant project routine was the use of assessment information. While interviewees felt that the routine of using assessment information about students was the touchstone for all other routines, using assessment information about teacher and leadership knowledge and practices was also seen as being essential for identifying changes that need to be made.

When the interviewees were asked about the influence of other people in the project, they typically referred to those in the layers immediately above and below them. The only group whose influence was seen to span the entire project – from the Ministry of Education to students – was the facilitators' group. (Interestingly, none of the respondents mentioned principals as having an influence on their learning.)

Clearly, the facilitators were seen as being pivotal to the LPDP's success:

> While policy makers and project leaders were pivotal in formulating the bigger picture of the project, the translation of the messages into practice was clearly dependent on the expertise of the visiting facilitator who spanned system boundaries and helped the practitioners make sense of the change messages.
>
> Timperley & Parr, 2009,
> under The Role of the Visiting Facilitator in Crossing Boundaries, para. 4

It is important to note that, in the context of the LPDP, the relationships between participants are reciprocal. This is essential to a sense-making process: there must be mutual respect and valuing of previous knowledge. The milestone reports are a good example of reciprocity encouraging the process of making sense. As already noted, the milestone reports are framed as an inquiry. They are used as the basis for conversations between the policy makers, project leaders, and facilitators. A project leader described how the milestone reports are used:

> We consciously model the process. [After each Milestone] we put up, "What we've learned, what we think we need to learn to do better, and how we're going to go about doing that". We use this to focus discussions rather than, "This is what we have to do".
>
> Timperley & Parr, 2009,
> under Sense-making across System Boundaries, para. 7

In this way, the milestone reports themselves become another tool for learning and improvement.

## What Do Research and the Literature Tell Us?

Boundary spanning, boundary crossing, and boundary marking are all commonly used terms that refer to the interactions between the people in different layers of a system:

> Boundary marking and boundary crossing are well established concepts in policy writing (e.g. Bathmaker, Brooks, Parry & Smith, 2008). Boundary-spanning implies a deeper engagement with ideas and is typically used in organizational rather than policy analyses (e.g. Coldren & Spillane, 2007).
>
> Timperley & Parr, 2009, Conclusions, para. 8

The LPDP, with its seven layers, forms a system in which the boundaries are spanned by tools, routines, and key personnel working together to convey key ideas that enable sense making. Figure 8 shows how project participants interact with each other to create an overlapping and reciprocal chain of influence that connects the learning and actions of all, from the Ministry of Education policy makers and project leaders through to teachers and students.

Figure 8: Extent of Influence

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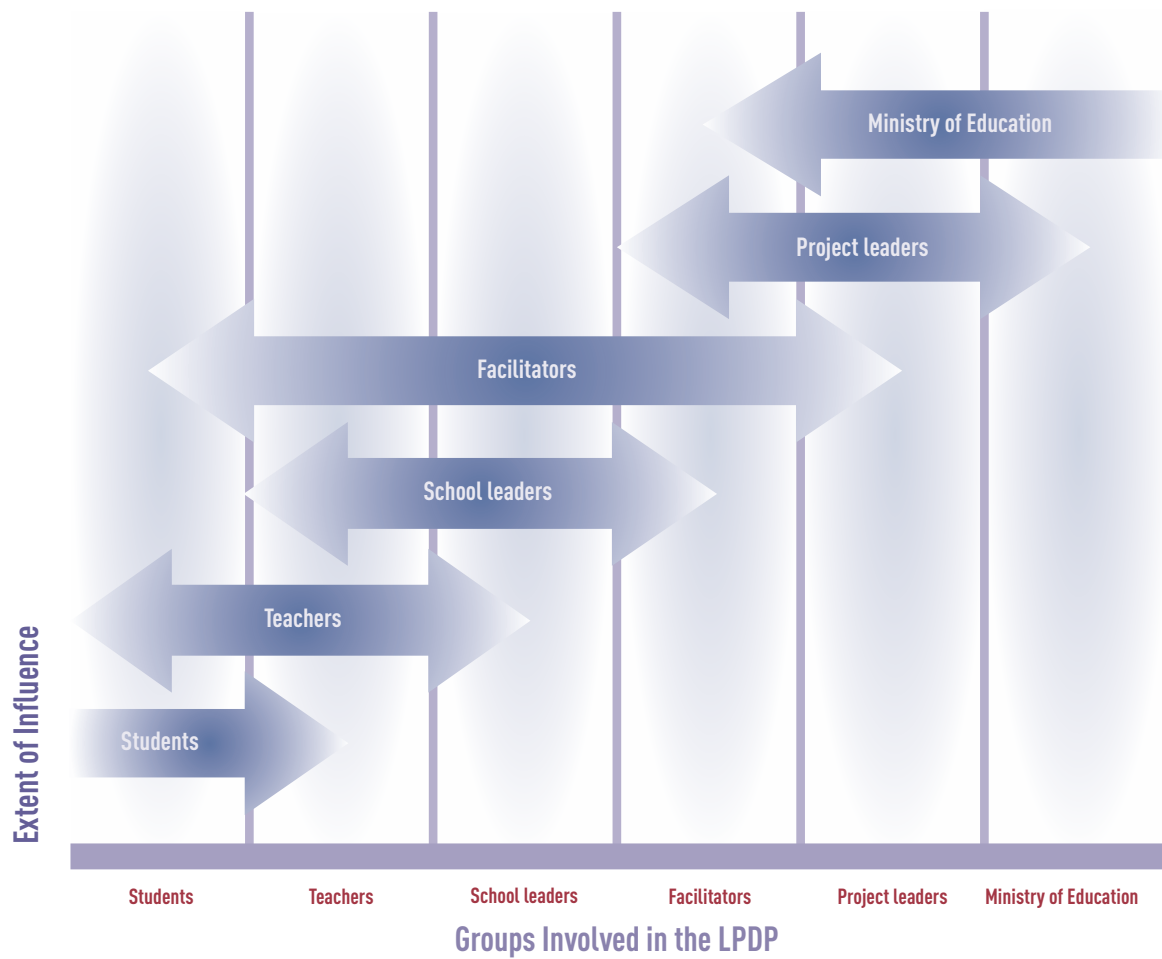
Now that you have read this research summary, you may like to refer back to the wider implications and suggested key questions sections at the start of the summary to think about how you might use the summary as a springboard for professional learning in your own context.

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