Ki te Aotūroa
Improving Inservice Teacher Educator Learning and Practice
Te Whakapakari i te Ratonga Whakangungu Kaiwhakaako
Ki te Aotūroa

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Ministry of Education
Learning Media
Wellington
Acknowledgments

He Mihi

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Forewords
Ngā Kupu Whakataki

Minister of Education

This set of learning materials is an important outcome of the Inservice Teacher Education Practice (INSTEP) project, the first project funded by the Ministry of Education specifically aimed at developing a knowledge and evidence base about effective inservice teacher educator practice and learning.

Recent evidence presented in the Teacher Professional Learning and Development: Best Evidence Synthesis Iteration (2007) describes the critical role of external experts, including inservice teacher educators (ISTEs), in effective teacher professional learning and development. The TPLD BES notes that, in the studies it reviewed, the presence of an external expert by itself did not guarantee success and, further, that the skills of the providers and what they did to promote teacher learning were rarely the subject of investigation.

The INSTEP project set out to investigate gaps in our knowledge about effective ISTE practice; these learning materials embody the understandings developed through the research and development activities of the project.

One of the principles underpinning Ki te Aotūroa is that ISTE practice can be said to be effective when it strengthens teachers’ practice in ways that improve outcomes for diverse students. This principle affirms the responsibility we all share as we seek ways to improve outcomes for all students.

I commend this resource to all inservice teacher educators – advisers, facilitators, resource teachers, and in-school leaders of professional learning. The materials reflect the discussion and learning of more than 350 participants in the INSTEP project. They do not provide a recipe for success; rather, they are intended to promote collaborative inquiry and ongoing learning for ISTErs, whether new or long-experienced in their role. I know they will spark further investigation and research.

The Hon. Chris Carter
Minister of Education
These learning materials are a legacy of the INSTEP research and development project. One of the rationales for INSTEP was to address a gap in educational research and literature about the practice and learning of inservice teacher educators (ISTEs). *Ki te Aotūroa* makes a significant contribution to filling that gap; through its proposed theory of improvement and chapters on areas of ISTE knowledge and expertise, it provides an important knowledge base that will inform and strengthen a principled approach to the professional practice and learning of teacher educators.

*Ki te Aotūroa* also offers compelling evidence of the value of adopting an inquiry approach for the development of practice. The learning cases and learning stories provide strong examples of ISTE placing themselves in challenging and risky situations in which their learning about themselves shapes their subsequent practice in meaningful ways. The participants demonstrate a deep concern about how they work with others and, in relation to self-study, a desire to seek evidence to inform change and ensure genuine professional learning. The approaches to inquiry discussed and illustrated throughout the materials will help ISTE see into practice in ways that can shape not only what is learned but also how that learning is put into action to help others.

The *Teacher Professional Learning and Development: Best Evidence Synthesis Iteration* (2007) concluded that little attention has been paid to identifying or developing the knowledge and skills ISTE require for working with teachers in ways that have positive outcomes for students. Yet the pivotal role of ISTE in assisting teachers to improve outcomes for students was very evident. The synthesis identified that the most powerful professional development for teachers involves them in an inquiry and knowledge-building cycle that starts with the identification of students’ needs, moves to develop the skills and knowledge teachers require to meet those needs, and then checks to find out if changes in teaching practice have achieved the desired outcomes. These learning materials have adapted this cycle to show the critical place of ISTE and their learning in improving outcomes for students. They will make a significant contribution to ISTE’s own inquiry and knowledge building.

*Ki te Aotūroa* also reflects the importance for ISTE of collaborative inquiry, a systematic process by which adults make meaning from their experience. When ISTE examine their practice collaboratively, they are able to challenge one another’s thinking by sharing and discussing research on effective teaching and learning, by monitoring the impact of their work, and by discussing how effective their practice is and why – all in a spirit of understanding, confidence, and competence as professionals.

It has been a pleasure and a privilege to have been involved in the INSTEP project and to have contributed to the development of these learning materials. We commend them to you as a powerful resource for increasing your capacity to adapt successfully to changes and challenges and to acquire and apply new knowledge and skills for the benefit of the school leaders, teachers, and students with whom you work.

Professor Helen Timperley, The University of Auckland
Professor John Loughran, Monash University, Australia
Dr Lorna Earl, Aporia Consulting Limited
These learning materials have been developed as part of INSTEP, a uniquely New Zealand research project on the practice and learning of inservice teacher educators (ISTEs). It is thus fitting that they should open with a whakataukī – “He tomokanga paepae he ara ki te aotūroa” – dedicated to ISTE s and alluding to their common objective of ongoing future improvement.

Like INSTEP, *Ki te Aotūroa* is cutting edge – we know of no similar publication anywhere in the world. It has been developed collaboratively as a result of ISTE s inquiring into their practice and of robust dialogue between practitioners, researchers, writers, and evaluators. The six learning cases reflect the richness and diversity of ISTE practice and learning and the need to ensure that they are underpinned by evidence and understandings from theory and research. The four areas of ISTE knowledge and expertise and the proposed theory of improvement for ISTE s provide a rich theoretical basis for ISTE s’ work, making explicit the principles and understandings upon which they can base their decisions.

*Ki te Aotūroa* will be a critical resource for new ISTE s and invaluable for the learning of experienced ISTE s and the development of the New Zealand teacher education sector. It makes frequent references to the complementary publication, the *Teacher Professional Learning and Development: Best Evidence Synthesis Iteration* (2007). Together these two core resources promote inquiry as a vital tool for ISTE s and emphasise that ISTE learning and practice must be driven by student needs and evaluated in relation to their impact on student outcomes.

We commend the Ministry of Education for its foresight in establishing a project such as INSTEP and for supporting the development of these resulting learning materials. Adopting a research and development framework over three years demonstrated an understanding that learning takes time and recognised inquiry as integral to the regular work of ISTE s. The investment acknowledged the importance of inservice teacher education as a systems lever for change and served to break down barriers between ISTE organisations within New Zealand.

Serving on the INSTEP Sector Reference Group and evaluating *Ki te Aotūroa* as it neared publication have undoubtedly benefited our own learning as well as our work in supporting groups of ISTE s in our institutions. On behalf of all those involved in INSTEP, we extend an invitation to all ISTE s and inservice teacher education providers to fully engage with these materials as part of a common commitment to ISTE professional learning that will lead to a better future for young people in Aotearoa.

Michael Absolum (Director, Evaluation Associates Limited)
Jane Barnett (Director, School Support Services, The University of Waikato)
Ian Morrison (Associate Director, Education Support Services, University of Otago)
Pam O’Connell (Manager, Professional Learning, Learning Media Limited)
Mary Sinclair (Executive Director, Cognition Consulting Limited)
“He tomokanga paepae he ara ki te aotūroa.”

Tēnei te mihi maihā ki a koutou i runga anō i ngā tīni āhuatanga o te wā. Ka rere tonu ngā mihi aroha ki a koutou ōtira ki a tātou. Nā Tuteira Pohatu ēnei kohikohinga kōrero, kohikohinga whakaaro i hōmai ki te rōpū nei.

Tuteira Pohatu generously shared the above whakataukī as a metaphor for inservice teacher education. A possible translation is “crossing a threshold that leads to a path to the future”. The whakataukī also embodies analogies of process and ritual that may show the way to personal and professional enlightenment. In the same way, inservice teacher education draws on ways of working that involve complex interactions and that may lead to empowerment as a learner and as a leader.
Introduction
He Kupu Whakapuaki

Who are these learning materials for?

These learning materials are intended for inservice teacher educators (ISTEs1): those who assist classroom teachers and school leaders in their professional learning and development. In New Zealand, ISTEs may be based in or outside schools and within English- or Māori-medium settings. They include advisers and facilitators from the seven major universities, resource teachers, facilitators from private provider organisations, and in-school leaders of professional learning.

The materials discuss generic areas of ISTE knowledge and expertise and examine what effective ISTE practice and learning look like and how they may be achieved. While the primary audience for the materials is ISTEs, others involved in inservice teacher education, such as school principals and managers of provider institutions, may also find them helpful.

Why focus on ISTE professional learning and practice?

Inservice teacher educators in New Zealand work in a complex and rapidly changing environment. Within this dynamic setting, ISTEs’ fundamental purpose remains constant: to support teachers to learn and improve their practice in ways that will lead to improved student outcomes. In doing so, ISTEs support the Ministry of Education to achieve its overarching outcome of:

*A world-leading education system that equips all New Zealanders with the knowledge, skills and values to be successful citizens in the 21st century.*

Ministry of Education, 2007

ISTEs are well aware of the central problem in New Zealand education: that while on average New Zealand students perform well by many international measures, there is a persistent pattern of underachievement for some groups of students. This concern has implications for all educators. It is an important aspect of the context in which we work, and it unites and focuses our efforts to learn and improve.

---

1 The abbreviation ISTE is used throughout the materials.
In recent years, the Ministry of Education’s Iterative Best Evidence Synthesis Programme has produced a series of publications that draw together bodies of research evidence to explain what works to improve student outcomes and why. A key finding reported in Alton-Lee’s (2003) synthesis *Quality Teaching for Diverse Students in Schooling* is that:

> what happens in classrooms through quality teaching and through the quality of the learning environment generated by the teacher and the students is the key variable in explaining up to 59% or even more of the variance in student scores.

If teaching is the greatest system influence on student outcomes, then it seems reasonable to assume that effective professional learning opportunities for teachers lead to improved student outcomes. The *Teacher Professional Learning and Development: Best Evidence Synthesis Iteration* (TPLD BES – Timperley, Wilson, Barrar, and Fung, 2007) is founded on this assumption. It explores the question “What kinds of professional learning opportunities for teachers result in an impact on student outcomes?” (page 1).

These learning materials rest on a related assumption, one that INSTEP\(^2\) examined and finally proposed as a principle: Effective ISTE practice and learning lead to improvements in teacher practice and student outcomes. Research evidence from INSTEP (Higgins, 2008) and the TPLD BES supports this principle.

Taken together, these assumptions form a “chain of influence”. This chain links effective professional learning opportunities for ISTEs to effective ISTE practice, which in turn supports ongoing teacher learning and changes in teacher practice, leading to improved student outcomes. However, in suggesting influential relationships between the work of ISTEs, teachers, and students, we must recognise the “black boxes” in the chain.

> In education, considerable effort has been directed at understanding the “black box” between acts of teaching and what students learn. There is no direct relationship between teaching inputs and student learning because how students interpret and utilise the available information determines what they learn.

> ... a second black box is ... situated between professional learning opportunities and their impact on teaching practice. Little is known about how teachers interpret the understandings and utilise the particular skills made available through professional learning opportunities, and about the consequent impact on teaching practice, except that the relationship is far from simple. How teachers change their practice, of course, impacts on student outcomes.

Timperley et al., 2007, page 7

Figure 1 illustrates this discussion.

\(^2\) See the next section ("How were these materials generated?") for a description of the INSTEP project.
Adapted from Timperley et al. (2007), page 7. Although this diagram doesn’t attempt to show it, the influence is of course not just one way; feedback and self-regulation result in learning and changes in practice for the “providers” as well as the “recipients” of learning opportunities.

These materials are intended as a resource to help ISTEs address the critical question that arises from this chain of influence: “What are the ways to learn and to improve our practice that will impact deeply on teachers’ practice and lead to improved student outcomes?”

How were these materials generated?

These learning materials were developed as part of the INSTEP (Inservice Teacher Education Practice) project, a Ministry of Education, New Zealand-wide research and development initiative about the learning and practice of ISTEs. INSTEP involved approximately 400 ISTEs and researchers from 2005 to 2008 and had three key objectives:

- to explore and develop effective approaches for the professional learning of inservice teacher educators;
- to strengthen and promote evidence-based inservice teacher education practice;
- to support professional leadership and ongoing improvement within the inservice teacher education sector.

These materials are intended to help ISTEs address the critical question “What are the ways to learn and to improve our practice that will impact deeply on teachers’ practice and lead to improved student outcomes?”

The publication Synthesis of the Outcomes of the Inservice Teacher Education Practice (INSTEP) Project reports on the research outcomes from the twelve research clusters of INSTEP and is available at http://professional-learning.tki.org.nz/informing_your_thinking
These learning materials embody both the learning from INSTEP and current national and international understandings about ISTE practice and learning. Their development was an integral part of the research and development approach of INSTEP. As a result, they were constantly critiqued by the INSTEP national team and representatives from the education sector, and during their development, they both informed and were informed by INSTEP’s research activities.

The process for developing the materials was as follows:

- The INSTEP national team drew on a needs analysis from colleagues in the field, along with relevant research and their professional experience, to develop, in early 2006, a draft conceptual framework for the professional practice of inservice teacher educators.
- Five members of the national team worked with an independent writer to “unpack” the framework, with the full national team providing regular guidance and feedback on successive drafts. A resulting draft set of materials was published in October 2006.
- A pilot learning case (Case 6 in these materials) was filmed and constructed as a website in early 2007, and the remaining five learning cases were then developed. All cases emerged from the research work of INSTEP and were selected according to agreed criteria, with subsequent development led by advisory groups.
- All the materials (including the cases) were trialled by ISTE and evaluated by a panel consisting of recognised authorities in the field and representatives from the education sector.
- The materials were extensively revised as a result of feedback from the evaluations and then published in hard copy, as a CD-ROM, and as a website.

What do these materials consist of?

As discussed above, these materials were developed during INSTEP’s research and development activities. They are by no means a definitive statement of all there is to know about effective ISTE practice and learning. Instead, they are intended as a springboard for further learning, and they are subject to improvement as the knowledge base about effective ISTE practice and learning continues to grow.

The materials model the integration of theory and practice that is so critical for ISTE learning. There are six key components, each with a different purpose as outlined in the table below and each containing internal cross-references and external links to further information.

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The national team comprised the national facilitators, the national research co-ordinator, and the Ministry of Education INSTEP project manager and senior advisor.
This chapter presents a possible theory of improvement for ISTEs. It shows the processes that are involved in achieving improvements in ISTE practice, which, in turn, lead to improvements for teachers and students.

Six learning cases provide examples of ISTEs inquiring into their practice and encourage users to examine their own beliefs and practice in relation to what they see in each case. The cases are accessed via the CD-ROM or website and include:

- evidence of practice derived from video recordings and transcripts;
- written and videoed reflections;
- perspectives on the case from experts in the field;
- reflective questions for users;
- suggestions for engaging with related literature and research.

This chapter presents an inquiry and knowledge-building cycle for ISTEs that builds on the "Teacher inquiry and knowledge-building cycle" proposed in the TPLD BES and that is consistent with the findings from INSTEP’s research activities. The chapter aims to provide practical guidance on "how" to inquire: it describes each phase of the inquiry cycle, discusses meeting the needs of diverse learners within inquiry, and outlines some of the approaches an ISTE might use while engaging in inquiry learning.

The chapters on Inquiry and Evidence-based Practice, Knowledge and Theory, Communication and Relationships, and Change for Improvement represent four generic areas of ISTE knowledge and expertise. Together they make an important contribution to what Timperley et al. (2007) refer to as "provider pedagogical content knowledge".

- Each chapter begins with a general discussion of the relevant knowledge and expertise before discussing specific implications for ISTE practice.
- Learning stories and links to the learning cases help readers to connect theory and practice and to see how different aspects of ISTE knowledge are integrated when applied in practice.
- Sidebars provide cross-references and additional information on some topics.
- Reflective questions are intended to stimulate thought and discussion.
- Each chapter ends with a suggested activity for readers.

This section presents summaries of readings that were particularly influential in the writing of these materials or in the research activities of INSTEP.

Two appendices provide summaries of thinking and research on learning theories and on professional learning communities.
How might you use these materials?

The three formats for the materials allow for a variety of uses. The hard copy is relatively portable and makes for easier engagement with longer passages of text, but it only provides summaries of the learning cases. The CD-ROM is essential for accessing the learning cases and their video clips and for activating the many hyperlinks throughout the materials (to all websites and as indicated by underlining in the printed text). At the time of publication, the website is identical to the CD-ROM; however, in time it may include a number of interactive features, such as a moderated forum and opportunities for users to share their own cases.

These learning materials should be used in a variety of ways and contexts. They are not meant to be read through or viewed in one sitting. Rather, it is envisaged that you and the communities of practice you work in will draw on particular sections while examining your beliefs and assumptions and while investigating specific questions or problems within the context of your own practice.

The materials should lead you to integrate theory and practice, both as you work with the materials and as you inquire into your own practice and learning. They should support your professional learning as ISTEs and assist you to explore and challenge your practice in ways that enable you to make your own contributions to the shared evidence base for effective ISTE practice and learning.

In making sense of the materials, you should approach them critically, adopting the inquiry-focused ways of thinking that they articulate, questioning what you read and view in light of your own knowledge and experience and, while recognising the complexity of ISTE learning and practice, always looking for evidence of effectiveness.

The principles of ISTE professional learning and practice emphasise the importance of collaborative relationships within ISTE learning (see page 25). Although, as an individual ISTE, you may make frequent and valuable use of these materials, the most significant learning will occur when you use them within communities of practice. The section below is intended to support those who agree to lead or co-ordinate such communities.

Leading ISTE learning

As in any learning context, working with these materials will engender a range of responses from users. The TPLD BES lists six possible responses to new information, ranging from rejection to substantive improvements in practice (Figure 2.3). The challenge for group leaders is to foster an environment in which group members trust and support one another and are open to change. Then in working with the materials and collaboratively inquiring into their practice, the aim is that ISTEs will “actively engage with, own and apply new theory and practice and change practice substantively” (Timperley et al., 2007, page 14).

You will need to clarify with group members:

- the purpose for working with a particular case or some other section of the materials and how this work will support their learning;
- the protocols and processes the group will use – for example, how members will deprivatise their practice;
- how the group will engage with a case or other section of the materials – for example, whether it will meet for several brief sessions or for one lengthy session.

Although, as an individual ISTE, you may make frequent and valuable use of these materials, the most significant learning will occur when you use them within communities of practice.
There are many ways to start working with these materials, but you will probably find it most profitable to begin with a learning case, especially if you or your group have not had much experience of engaging with theoretical ideas.

The following sections provide some ideas for getting started. They are organised under the main components of the materials and describe some of the features that will help ISTEs to make the best use of the materials.

A Proposed Theory of Improvement for ISTEs

This section provides a strong basis for group discussions and for ISTEs to explore what they believe underpins their learning and improvement. To begin, it may be helpful to elicit group members’ current understandings of the concept of a theory of improvement. They could then discuss their understandings of the proposed theory and perhaps analyse examples of learning and improvement from their own practice in relation to the theory. At a later date, they could read pages 159–172, which provide theoretical perspectives on developing a common theory of improvement. The reflective questions in that section may help them to explore some of these ideas and to begin to develop a theory of improvement that more accurately reflects their own beliefs about learning and change.

Learning Cases

The six learning cases are complex, and some of them are very full (for example, Cases 3 and 4). As a leader of learning, it’s vital that you know and understand a case that your group has decided to work through, so you will need to explore the case fully and to read the notes about it before the group meets.

Your group may find it helpful to begin with a brief overview of the case, in which you might highlight:

- the purpose of each screen and its relationship to the inquiry cycle for ISTEs;
- the role of transcripts, hyperlinks, and external perspectives;
- the distinction between the left- and right-hand sides of each screen and the two different kinds of questions they pose:
  - questions about the practice and learning of the participants in the case;
  - questions about users’ own practice and learning in relation to what they’ve read and seen in the case.

The format of the cases presents one possible approach for exploring the cases and linking their content to ISTEs’ own practice situations. Many other approaches are of course possible; you and your group should feel free to adapt what’s there or to adopt different approaches that better suit your circumstances. If you are not adapting the case content, you will get the most from the case if you work through it from start to finish – that is, in the order in which it’s presented.

The ISTEs in your group will bring a wide range of beliefs to the cases; there is no expectation that they will agree with the beliefs of case participants or hold the same beliefs; the important point is that they surface and acknowledge their beliefs, just as case participants have.

Conducting Inquiry

The inquiry and knowledge-building cycle that this chapter presents is key to these materials and provides the basic structure for the learning cases. Ensure that your group takes time to unpack the cycle. Any one of the questions on partnership, protection, or participation on page 51 will lead to rich and challenging discussion; so too will a close look at one of the inquiry approaches (pages 52–73) and its implications for the learning and practice of group members.
Areas of ISTE Knowledge and Expertise

The four core chapters – Inquiry and Evidence-based Practice, Knowledge and Theory, Communication and Relationships, and Change for Improvement – provide an overview of current thinking and research in these generic areas of ISTE knowledge and expertise. As each chapter covers a large body of knowledge, your group will probably find it most profitable to concentrate on a subsection that relates to the focus of its discussions. Within this, the group may find it valuable to:

- use the learning stories and links to the learning cases to make connections between theory and practice;
- respond to the reflective questions in the sidebars: these are intended to provide a catalyst for discussion, but those questions that emerge as group members read and discuss the text will be equally valuable;
- locate and read the key articles or book chapters that are referred to in the text or sidebars.

The “Implications for ISTE practice” that end each chapter challenge ISTEs to consider how they might apply the ideas discussed in the chapter and include a suggested activity in relation to these ideas.

References


A Proposed Theory of Improvement for ISTEs
Tērā Tētahi Ariā ISTE Whakapakari

What are the principles of ISTE professional learning and practice? 22
What resources can ISTEs draw on? 22
How do the principles and resources interact? 23
What might it look like when ISTEs draw on resources to enact the principles? 25
References 26

The theory of improvement below emerged from INSTEP’s research and development activities. It is a response to Elmore’s (2003) challenge for educators to develop a common theory of improvement, and it is informed in part by Sewell’s work on the theory of structure (1992). It attempts to capture what’s involved in the deep learning that leads to improved ISTE practice, which, in turn, can lead to deep learning for teachers and students. Note that the theory is not presented as conclusive or definitive; rather it is offered for ISTEs to adapt and use with the expectation that it will change and evolve as it is tested and further developed.

1 See pages 159–172.
What are the principles of ISTE professional learning and practice?

This theory of improvement proposes five principles of effective ISTE professional learning and practice:

- Effective ISTE learning and practice lead to improvements in teacher practice and student outcomes.
- Effective ISTE learning and practice are underpinned by inquiry and research evidence.
- Effective ISTE learning and practice are developed through collaborative relationships.
- Effective ISTE learning and practice are influenced by and responsive to context and culture.
- Effective ISTE learning and practice provide and build leadership in a range of contexts.

These principles evolved from the work of INSTEP and its inquiry into ISTE learning and practice within a variety of contexts and cultural settings. They remain subject to modification as ISTEs continue to build and share their knowledge about how to promote teacher learning in ways that will improve outcomes for the diverse students in New Zealand classrooms.

What resources can ISTEs draw on?

ISTEs draw on a wide range of resources. One way to think of these resources is to consider three categories:

- resources that are intangible and located within ourselves – what we draw on to make sense of the world and to communicate and build collaborative relationships with others;
- resources that are intangible but external to ourselves and derived from others;
- resources that are artefacts – concrete objects that often make tangible the first two categories and that enable us to negotiate and make meaning of new ideas.

Examples of what might be found in these categories are shown in the table below:

<table>
<thead>
<tr>
<th>Self</th>
<th>Others</th>
<th>Artefacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>• assumptions, values, and beliefs</td>
<td>• established theories</td>
<td>• this resource, <em>Ki te Aotūroa</em></td>
</tr>
<tr>
<td>• existing relationships</td>
<td>• current government policies, priorities, and strategies</td>
<td>• frameworks [e.g., for analysis]</td>
</tr>
<tr>
<td>• personal theories of practice</td>
<td>• current educational thinking and understanding</td>
<td>• tools [e.g., for assessment]</td>
</tr>
<tr>
<td>• prior knowledge and experience</td>
<td>• agreed protocols and ways of working</td>
<td>• evidence from practice [e.g., transcripts, student data]</td>
</tr>
<tr>
<td>• professional expertise</td>
<td>• colleagues’ perspectives</td>
<td>• professional literature</td>
</tr>
<tr>
<td>• responsiveness to different sociocultural contexts</td>
<td>• expertise and guidance from coaches, mentors, or critical friends</td>
<td>• research reports [e.g., BES publications]</td>
</tr>
<tr>
<td>• professional identity</td>
<td></td>
<td>• educational materials [e.g., curriculum statements, handbooks]</td>
</tr>
<tr>
<td>• sense of self-efficacy</td>
<td></td>
<td>• planning documents</td>
</tr>
</tbody>
</table>
How do the principles and resources interact?

Figure 2 shows the principles that guide effective ISTE learning and practice and the resources that enable ISTE to achieve their goals. The red arrows represent the interactions that occur with the principles and resources during ISTEs’ learning and within the moment-by-moment decision making of their everyday practice.

ISTEs are active agents in their learning. They use their knowledge of the principles to make the best use of the resources available to them, and they use these resources to enact the principles within their practice. This involves ISTEs, both collectively and individually, continually making sense of and building coherence between the principles and resources. It also involves self-regulation, as ISTEs monitor the impact of their learning and practice on teachers and students and adjust their practice accordingly. As a result of this sense making and self-regulation, ISTEs may adapt or reframe the principles and resources.

Figure 2 also reminds us of the “black box” – the cognitive interpretations and utilisation by ISTEs that we cannot see – between learning opportunities for ISTEs and the resulting impact on their practice. The complete middle column of the diagram represents the chain of influence discussed earlier (page 15). It shows, in a generic sense, that the desired outcome for ISTE learning and practice must always be that of improving student outcomes.

**ISTEs are active agents in their learning. They use their knowledge of the principles to make the best use of the resources available to them, and they use these resources to enact the principles within their practice.**
Figure 2: A proposed theory of improvement for ISTEs

**Principles**

- Effective ISTE learning and practice lead to improvements in teacher practice and student outcomes.
- Effective ISTE learning and practice are underpinned by inquiry and research evidence.
- Effective ISTE learning and practice are developed through collaborative relationships.
- Effective ISTE learning and practice are influenced by and responsive to context and culture.
- Effective ISTE learning and practice provide and build leadership in a range of contexts.

**Professional learning opportunities for ISTEs**

The learner’s interpretation and utilisation of available understandings and skills

**Improved ISTE practice**

**Self-regulation**

**Professional learning opportunities for teachers**

**Improved teacher practice**

**Learning opportunities for students**

**Improved student outcomes**

**Resources**

**Self**

- assumptions, values, and beliefs
- existing relationships
- personal theories of practice
- etc.

**Others**

- established theories
- current government policies, priorities, and strategies
- current educational thinking and understanding
- etc.

**Artefacts**

- this resource, *Ki te Aotūroa*
- frameworks (e.g., for analysis)
- tools (e.g., for assessment)
- evidence from practice (e.g., transcripts, student data)
- etc.
What might it look like when ISTE s draw on resources to enact the principles?

The table below gives examples of what we might see when the principles are enacted in ISTE learning and practice. Note that the examples are not comprehensive and that many of them could illustrate the enactment of more than one principle.

<table>
<thead>
<tr>
<th>Principles</th>
<th>Examples of enactment</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective ISTE learning and practice lead to improvements in teacher practice and student outcomes.</td>
<td>ISTE s' decisions about their learning and practice are informed by teachers' and students' learning needs.</td>
<td>Self</td>
</tr>
<tr>
<td></td>
<td>ISTE s have high expectations for improvements in teacher practice and student outcomes.</td>
<td>Others</td>
</tr>
<tr>
<td></td>
<td>ISTE s take a broad view of student outcomes, considering social, emotional, physical, and cognitive outcomes.</td>
<td>Artefacts</td>
</tr>
<tr>
<td></td>
<td>ISTE s build connections between big ideas about school improvement and actual practice at all levels.</td>
<td></td>
</tr>
<tr>
<td>Effective ISTE learning and practice are underpinned by inquiry and research evidence.</td>
<td>ISTE s' professional learning is centred on questions and dilemmas within their practice.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s draw on multiple sources of evidence for decision making.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s examine the values, beliefs, and theories that underpin their everyday practice.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s recognise that ambiguity is inherent in complex practice.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s' professional learning is challenged and informed by explicit theories of learning and practice.</td>
<td></td>
</tr>
<tr>
<td>Effective ISTE learning and practice are developed through collaborative relationships.</td>
<td>ISTE s participate in and foster the development of professional learning communities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s build collaborative relationships using explicit professional norms.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s draw on diversity within a group to optimise learning.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s are involved in a range of learning relationships (e.g., coach, critical friend) and activities (e.g., peer observation, group discussions).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s share responsibility for making sense of dilemmas and questions arising from practice.</td>
<td></td>
</tr>
<tr>
<td>Effective ISTE learning and practice are influenced by and responsive to context and culture.</td>
<td>ISTE s bring and recognise multiple perspectives within diverse contexts.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s work in different ways and at multiple levels (classroom, school, institutional, regional, national).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s develop and use tools appropriate to particular contexts and cultures.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s tailor their support to schools' changing needs as schools progress through improvement cycles.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s apply a range of lenses to the ongoing evaluation of their own practice.</td>
<td></td>
</tr>
<tr>
<td>Effective ISTE learning and practice provide and build leadership in a range of contexts.</td>
<td>ISTE s support school leaders to establish and maintain cultures of inquiry based on the use of evidence.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s enable others to make sense of their practice.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s enable others (e.g., in-school leaders) to lead professional learning.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTE s foster joint inquiry between different communities of practice.</td>
<td></td>
</tr>
</tbody>
</table>

ISTEs bring and recognise multiple perspectives within diverse contexts.
References


Users will get the most out of the cases by working through them with colleagues and other educators.

The six learning cases provide examples of ISTEs inquiring into their practice and encourage users to examine their own knowledge, beliefs, and practice in relation to what they see in each case. Users will get the most out of the cases by working through them with colleagues and other educators.

Each case:
- allows users to observe and discuss ISTEs who are focusing on specific aspects of their learning and practice (via the left-hand side of the screen);
- provides a basic structure that supports users to inquire into their own practice in relation to the focus of the case (via the right-hand side of the screen);
- makes links to current thinking and research in relation to the case (via hyperlinks).

The cases are not intended to demonstrate exemplary practice. Rather they show ISTEs and teachers grappling with new learning as they inquire into how they work and the impact of that work. The cases represent a moment in time, with an expectation that the case participants will continue to learn and improve their practice.
The cases are intended to stimulate learning for users of the materials – that is, to spark discussion, to encourage further reading and, ultimately, to lead users to inquire into their own practice. Users will approach the cases in a variety of ways. For example, at times their focus might be on analysing and discussing the content of the case (the left-hand side of the screen), and at other times their primary goal might be to use the case as a springboard for their own inquiry (the right-hand side of the screen).

**Structure of the cases**

The cases have been designed on the understanding that learning cases are most effective when they:
- reflect authentic practice situations;
- present a question or problem of practice to be explored;
- provide multiple perspectives on that question and the responses to it;
- juxtapose theory and practice (Harris et al., 2005).

Each of the cases follows the same basic structure. This structure links closely to the inquiry and knowledge-building cycle on page 44, particularly those phases of the cycle in which an ISTE is actively examining their own practice.

**Screen 1** introduces the key themes and participants in the case and gives important background information.

**Screen 2** identifies the learning needs and inquiry question of the ISTE featured in the case and prompts users to consider how the inquiry question relates to their own practice.

**Screen 3** explores the beliefs of case participants and asks users to think about their own beliefs in relation to the theme of the case.

**Screen 4** presents the learning experiences that the ISTE engaged in as part of their inquiry, and it prompts users to reflect on the learning experiences that they and those they work with engage in.

**Screen 5** considers what the ISTE’s learning has been and how it is impacting on their practice, and it invites users to initiate an inquiry into their own practice.

Common components within the cases are:
- **transcripts**, which are provided for all video clips. These provide an important basis for discussing the cases and for group members to support their views with evidence of what case participants have actually said. Users will not always need to read the transcripts of interviews with case participants, but they will find it invaluable to examine the transcripts of interactions that show ISTE practice (as in Cases 3, 4, and 6), as these provide the fundamental material for analysing the practice.
- **hyperlinks** to current thinking and research, particularly within the right-hand sides of screens 3 (Beliefs) and 4 (Learning experiences). These links are often to other sections of the learning materials, so users may wish to have the hard copy of the materials on hand while viewing a case. Note that when an external web link is indicated, this will only be activated if you have online access.
- **external perspectives** from recognised experts in teacher education, who give their thoughts on the cases and the theoretical ideas underpinning them. Sometimes these are presented as annotations of transcripts from the cases – for example, when the video is of a conversation or role play. This approach provides a strong model of supporting statements and discussions about an interaction with evidence from the actual interaction. At other times, the perspective is of a more general nature.

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4 Note that in some of the learning cases, the term “problem of practice” is used. This is not meant to imply that the ISTE “has a problem”. Rather it represents a view within reflective practice of a problem as a “curious, interesting, or puzzling situation that causes a reconsideration” (John Loughran, Case 6). It also links to the idea within problem-based methodology that, in teachers’ or ISTEs’ everyday practice, the hundreds of decisions they routinely make represent solutions to problems (Robinson and Lai, 2006). Looking at practice in this way helps teachers or ISTEs to surface the assumptions underlying their decisions and can lead to improved practice.
• **reflective questions**, which encourage users to:
  – think about the practice and learning of the participants in the case;
  – think about their own practice and learning in relation to what they’ve read and seen.

**Overview of the cases**

**Case 1: Dissonance as a Catalyst for Improvement / Ngā Tukitukinga hei Whakapakaritanga**

The focus of this case is supporting teachers to improve their practice by modelling ways of working that:

- “walk the talk” (that is, that align with the content of the professional development);
- use dissonance as a catalyst for improving practice;
- support in-depth, self-directed change for teachers;
- are based on the appropriate use of evidence and data.

Delwynne Stevenson, a facilitator at Team Solutions, Auckland, was concerned that her usual practice was not having the impact she was hoping for, and so she inquired into how she could better support teachers to achieve substantive and sustained improvements to their practice. The context of Delwynne’s inquiry was her literacy work with teachers from Waiharara School in Northland, and she conducted her inquiry in collaboration with her colleagues at Team Solutions.

**Leading ISTE learning for this case**

This case describes the growing understandings of an ISTE and the two teachers she is working with from a small rural school. One of its strengths is that everyone in the case recognises that they are learners, that they are “in this together”: we clearly see concurrent and interdependent development in the ISTE’s and teachers’ practice over a sustained period of time.

This kind of collaborative inquiry and learning may well be mirrored by the experiences of ISTEs in the group you are leading, both as they open up their practice to one another and as they work with teachers to improve outcomes for students.

In the experiences of Delwynne and the teachers, we recognise how valuable dissonance can be as a catalyst for improvement. The case has the potential to also raise dissonance for your group of ISTEs and to motivate them to inquire into their practice. This could be in terms of the overall themes of the case – for example, as ISTEs ask themselves, “To what extent do I foster self-efficacy in the teachers and students I work with?” Or it could occur in relation to specific details from the case – for example, when, on the last screen (“Learning and impact”) of the case, users are encouraged to compare two apparently irreconcilable views on the value of modelling.

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*This case has the potential to raise dissonance for ISTEs and to motivate them to inquire into their practice.*
How Case 1 reflects the ISTE inquiry and knowledge-building cycle (page 44)

Students’ achievement data has improved, and there are “smiles all round” from them.

Kathy and Geraldine identify as learners along with their students. They are better at using evidence to respond promptly to students’ needs.

Delwynne is now more critically reflective herself and is better at using evidence and dissonance to enable critical reflection in others.

Delwynne engaged in collaborative critical reflection with her colleagues: with them, she read professional literature and viewed videos of practice.

Delwynne believed that for professional learning to be sustainable, it should promote self-efficacy in students and teachers. However, her work wasn’t achieving this. So her inquiry question addressed her need to critically reflect on the impact of her daily practice.

Kathy and Geraldine wanted to improve their pedagogical content knowledge in relation to writing.

Kathy and Geraldine identified as learners along with their students. They are better at using evidence to respond promptly to students’ needs.

ISTE learning needs

Inquiry question

Beliefs and assumptions

Delwynne believed that for professional learning to be sustainable, it should promote self-efficacy in students and teachers. However, her work wasn’t achieving this. So her inquiry question addressed her need to critically reflect on the impact of her daily practice.

Learning experiences

Delwynne engaged in collaborative critical reflection with her colleagues: with them, she read professional literature and viewed videos of practice.

Impact for students

Impact for teachers/school leaders

ISTE practice changes

Learning needs of teachers/school leaders

IASTE learning needs
Case 2: Becoming a Pedagogical Leader / Te Tū hei Pouako

The focus of this case is pedagogical leadership as a critical component of ISTE's practice. ISTE is often deep content knowledge in a particular learning area but find it challenging to support colleagues or teachers to develop more effective, responsive teaching in that area. Pedagogical leadership (also sometimes called “instructional leadership”) can be a particular challenge for leaders of professional learning in schools, such as literacy leaders or heads of departments. For them and other ISTE, there can be pressure to provide a “quick fix” when the real need is to build knowledge of content and of how to teach that content in response to identified student needs.

Joanna Helby is literacy leader at Wakatipu High School in Queenstown. With strong support from the school’s leaders and from Trevor McDonald, an educational consultant, Jo has been working to build her confidence and capabilities as a pedagogical leader.

Leading ISTE learning for this case

As in Case 1, one of the strengths of this case is that it shows an ISTE’s learning over time and in a range of contexts. It provides a “big picture” of the inquiry by an in-school ISTE leader of professional learning experiences and so doesn’t explore individual practice situations closely in the way that Cases 3, 4, or 6 do.

There are a number of points in the case where comparisons with what’s happening in some of the other learning cases will generate rich discussions. These include:

- **screen 3 (Beliefs),** where questions on relationships within pedagogical leadership and the balance between providing support and challenge link well to the themes of **Case 6.**
- **screen 4 (Learning experiences),** where Trevor’s comments on the fundamental importance of modelling to his ways of working make for an interesting comparison with the **views of Delwynne Stevenson** in Case 1;
- **screen 4 (Learning experiences),** where users are asked to think about how they work with others in relation to the roles of coach, mentor, and critical friend, allowing for interesting comparisons between the thinking of Trevor and Jo and **Barbara Batchelor** in Case 6.

One of the strengths of this case is that it shows an ISTE’s learning over time and in a range of contexts.
An analysis of NCEA results showed the need to improve students’ literacy skills.

Jo believed that she could achieve more productive relationships with her colleagues by increasing her own knowledge and through modelling and the use of evidence. Her inquiry question addressed her desire to build her capability as a pedagogical leader.

Leslie is incorporating strategies in her programme to address the literacy needs of her junior art students.

Jo read and discussed professional literature, she asked Trevor to act as a coach for her, and she observed and practised modelling.

Teachers (e.g., Leslie for visual arts) needed to improve their understandings of adolescent literacy and of literacy across the curriculum.

Students have greater self-efficacy as they can see what they need to do to succeed in NCEA.

Jo has developed her ability to work collaboratively with teachers in order to support them to meet specific student needs.

Impact for students

Impact for teachers/school leaders

Learning needs of teachers/school leaders

ISTE learning needs

Inquiry question

Beliefs and assumptions

Students’ learning needs

Learning experiences

ISTE practice changes
Case 3: Effective Communication within Learning Interactions / Te Kōrero Whai Hua i roto i ngā Akoranga

The focus of this case is improving communication and engagement for ISTEs within their professional interactions. In challenging situations, it is often very difficult for participants to say what they are thinking. But without this degree of honesty, there may be no common understanding to build on, and learning and improvement may be limited.

Catherine Hope is a facilitator with Evaluation Associates. This case focuses on her work with Jack, a teacher at an Auckland school engaged in professional development on assessment for learning. Catherine felt that Jack was not engaged in the professional development and had taken a defensive stance in a post-observation conversation. She and her colleagues, Allan Powell and Michael Absolum, use role play and analysis of dialogue as tools to reveal the interpersonal model informing and guiding the interaction and to shape and practise a more effective model and approach.

Leading ISTE learning for this case

This is a very rich case, with a large number of practice conversations and analyses to discuss. A group could easily spend two half-day sessions on this case. In a single session, after working through the first three screens, you will need to select and concentrate on one, or perhaps two, of the three moments that are analysed in screen 4 (Learning experiences).

The questions below each clip on screen 4 should generate diverse responses, so it will be valuable to prompt group members to support their arguments with evidence from the transcripts. Having considered their own responses to the questions, group members will be interested to hear the thoughts of the case participants, which in most instances are presented in the following clip.

For the question on how Catherine might cue herself that accompanies the final clip under Moment 3, you could discuss how she might:

- identify and watch out for tell-tale behaviours, such as pushing on regardless or switching to “persuasive mode”;
- plan and rehearse strategies to adapt when she notices these tell-tale behaviours, such as consciously presenting one argument at a time and checking with the other participant[s] in the interaction after each one.

This is a very rich case, with a large number of practice conversations and analyses to discuss.
Catherine’s classroom observations showed that the students could take greater control of their learning. Catherine believed that adhering to Model II principles of communication would enable her to communicate openly with teachers and engage them in professional learning. Her inquiry question addressed her concern that her practice was not always consistent with her beliefs.

The case does not record the impact for Jack or other teachers.

The case does not record the impact for students.

Catherine has a better understanding of her own actions within learning conversations and of how these can undermine her intentions. She has new strategies for difficult interactions that she will try out in her next conversation with Jack.

Catherine and her colleagues used role play and analysis of dialogue to understand her behaviour and to plan and practise more effective responses within difficult interactions.

Jack seemed resistant to professional development and unaware of the value of encouraging student self-regulation.

Catherine seemed resistant to professional development and unaware of the value of encouraging student self-regulation.
Case 4: Supporting Teachers to Be Self-regulatory / Te Tautoko i nga Kaiako kia

The focus of this case is supporting teachers to be self-regulatory learners – that is, to notice and act on the impact of their practice on their students’ learning. In particular, it explores:

- the use of observed practice and feedback as an activity for professional learning;
- the process and impact of learning conversations;
- the application of theory to practice in order to improve outcomes for students.

Melanie Winthrop is a facilitator for the Literacy Professional Development Project (LPDP). This case provides some insight into the theory about practice analysis that she and her colleagues have been developing. Melanie observes a writing lesson by teacher Glenda Stewart at Rata Street School, and she and Glenda meet to discuss the lesson at the end of the day.

Leading ISTE learning for this case

In this case, users are able to observe an ISTE at work with a teacher. Melanie supports Glenda to notice the impact of her classroom practice on student learning and to build her knowledge of literacy theory in ways that will enable her to improve her practice. At the same time, Melanie herself is intent on improving her practice as an ISTE, by applying the theory of practice analysis she has developed with her colleagues and finding ways to identify the impact of her conversation with Glenda.

The starting point for Melanie’s inquiry may well mirror what many ISTEs in your group have experienced. Observing classroom practice and giving feedback on it is common practice for ISTEs, but this approach often seems to make little difference to actual student achievement. This is why the theory of practice analysis shown on screen 3 (Beliefs) emphasised the importance of evaluating the impact of learning conversations. As your group works through the case, it may be helpful to keep before you the theory of practice analysis and to discuss how what happens in the case relates to the theory – for example, how each video clip from Melanie and Glenda’s conversation on screen 4 (Learning experiences) links to particular aspects of the theory.

This case could also be used to link to ideas explored in some of the other cases. For example:

- Glenda and Melanie are exploring the impact of teacher modelling on classroom learning. Modelling as a teaching strategy is also explored in Case 2, which shows ISTE modelling for teachers;
- Screen 4 (Learning experiences) prompts you to consider to what extent you work with colleagues to examine and improve one another’s practice. It may be interesting to compare how Gillian Tasker supports her colleague Barbara in Case 6 to examine her practice and better align it with her espoused theory;
- a strong feature of both this case and Case 1 is the way in which they explicitly link an ISTE’s inquiry with teacher practice and student learning.

In this case, users are able to observe an ISTE at work with a teacher.
Students’ learning needs

Data showed that the students needed to learn how to enrich the content of their writing to better engage readers.

Glenda needed to be more explicit in her modelling and to move towards more self-regulatory practice.

Learning needs of teachers/school leaders

ISTE learning needs

Inquiry question

Beliefs and assumptions

Melanie believed that her practice should support teachers to be more self-regulatory and to integrate theory with practice. Her inquiry focused on how her learning conversations with teachers could enable this shift.

Learning experiences

Melanie based her post-observation conversation with Glenda on the theory of practice analysis she and her colleagues had developed.

Melanie is determined to now look at the impact of her conversations. She believes that her new approach is more likely to promote teacher self-regulation.

Danny provides an example of the improvements in the students’ writing.

Impact for students

Impact for teachers/school leaders

Glenda is consciously linking to students’ successful prior learning, and she is more conscious of the need to monitor the impact of her practice.
E nga uauatanga tērā ka hua ake i ngā kaupapa Māori i roto i ngā kawenga ngaio, i roto anō i ngā kōrerorero ngaio i waenga i ngā hoamahi rangatahi me ngā hoamahi taipakeke. He wāhine katoa ēnei i uru mai ki te uuiinga nei, tae atu ki ngā kaiwhakaputanga whakaaro, engari ka hāngai tonu ngā pātai me ngā whakawhiti whakairo ki ērā ka puta ake mēnā he tāne kē ngā hoamahi i te tauira.

He nui ngā kōrerorero i te tauira mā ērā e mahi i waho o ngā akomanga reo Māori. Koinei hoki te inoi a tētahi o ngā wāhine i whai wāhi mai ngā uauatanga ngaio, me ngā kōrerorero ngaio i waenga i ngā hoamahi rangatahi me ngā hoamahi taipakeke. He wāhine katoa ēnei i uru mai ki te uiuinga nei, tae atu ki ngā kaiwhakaputanga whakaaro, engari ka hāngai tonu ngā pātai me ngā whakawhiti whakairo ki ērā ka puta ake mēnā he tāne kē ngā hoamahi i te tauira.

Kei a ia ēnei kai o te ao Māori, ākene pe a kei reira he painga mō te ao Pākehā. I a 37

**Ngā korero o tēnei tauira**

I te mātakitaki a Leeana Herewini, he kaitohutohu Māori i Te Whare Wānanga o Waikato, i tētahi hoamahi pakeke ake, i a Wini Emery, e whakahaere ana i tētahi hui whakakapakari pouako. I āhua āwangawanga ia i te whakautu a Wini ki te pātai a tētahi pouako, engari me te kore tonu e mōhio me pēhea tāna whakaara ake i tāna āwangawanga. Ko tāna pātai ki a ia anō, “Ka pēnei anō taku kōrero kē tōku kuia?”

Kei ngā tānga o ngā kupu kōrero te whakapākehātanga o ngā kōrerorero i whai wāhi mai, i noitia kia whakautu ngā pātai me ngā whakawhiti kōrero, ngā pātai me ngā whakawhiti whakairo, kāore ngā tāne i tāmaiti ake, ko ngā wāhine ngā mea tamariki ake, ko ngā wāhine ngā mea pakeke ake, ko ngā wāhine ngā mea tamariki ake, ko ngā wāhine ngā mea tamariki ake, ko ngā wāhine ngā mea pakeke ake, ko ngā wāhine ngā mea tamariki ake, ko ngā wāhine ngā mea tamariki ake, ko ngā wāhine ngā mea tamariki ake, ko ngā wāhine ngā mea tamariki ake.
He aha ngā hiahia ako o ngā ākonga?

Kāore a Leeana i mōhio me pēhea te whakapuaki i tana āwangawanga ki te hunga pakeke, tae atu ki a Wini, mēnā ka puta i runga i te ngākau māhorahora, i te ngākau pono, i te ngākau pai.

Kua mōhio a Leeana e tika ana anō kia whakapuaki ia i ōna whakaaro, i āna whakatikatika ki te hunga pakeke, tae atu ki a Wini, mēnā ka puta i runga i te ngākau māhorahora, i te ngākau pono, i te ngākau pai.

He aha ngā hiahia ako o ngā ākonga Māori.

Me pakari ake ngā pūkenga me ngā mātauranga pāngarau o ngā ākonga Māori.

He aha ngā hiahia ako o ngā pouako/kaiārahi kura?

E whai ana ngā pouako i haere ki te hui a Wini kia pai ake, kia tōtika ake tā rātou whakaako i te pāngarau ki te reo Māori.

He aha ngā pānga o ēnei kawenga hou ki ngā pouako/kaiārahi kura?

Kua mōhio a Leeana e tika ana anō kia whakapuaki ia i ōna whakaaro, i āna whakatikatika ki te hunga pakeke, tae atu ki a Wini, mēnā ka puta i runga i te ngākau māhorahora, i te ngākau pono, i te ngākau pai.

Te whakarite me te uru atu ki ngā wheako ako he i he whakautu i te pātai rangahau

He aha ngā mea e hiahia ana tātou kia ākona e tātou?

He aha tā tātou pātai rangahau?

He aha ē tātou whakapono, ā tātou whakapae mō tā tātou pātai rangahau?

He aha ngā mea e hiahia ana tātou kia ākona e tātou?

Kāore a Leeana i mōhio me pēhea te whakapuaki i tana āwangawanga ki te āhua o te aro atu a Wini ki te pātai a tētahi o ngā pouako. Ko tana hiahia, kia ū āna mahei tahi ki ngā pouako me ngā hoamahi ki ōna whakapono Māori me ngā tikanga Māori, ki ōna whakapono ngaio anō e noho ai ko ngā hiahia o ngā ākonga te mea nui.
This case focuses on the challenges that kaupapa Māori can present within professional practice and, in particular, within professional discussions between younger and older colleagues. The participants and commentators are all female, but the questions and discussions could apply just as much to situations involving older and younger male colleagues.

This case has much to offer those working outside Māori-medium settings, as reflected in this invitation from one of the participants: “Here is another way, one that is good for the Māori world and that also benefits the Pākehā world. Look, come on, sit with me, this is what we Māori have to offer, and perhaps you will see there are benefits for Pākehā too.”

Leeana Herewini, an adviser: Māori at the University of Waikato, observed an older colleague, Wini Emery, facilitating a workshop with teachers. She was disturbed by Wini’s response to a question from a teacher, but didn’t know how to raise this concern, asking herself “Would I say this to my kuia?”

**Leading ISTE learning for this case**

The heart of this case lies in the video clips, in which three pakeke (older colleagues) and three rangatahi (younger colleagues) respond to a series of questions in relation to the case topic outlined above. As we follow the discussions, we hear a variety of ideas and opinions that subtly but powerfully throw light on the case and the themes that underpin it. Regardless of whether you and your group understand te reo, it will add greatly to your experience and appreciation of the case if you watch the video clips.

For group members who do not speak te reo, full translations of the clips’ contents are provided in the transcripts, and there is an English-language version of the case. Although the case focuses on kaupapa Māori within ISTE’s professional practice, your group of ISTE’s may well have experienced other situations that present a similar dilemma and that many of the questions posed in the case could apply to – for example, within a Pākehā context in which a less experienced ISTE is hesitant to speak their mind to a manager or leader.

The mihi at the opening of the case introduce us to the participants, who are called upon to respond to some frank and challenging questions. There is a sense that they are talking and responding to one another as well as communicating with the viewer. The focus of their discussions is very much professional relationships, and this is reflected in the respect and care the participants show one another as they explore educational issues within kaupapa Māori.

The introductory screen of the case makes the point that its questions and discussions could apply just as much to situations involving older and younger male colleagues. Note, however, that they would not apply to Māori-medium contexts involving older males and younger females, or vice versa.

Note also that some of the readings listed under “Engaging with the literature” in screen 3 (Beliefs) and screen 4 (Addressing the inquiry question) are substantial – for example, the 2007 Te Kōtahitanga report or the discussion document by Charles Royal. Your group will need to select relevant sections from them on which to focus their discussions.

*This case has much to offer those working outside Māori-medium settings.*
How Case 5 reflects the ISTE inquiry and knowledge-building cycle (page 44)

The case does not record the impact for students.

**Impact for students**

**Students’ learning needs**

Māori students needed to enhance their pāngarau skills and knowledge.

**Learning needs of teachers/school leaders**

Teachers attending a workshop led by Wini were seeking greater expertise in Māori-medium pāngarau pedagogy.

**ISTE learning needs**

Inquiry question

Beliefs and assumptions

Leeana was unsure how to express her concern about Wini’s response to a question from a teacher. She wanted to ensure that her interactions with teachers and colleagues were true to her beliefs both as a Māori who is deeply respectful of kaupapa Māori and as a professional for whom students’ needs are paramount.

**Impact for teachers/school leaders**

The participants’ comments show that teachers recognise they face similar dilemmas.

**ISTE practice changes**

It has become clear to Leeana that she can and should offer challenging feedback to pakeke, including Wini, provided she does so in a way that is open, honest, and respectful.

**Learning experiences**

Leeana reflected personally during and after discussions by pakeke and rangatahi.

**Impact for students**

The case does not record the impact for students.
Case 6: Being a Critical Friend / Te Tū hei Hoa Arotake

The focus of this case is reflection on a problem of practice with a critical friend. In exploring the role of a critical friend, it also examines:

- the relationship between support and challenge within change for improvement;
- the links between beliefs and values and professional actions, that is, between espoused theory and theory-in-use.

Barbara Batchelor is a health education adviser based at the University of Canterbury. This case focuses on her inquiry into how to improve her practice as a critical friend for a resource teacher, Fran. She reflects on her practice with a longstanding colleague, Gillian Tasker, who is herself in role as a critical friend for Barbara.

Leading ISTE learning for this case

In this case (as in Cases 3 and 4), users are able to observe actual ISTE practice, in this instance an experienced facilitator, Gillian, acting as a critical friend to a colleague, Barbara. Although users view and analyse Gillian’s practice, they also think about Barbara’s learning, and it is Barbara’s inquiry that the case follows. You will need to make clear to your group this multilevel aspect of the case, in which Barbara inquires into her strengths as a critical friend by using a critical friend.

For the questions on the left-hand side of screen 4 (Learning experiences), you could discuss:

- Gillian’s in-depth questioning for clarification, her paraphrasing, and her challenging of Barbara’s assumptions;
- Barbara seeing that she provides answers for Fran, which she acknowledges is not what she believes she should be doing.

For the questions on the left-hand side of screen 5 (Learning and impact), you could discuss:

- how Barbara has a deepened understanding of the role of a critical friend: she is able to articulate what a critical friend is and what she can do in the role. She is also able to identify the influences that have contributed to her learning: readings, Gillian’s modelling, and her learning community;
- how Barbara now understands she doesn’t need to wait to challenge, that it’s part of the relationship building. She also signals planned improvements in her practice: negotiating roles, deeper level questioning, making readings more relevant to others’ practice when working with others, and ensuring a deeper connection between personal theory and practice;
- the evidence that Barbara and Fran could collect, such as feedback from those observing or experiencing their practice, videos capturing their practice over time, and artefacts such as question sheets and student work. You could also discuss how they might go about analysing and interpreting this evidence.
References


Two established ways of thinking about inquiry are recognised and embedded in these learning materials: inquiry as a "way of being", and inquiry as a series of learning cycles. The chapter on Inquiry and Evidence-based Practice describes some of the theoretical understandings that underpin inquiry as a way of being. This chapter is focused more on the practical aspects of inquiry. It begins by presenting an inquiry and knowledge-building cycle for ISTE learning and by looking in detail at each phase of the cycle. It then discusses some of the approaches an ISTE might use while engaging in inquiry learning.
The text makes connections to the learning cases. Taken as a whole, the cases illustrate the complexity of ISTE practice and the need for time and multiple opportunities to learn if deep learning is to be achieved. Individually, most cases illustrate one or two phases of the cycle and a few of the approaches that are possible.

An inquiry and knowledge-building cycle for ISTE learning

Figure 3 below presents a cycle for ISTE learning. The cycle builds on the "Teacher inquiry and knowledge-building cycle" proposed in the Teacher Professional Learning and Development: Best Evidence Synthesis Iteration (TPLD BES – Timperley, Wilson, Barrar, and Fung, 2007) and is consistent with the findings that have emerged from INSTEP’s research activity. The word “cycle” reflects the iterative and systematic nature of inquiry. However, we know that in reality, inquiry is a complex and often challenging experience. At times, inquirers will revisit previous phases in an inquiry. New knowledge may emerge slowly over time or suddenly become clear in a flash of insight. And within each phase of an inquiry, people will use a variety of approaches to inquire into their theories of practice7 and the impact of those theories on others.

Figure 3: An Inquiry and Knowledge-building Cycle for Inservice Teacher Educators

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7 These are an educator’s beliefs, values, and theories about effective practice; the associated knowledge, skills, and practices; and the outcomes he or she hopes to achieve. See pages 106 and 133–136 for further discussion.
One of the principles in the proposed ISTE theory of improvement is that “effective ISTE learning and practice lead to improvements in teacher practice and student outcomes” [see page 22]. The principles also suggest the need for ISTEs to link practice to evidence, to centre learning on questions and dilemmas within their practice, and to view effective learning as a collaborative undertaking. These ideas have the following implications for inquiry-based learning:

- **ISTEs’ learning goals should always be grounded in their goals for teacher and, ultimately, student learning.**
- **The ongoing analysis of student and teacher learning needs should allow ISTEs to answer the three questions that enable them to regulate their own learning: “Where am I going?”, “How am I doing?”, and “Where to next?” (Hattie, 2005).**
- **ISTEs’ learning should be constructed in collaboration with others in a range of professional communities of practice, enabling them to benefit from the support, challenge, and knowledge of others who share their vision and are working towards similar outcomes.**
- **It is important to surface and discuss people’s beliefs and assumptions at each phase of the cycle, working towards the construction of more effective theories of practice.**
- **ISTEs should be deliberate in the way they plan learning in an inquiry cycle yet flexible in its enactment, remaining responsive to their changing needs, priorities, and concerns and those of the people with whom they work.**
- **ISTE inquiry should be connected and evidence-based. At each phase, ISTEs should look back to what they learned in previous phases and look forward to how they will monitor the impact of their learning.**
- **ISTE inquiry should be iterative. Each time ISTEs engage with the inquiry cycle, they become more skilled at evidence-based practice, they build their professional knowledge, and their inquiry becomes deeper and more focused.**

Consider the ways in which you inquire into aspects of your practice. Working with one or more other ISTEs, look at the above implications and discuss the degree of alignment between them and your approach to inquiry.
The text below describes the phases of the ISTE inquiry and knowledge-building cycle. Before reading about them, it’s important to note the following points:

- The suggested questions for each phase are not exclusive: other questions may be important.
- Throughout inquiry, there are three key considerations. Inquirers must:
  - decide how to gather appropriate data;
  - decide how to critically analyse that data;
  - select a collaborative process and activities to scaffold the learning. (See pages 52–73.)
- Although they are not shown here, teacher and student inquiry cycles occur alongside the ISTE cycle.

**What are the students’ learning needs?**

The fundamental purpose of ISTE professional learning is to promote successful student learning. Therefore, although ISTEs’ practice can be a step or two removed from direct teaching of students, it must always be explicitly linked to desired student outcomes.

At the beginning of an inquiry cycle, ISTEs will generally support teachers/school leaders to identify an area of concern. This concern can arise for many reasons – analysis of student achievement data, information gleaned from discussions with students, new learning initiatives, a challenging conversation, or some professional literature that provoked questions.

Together, the ISTEs and teachers/school leaders gather and interpret quantitative and qualitative data related to the area of concern. As they analyse that data, they begin to shape some overarching questions for the teachers to address. The questions must be both meaningful and manageable. They often begin, “How can we …?” The teachers/school leaders’ questions will evolve and new questions will emerge as they continue to collect, analyse, and reflect upon data, always maintaining their focus on improving practice so that their students’ learning improves.

Analysis of the initial set of data provides the teachers/school leaders with the information they need to clarify their goals for the students’ learning and to plan how to achieve them. This analysis requires them to integrate, apply, and actively build their knowledge about assessment, curriculum, and the processes of learning. ISTEs can support teachers/school leaders to develop the knowledge and skills they need to make sense of their data and to use it to plan for their students’ learning. At the same time, ISTEs can use this information as baseline data for monitoring the impact of their own practice.

The data analysis should be done with reference to both national and community expectations for student achievement, and it should take account of what students themselves say they value and need. Key resources include *The New Zealand Curriculum* (Ministry of Education, 2007), teacher handbooks, and assessment tools. It is important to maintain the records of student achievement data in such a way that it is easy to monitor and respond to shifts.

At this phase of the inquiry cycle, teachers/school leaders and ISTEs seek answers to the following questions:

- What are the outcomes that are valued for these students?
- How are the students doing in relation to these outcomes? What do they already know? What can they already do?
- What sources of evidence will we use to determine this?
- What do the students need to learn and do?
- How will we build on what the students already know and can do?
- How do the goals for student learning link to the school’s and community’s vision for the students?
- How will we measure improvement?
At each phase of the inquiry and knowledge-building cycle, appropriate inquiry approaches will include the critical analysis of one or more of the following sources of evidence:

- related research and literature;
- student achievement data;
- student voice;
- artefacts of student work;
- observations – for example, of student learning and behaviour;
- audio/video recordings – for example, of the practice of teachers;
- transcripts of conversations – for example, between school leaders and ISTEs;
- written reflections and portfolios – for example, from ISTEs;
- data from questionnaires, surveys, or interviews – for example, with parents and families.

What are the learning needs of the teachers/school leaders?

ISTEs promote valued student outcomes through working with the students’ teachers and school leaders. If they are to plan professional learning opportunities that will improve student learning, ISTEs need information about the teachers’/school leaders’ learning needs. They need to understand the sociocultural context in which the teachers/school leaders work and the beliefs, values, and assumptions that shape their current practices. (See pages 132–133.)

It is important that the teachers/school leaders develop the knowledge and skills they need in order to continue to examine the impact of their teaching on their students’ learning after the withdrawal of intensive ISTE support. This means that ISTEs must ensure that members of school communities learn how to use information about their students’ learning needs to identify and address their own learning and improvement goals. This includes reflecting on how they have contributed to the current patterns of student learning and achievement and what they need to learn and do differently to better meet their students’ learning needs or further accelerate student progress.

The tools and approaches ISTEs select to inquire into teachers’/school leaders’ learning needs will be similar to those that they will later use to inquire into the impact of changed practice. This makes it easier to monitor the impact of the changed practice. The information about teachers’/school leaders’ learning needs should be summarised in a way that makes it easy to notice and record changes. It is also important to reference the desired change to some form of external benchmark. The literature on effective teaching practice is an important source for this.9

The key questions that guide teachers/school leaders and ISTEs in this part of the inquiry are similar to those used to identify student learning needs. They are:

- What do the teachers/school leaders already know and do?
- What sources of evidence will we use to determine this?
- What do the teachers/school leaders need to learn and do?
- How will we build on what the teachers/school leaders already know?
- How will we measure improvement?

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8 Note that critical analysis usually involves adopting or developing some sort of theoretical framework to critique what’s being examined (ideas, practice, evidence, etc.) and to gauge its effectiveness.

9 For example, the handbooks on Effective Literacy Practice (Ministry of Education, 2003 and 2006) and the Best Evidence Synthesis iterations (see www.educationcounts.govt.nz/themes/BES)
What are our learning needs?

In this phase of the cycle, the focus is on the ISTEs’ learning needs. ISTEs think about what they need to learn and do better in order to help teachers meet their own learning needs and those of their students. In order to prioritise their learning, ISTEs need to be clear about their current knowledge, values, and beliefs. Like teachers, ISTEs identify an authentic area of concern as the basis for developing an overarching question for inquiry. It is essential that ISTEs make explicit links between their own learning needs and those of the teachers and students.

As well as gathering and analysing evidence of what their practice looks like now, ISTEs also need to gather evidence from a range of sources about what desirable practice might look like. Again, this should include evidence from formal research, such as is presented in the TPLD BES (Timperley et al., 2007). As with teachers/school leaders, it is important to gather and record evidence about current practice and learning goals so that progress can later be evaluated.

ISTEs can use the following questions to guide this part of their inquiry:

• What is the key catalyst for our inquiry?
• What is our problem of practice?
• How have we contributed to the existing school situation?
• What do we already know and do?
• What sources of evidence and/or knowledge can we utilise?
• What do we need to learn and do?
• How will we build on what we already know?
• How will we measure improvement?

Collaborative critical reflection on this information enables ISTEs to address two key questions:

• What is our inquiry question?
• What are our beliefs and assumptions in relation to our inquiry question?

Designing and engaging in learning experiences

In this phase of the cycle, ISTEs plan and undertake learning experiences that are intended to deepen their professional understandings and extend their skills in ways that impact positively on teachers and students.

It is important to pay close attention to the alignment between two aspects of these experiences: the activities and the content. The “content” relates to what is being learned: the conceptual understandings and theoretical principles, and their relationship to practice. The “activities” relate to how it is being learned: the ways that people try to learn, extend, or apply new understandings and skills. (See pages xxxi–xl of the TPLD BES, Timperley et al., 2007.) It is also important to consider the depth or “order” of learning required and to be prepared to take time and to make explicit the links between multiple learning opportunities. (See pages 151–153 and 154.) Whatever activities are tried, the purpose is for participants in inquiry to build better practice by examining current theories-in-use, considering and trying out new theories and ideas, and negotiating their way to better theories of practice. (See pages 105–109 or pages 191–193.)

ISTEs can use the following questions to think about their learning needs and what they will do to address them:

• Who can we work with?
• What activities will we engage in?
• What content will be embedded in the learning activities?
• How will we ensure that the content of the activities builds on our prior knowledge?
• What research and literature can we draw on?
• What evidence will we need to gather?
• What tools and frameworks can we use to gather and analyse evidence?
• How will we link the learning in one experience to the learning in the next one?
• What opportunities will there be to draw on new knowledge and practise new skills?

Appropriate learning experiences might include one or more of the following:
• critically analysing related research or theories;
• developing or adopting a framework to analyse the effectiveness of practice;
• inviting an expert or colleague to scaffold the learning;
• engaging in critical dialogue;
• collaboratively analysing observations, audio/video recordings, or transcripts;
• using deliberate processes to align beliefs with practice;
• conducting a role play.

How has our practice changed as a result of our inquiry?

By now, ISTEs will have begun to apply their new learning in their practice. It is critical that they gather and examine evidence of their changed practice so that they can identify the impact of their learning on that practice. The evidence they gather should help them answer the following questions:
• What have we learned?
• How is our learning visible in our practice?

To monitor progress, ISTEs will probably use the same approaches to evaluate changes in their practice as they used when they identified their learning needs.

According to the TPLD BES (Timperley et al., 2007, page 14), learners assess and interpret the relevance, usefulness, and cost/benefit of any new theory and practice. Their responses then range along the following continuum:
• reject/ignore the new theory and practice and continue with prior practice;
• continue with prior practice, believing that it is new practice;
• select parts of the new theory and practice and adapt them to current practice;
• implement as required;
• actively engage with, own, and apply the new theory and practice and change practice substantively;
• demonstrate enhanced regulation of their own and others’ learning.

ISTEs should keep this continuum in mind and use it to monitor their responses very deliberately.

What is the impact of our changed practice for teachers/school leaders?

In this phase of inquiry, ISTEs ask whether what they have learned and applied has been successful in promoting the goals for teacher/school leader learning. This should include asking whether the teachers/school leaders are developing the self-regulatory skills they need to monitor the impact of their practice on student outcomes after the withdrawal of ISTE support. To evaluate the impact of their own practice, ISTEs should use similar approaches to those they used to identify the teachers/school leaders’ learning needs.
What is the impact of our changed practice for students?

As discussed above, the ultimate measure of the effectiveness of professional learning opportunities is their impact on student outcomes. ISTE support teachers/school leaders to gather and analyse data to find out whether what they have learned and applied has been successful in promoting the learning and well-being of the students. ISTE also use this information to evaluate their own impact on the students.

The relationship between teacher learning and student learning is complex, reinforcing the need to ensure that the desired student outcomes are clearly specified at the start of the cycle. When analysing the degree to which the outcomes have been achieved, it is usual to use inquiry approaches that are similar to those used to identify student needs. During this analysis, it may become clear that new approaches are needed to answer new questions, to delve into unexpected outcomes, or to give urgent attention to students who are still underachieving.

At times, ISTE will also wish to evaluate their impact on teacher learning and practice and student outcomes across a range of contexts. They can do so by collecting and analysing evidence in collaboration with their colleagues in their ISTE community of practice. This requires the use of an analytical framework that allows ISTEs to critically evaluate and compare data from different places and times. This should help to provide a picture of both their individual and their collective effectiveness in different contexts.

Continuing the cycle

The knowledge and skills gained from engaging in the inquiry and knowledge-building cycle become part of the professional knowledge ISTE use to inform their ongoing practice. At the same time, new questions will have emerged and new dilemmas will have been identified. These will suggest directions for future learning when ISTE re-enter the cycle while working with the same or a different group of teachers and students.

The ultimate measure of the effectiveness of professional learning opportunities is their impact on student outcomes.
Meeting the needs of diverse learners within inquiry

Alton-Lee (2005) emphasises the need for quality teaching that is responsive to and inclusive of diverse students’ needs.

The use of the term “diversity” rejects the notion of a “normal” group and “other” or minority groups of children and constitutes diversity and difference as central to educational practice. That means all learners, including students who are Pākehā or of European heritage, Māori, Pasifika, Asian and learners of many ethnicities and heritages, including high and low achievers, including boys and girls, and so on. This point is important because the word “diversity” can be inappropriately co-opted as a way of constructing an “us” and “other” distinction around an assumed “norm”.

For ISTEs, the implication of this statement is that they must position diversity and difference as central to their pedagogical practice, both in relation to the teachers they work with and the students within their classes. This is no easy matter. For many of us, our background and life experience position us within a “dominant discourse” with established ways of thinking and behaving that privilege particular groups over others (Bishop and Glynn, 1999). It takes time and sometimes painful self-examination to transcend such thinking and behaving and to truly move beyond the “us and other”. It is even more challenging to reach the stage where our daily practice reflects an understanding that there are multiple diversities within apparently homogeneous groups and that each individual we work with is a diverse person with their own multiple characteristics.

The Treaty of Waitangi is the founding document of Aotearoa New Zealand. The three articles of the Treaty are often discussed in relation to the three principles of partnership, protection, and participation. One of the most significant challenges ISTEs face is making these principles a reality and embedding them in their everyday practice.

Bishop and Glynn (1999, page 175) suggest that the Treaty can be used as a metaphor for establishing power-sharing relationships, and they explore this concept through the above three principles. In a similar way, the questions below are offered as a tool for ISTEs to use within their ongoing inquiry into their practice and into meeting the needs of the diverse learners they work with. The questions are best explored over time with others, including the colleagues, teachers, and students ISTEs work with; discussing and addressing them will contribute valuable perspectives to any inquiry.

<table>
<thead>
<tr>
<th>Partnership</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does the idea of “partnership” mean to you? Are the “voices” of all those you are working with able to be heard? Whose voices dominate? How strongly does your voice stand out? How do you know?</td>
</tr>
<tr>
<td>What is the balance of power in the situations you work in? Who does it favour? Do Māori and Pasifika have a share? Do students?</td>
</tr>
<tr>
<td>How inclusive are your ways of working and of building relationships? How do you ensure multiple ways of working are adopted when appropriate?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the implications of the term “protection” in your daily practice? How do you know that your ways of working protect and value multiple “ways of knowing”?</td>
</tr>
<tr>
<td>Who decides what “best practice” and “foundation knowledge” are in the area you work in? Are Māori, Pasifika, and others’ cultural discourses represented? How was this authority to decide established?</td>
</tr>
<tr>
<td>Who are you accountable to? Does your answer include teachers and students? Should it?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does “true participation” look like for colleagues and teachers you work with and for students within the teachers’ classes? How do you arrive at this view? Who’s involved in deciding on it?</td>
</tr>
<tr>
<td>How do Māori and Pasifika teachers and students benefit from taking part in activities with you? How do you know this represents a “benefit” to them? How do you “measure” this benefit?</td>
</tr>
</tbody>
</table>
Using inquiry approaches to improve practice

The Inquiry and Evidence-based Practice chapter adopts Reid’s (2004) metaphor of an “inquiry tool box” to describe the development of a suite of inquiry approaches, techniques, and skills (see pages 78–80). By growing their “tool boxes” thoughtfully and systematically over time, educators can draw from a range of approaches to inquire into the specific learning needs of people within a particular context. The fundamental purpose of all these inquiry approaches is to enable educators to evaluate the adequacy of their theories (what they know and believe) and their practice (what they do) in terms of the outcomes they want to achieve.

This section introduces some of the inquiry approaches that an ISTE may take. The approaches are organised under three headings that indicate key considerations for an inquiry:

1. Gathering appropriate data;
2. Critically analysing data;
3. Selecting a collaborative process and activities to scaffold learning.

After a brief discussion of each of these considerations, the text uses tables to present examples of some useful inquiry approaches. The tables also provide examples of how some of these approaches were used in the learning cases and suggest sources for more information.

Gathering appropriate data

Each phase of inquiry begins with the collection of data that can be used to construct rich descriptions of what students/teachers/school leaders/ISTEs currently know, believe, and can do. Care should be taken with ethical considerations when gathering data (see also page 85).

Three steps are embedded within the data collection process:

1. Deciding on the information that is needed
   - What aspects of the students’/teachers’/school leaders’/ISTEs’ current knowledge, beliefs, and skills do we want to understand?
   - Do we want to make comparisons to the national or international picture?
   - Will this data enable us to find out what we need to focus on in our practice and our professional learning?

2. Choosing appropriate tools
   - What tools will give us the information that we require?
   - Do we have the knowledge to use these tools wisely?
   - If not, is there enough supporting information with the tools?

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As with other chapters in these learning materials, users are not expected to read this section in one sitting; rather it is envisaged that they will refer to relevant approaches while exploring specific questions within their practice.

Note that the text does not attempt a comprehensive introduction to all inquiry approaches or to all the approaches used within the learning cases.
3. Using the tools

- When do we use the tools?
- Who should administer them? Why?
- Who should record the data? Why?

The text below describes the following sources of evidence and some potential approaches to collecting them:

- using observations and audio/video recordings;
- drawing on related research and literature;
- using data on student outcomes;
- responding to student voice;
- creating written reflections.
Using observations and audio/video recordings

One of the most powerful inquiry approaches involves the use of observations and recordings to gather evidence of student learning and teacher/school leader/ISTE practice. The more an educator examines a particular situation, the more they may see and understand (Stoll, Fink, and Earl, 2003).

Many ISTEs use field notes or observation sheets to record their observations. Audio and video recording can be a valuable way of gathering evidence of practice, especially when supported by transcripts. In either case, it is important to remember that it is not always possible to understand the reasoning behind people’s actions simply on the strength of an observation. This makes it important to ensure that the critical analysis of any observation is carried out in collaboration with the person or group who was being observed.

At times, discoveries made through observations and recordings can spark the dissonance that can motivate deep learning. Such learning often occurs when people are confronted by the reality of what they are actually doing and provided with feedback that helps them to compare that reality with the theories that they espouse. (See pages 107–109 and 156–158.) Dissonance can make observations an uncomfortable or even threatening experience. ISTEs need to ensure that they have the agreement of those being observed, that there is a shared understanding of the purpose of the observation, and that the data they gather is relevant to that purpose.

Case 1: Dissonance as a Catalyst for Improvement

Delwynne recalls the shock she felt when she looked at videos of her conversations with teachers and realised that rather than co-constructing new knowledge with them, she had actually been quite manipulative. But she adds that she wouldn’t have understood this without the support of two friends who viewed the video with her.

Delwynne and her colleagues went on to use video recordings to further their own learning and that of the teachers with whom they were working. They efficiently mined their video footage for evidence, making multiple sweeps, first individually, then in pairs, and finally as a group of five. Like Delwynne, the teachers and fellow facilitators experienced a sense of dissonance as they learned to describe and explain the beliefs that sat beneath their practice and to query their effectiveness.

See also the learning stories:
- “Learning from dissonance”, pages 82–83;
- “Using data within a professional learning approach”, pages 174–175.

Recommended reading


Pages 126–132 of this report describe the design and use of in-class observations to “provide data for the research project and at the same time, feedback to the teachers on how well they were transforming this relationship and interactions with the Māori students in their classes” (page 131).
Drawing on related research and literature

One of the key findings of the TPLD BES (Timperley et al., 2007) was that the studies of interventions that reported successful student outcomes were based on generally accepted research findings. As the TPLD BES also shows, these interventions equipped teachers with a sound understanding of the theoretical principles that underpinned them and enabled teachers to make connections between those deeper understandings and their own current theories and practices. ISTEs have an important role in helping teachers engage with professional literature, to make sense of the ideas in terms of the implications for their own practice, and to then apply key new ideas flexibly in different contexts.

It is important to remember that Timperley et al. (2007) found that some unsuccessful studies in the TPLD BES were also associated with research findings. All ideas and approaches, including those that appear to be scientifically based and trustworthy, must be justified in terms of their value in promoting desired teacher and student outcomes. [Refer to page 85 for some more criteria for evaluating external knowledge.]

Collaborative analysis and discussion of professional literature is invaluable. It is undoubtedly most effective when participants have read the material ahead of time. Where this is not possible, a planned process, such as the jigsaw technique for co-operative group reading, can be effective in covering a lot of material in a constrained time frame. However, care must be taken to ensure that participants engage in depth and, if possible, follow up the activity with personal reading.

Case 4: Supporting Teachers to be Self-regulatory

The beliefs and theoretical understandings that underpin the work of Melanie and her colleagues are the same as those set out in the Effective Literacy Practice (Ministry of Education, 2003 and 2006) handbooks. Those books identify the dimensions of effective literacy practice as identified in national and international research. They show teachers the links between literacy teaching practice, learning processes, and student outcomes. While acknowledging students’ diversity, the information that is presented in these books is applicable for all students, whatever their needs.

For Melanie, the handbooks set a benchmark for what good practice looks like. Because of this, she and Glenda refer to the year 5-8 edition during their conversation. The focus, as Melanie explains, is on “what Effective Literacy Practice says and what it might look like in practice”. This is a powerful example of research evidence being used to inform practice and to monitor its improvement.

See also the learning story “Using data within a professional learning approach”, pages 174-175.

Recommended reading


Brown and Hayes present the results of research into the use of professional reading circles with a group of beginning teachers. The model they used seemed to foster collaborative, reflective learning and to empower the teachers to take greater ownership of their learning.
Using data on student outcomes

The data teachers or schools collect about students can provide valuable information about students’ engagement and achievement. It can be used to identify areas of strength or concern and provides a means of asking better questions, focusing investigations, and monitoring progress. An effective approach, and one that is also quite efficient, can be the identification of a target group of students whose progress is monitored especially closely.

Timperley (2007) makes the point that knowing what students are expected to know and do can have a powerful influence in raising overall standards. Standardised student achievement data helps teachers and schools to understand what they should be expecting. It is important for comparisons (class-wide, school-wide, or nationwide) at particular points in time and over time.

Standardised student achievement data is obtained through administering a normed assessment tool under a specified set of conditions. This data can be used to make inferences about the achievement of a student or a group of students when compared statistically to the norm. (A norm derives from a large or national sample representing a wide and diverse cross-section of students.) Examples of normed assessment tools in New Zealand include asTTle, PATs, and STAR.

Teachers’ day-by-day collection of data and monitoring of progress through a broad range of diagnostic and informal assessment practices are equally important. The information gathered helps to inform teachers’ planning and their moment-by-moment teaching decisions. Examples of diagnostic and standards-based assessment tools include the New Zealand Curriculum Exemplars, the ARBs, the surveys from NEMP, and specialist tools such as NumPA (see opposite).

ISTEs can support teachers to develop their understanding and use of student data by providing specific instruction about assessment tools and by modelling the use of data within their own practice.

### Case 4: Supporting Teachers to Be Self-regulatory

The work of Melanie and her colleagues at Rata Street School began with an initial needs analysis using three standardised assessment tools:

- Supplementary Tests of Achievement in Reading (STAR)
- Assessment Tools for Teaching and Learning (asTTle)
- Observation Survey of Early Literacy Achievement (the "six-year net").

Over time, the teachers have become comfortable using such tools, and the standardised data has improved their understanding of what different levels of achievement look like and increased their expectations for their students.

In Melanie and Glenda’s pre-observation conversation, Glenda describes how she began the year by reviewing the asTTle results from the end of the previous year to identify her students’ strengths and needs and to decide on the next steps for their learning.

See also the learning story “Using data within a professional learning approach”, pages 174–175.
Recommended reading


Chapters 3 and 4 of this valuable practical guide discuss the selection and use of normed assessment tools.

The Ministry of Education has a number of websites that provide information about how to gather and analyse student data and use it to plan for student and teacher learning. They are valuable resources for ISTErs when building schools’ capacity for evidence-based practice. The websites include:

  The Assessment Resources for Classroom Teachers (ARCT) are compiled by the New Zealand Council for Educational Research. They include the Assessment Resource Banks (ARBs) and over 3500 assessment resources in mathematics, science, and English.

- **Consider the Evidence**: [www.tki.org.nz/r/governance/consider/index_e.php](http://www.tki.org.nz/r/governance/consider/index_e.php)
  Consider the Evidence is designed to assist secondary schools with using evidence to make decisions that will help improve student achievement. It can be applied in all curriculum learning areas and school processes.

  LeadSpace provides information, tools, and links that support school leadership, governance, and management. It includes a section intended to help leaders to use evidence in their decision making.

  TKI’s assessment community has information about all aspects of assessment. This includes a considerable body of research and readings, online workshops, and new assessment tools and resources. For example, it provides links to asTTle (Assessment Tools for Teaching and Learning) and NEMP (National Education Monitoring Project).

  This page provides summaries of a range of assessment tools and links to several *Curriculum Updates* that provide background information on assessment.

- **NumPA**: [Numeracy Project Assessment](http://www.nzmaths.co.nz/numeracy/2005numPDFs/NumBk2.pdf)
  The Numeracy Project Assessment is a diagnostic tool designed to provide information about the knowledge and mental strategies of students. It takes the form of an individual interview with students.

In 2007, ERO published three reports on schools’ effectiveness in the collection and use of assessment:

- “The Collection and Use of Assessment Information in Schools.”
- “The Collection and Use of Assessment Information in Schools: Good Practice in Primary Schools.”
- “The Collection and Use of Assessment Information in Schools: Good Practice in Secondary Schools.”

The reports can be downloaded from ERO’s website [www.ero.govt.nz/ero/publishing.nsf/Content/Home+Page](http://www.ero.govt.nz/ero/publishing.nsf/Content/Home+Page) by following the links to Reports and then to National Reports.
Responding to student voice

The New Zealand Curriculum (Ministry of Education, 2007) articulates a shared vision of “Young people who will be confident, connected, actively involved, lifelong learners” (page 8). One of the characteristics of effective assessment identified is that it “involves students – they discuss, clarify, and reflect on their goals, strategies, and progress with their teachers, their parents, and one another. This develops students’ capacity for self- and peer assessment, which lead in turn to increased self-direction” (page 40).

It is important that educators inquire into how they can deepen their understanding of students’ perspectives and engage with students in school and classroom communities where everyone is a learner. Typical strategies include conferencing, student surveys, focus groups, and collaborative storying. When talking with students, it is important for educators to explain why they are gathering their views and how they will use the information the students share with them. This is an opportunity for the educators to model their own approaches to learning and to show that they are responding to what the students value and need.

ISTEs may find the following questions useful for gathering student voice. They were among those that students were asked as part of the curriculum review. (See The New Zealand Curriculum Online – Student views.) Older students were asked:

- What helps you learn?
- What advice would you give to teachers?
- What makes a good teacher?
- When your schoolwork gets hard, what do you do?
- Who do you ask?
- Do you feel able to ask your teacher or your friends questions?
- What do you do if they can’t help you?

Younger students were asked:

- Do you like learning new things?
- How do you learn new things?
- What’s your teacher like?
- What does your teacher do with you in the classroom?
- If you don’t know how to do something, what do you do next?
- Do you ask your teacher questions?

Case 1: Dissonance as a Catalyst for Improvement

Delwynne describes the response of the teachers at Waiharara School when they began to ask the students what they thought the focus of a lesson was and what they had learned. Often, the mismatch between the teachers’ perceptions and those of the students was challenging for the teachers. The teachers have learned from this and are now more actively seeking the students’ perceptions and engaging them in discussions about what they need to do to improve. This is enabling the students to become more self-regulated in their learning.
Recommended reading


Bishop et al. used a collaborative storying technique to get the perspectives of Māori students about how best to improve their educational achievement. (See pages 141–142.) The students’ stories have challenged teachers in the research and professional development project Te Kōtahitanga to recognise the impact of their beliefs and values on their Māori students. As a result, teachers are changing their teaching strategies and students’ attendance, engagement, and achievement levels are rising.


Hill and Hawk examined the development of the AimHi project and the accompanying research project. They explored the links between the different worlds that students experience and how the collision between these worlds, especially those of home and school, can impact on student learning and achievement. Their research included the perspectives of over 900 students who participated in group discussions.
Creating written reflections

Written reflections take a wide variety of forms. These may be informal, such as journals, or formal, such as reports. Written reflections differ as to their intended audience, but they share a similar purpose: to clarify and sort through aspects of a particular experience and to allow that experience to be revisited.

The most intimate form of written reflection is the journal. Keeping a journal is a powerful form of learning because in order to transform an idea into language, the mind has to process and clarify the idea. Journal writing “becomes a place for learners to record observations, toy with various perspectives, analyse their own practice, keep records, make comments, or reconstruct experiences” (Killion, 1999, page 36). Journals can vary greatly in form and layout. For example, writers may simply record events or thoughts as in a daily diary, or they may use a strategy such as the “left-hand and right-hand case exercise” (see page 64) to structure their thoughts about a particular event. Journals can be kept private or shared with colleagues for their responses. Electronic journals (or “e-journals”) provide the opportunity for collaborative reflection with others in an online community.

Many educators use portfolios to reflect on what they have done, identify strengths and needs, and plan for the future. Portfolios are developed by systematically collecting evidence about professional learning and practice. Including artefacts can support the writer’s attempt to capture particular instructional moments or fleeting experiences for more careful analysis later.

Robinson and Lai (2006) strongly advocate that participants in collaborative inquiry should produce written reports. By feeding back draft findings to inquiry participants, inquirers can strengthen their validity and deepen collaboration.

All cases

Each case includes written reflections by participants in the inquiry, who share their thoughts on their experiences. They also include written comments by expert observers, who provide alternative perspectives and identify connections between the inquirers’ learning and their own. These shared reflections contribute to the continued development of a shared knowledge base for ISTE practice.

See also the learning story “Building trust in an online environment”, page 119.

Boud discusses the features of journal writing that aid reflective practice and circumstances that may inhibit the use of journals for this purpose.


King and LaRocco report on an inquiry into the use of e-journalling as a tool for enhancing the learning of teachers and school leaders engaged in study at Arizona State University.


Van Wagenen and Hibbard stress the importance of ensuring that teacher portfolios enable self-regulated learning.
Critically analysing data

The next step within each phase of the inquiry and knowledge-building cycle is to critically analyse the data that has been gathered, making inferences about what it reveals about the strengths and needs of students and educators and about the adequacy of educators’ current theories of practice. This sense-making process is vital in the transformation of data into evidence. (See pages 83–84.)

Educators need some sort of analytical framework to guide them through their analysis. The framework should enable them to focus on the purpose of their interactions, to investigate how well their practice matches the values and beliefs they espouse, and to evaluate the degree to which they are achieving their intended outcomes. It should also allow educators to explore the coherence and connections between data that relates to students, to teachers, and to ISTE.

Three steps are embedded within critical analysis of data:

1. **Drawing initial inferences on the basis of our expectations**
   - What are our expectations for all of these students?
   - Are our expectations being met by the whole group and by particular subgroups? (Subgroups could include students who belong to particular ethnic groups or who are having difficulties in a specific aspect of their learning.)
   - How do our results compare to the national picture?
   - Are we satisfied with these results?
   - What does the data tell us about the students’ strengths and needs?
   - What are our expectations for teachers/school leaders?
   - What are the strengths and needs of the teachers/school leaders?
   - What are our expectations of ourselves as ISTE?
   - What are our strengths and needs?
   - What have we contributed to the school outcomes?

2. **Asking deeper, more complex questions in order to make sense of the data**
   - How can we invite others into the analysis in order to include a variety of perspectives?
   - What do we need to know about the educators’ content knowledge, pedagogy, and theories of practice if we are to explain the results we have? What tools will give us this information?
   - What are the patterns and links we can see when we look at all of our data analyses? Do we need to disaggregate some of the data?

3. **Making decisions about where to go next**
   - What does this information tell us about the priorities we should be setting?
   - Based on these priorities, what are our targets for ourselves and the students, teachers, and school leaders?
   - What do we need to learn to do to promote these targets?
   - How can we align the needs of the students, teachers, and school leaders with our needs as ISTE?
   - What should we expect to notice if our changed practice is having an impact?

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**Three steps are embedded within critical analysis of data:**

1. **Drawing initial inferences**
2. **Asking deeper, more complex questions in order to make sense of the data**
3. **Making decisions about where to go next.**
The text below describes two approaches that educators find useful when critically analysing and learning from data:

- using a framework to analyse practice;
- adopting the Model I – Model II framework.

### Using a framework to analyse practice

When inquiring into their ways of working, educators generally need to select or create a framework for analysing evidence (such as transcripts or observation records) of their practice. When working collaboratively, an agreed framework is an especially valuable tool for establishing common expectations and understandings.

The development of a framework ensures that the principles and theories underpinning practice are articulated and agreed. The framework also often determines the data and evidence of practice that are collected. Using the framework to analyse that evidence provides a common frame of reference with which to evaluate the adequacy and impact of practice. The analysis may demonstrate coherence between theory and practice, or it may reveal dissonance between them.

Most research projects in New Zealand about professional practice or learning in education include some sort of framework for the analysis of practice. Many of the research and development initiatives within INSTEP created or adopted such a framework (Higgins, 2008). And although it was not designed for analysing practice, the framework used within the TPLD BES (Timperley et al., 2007) is a particularly good example of an analytical tool that articulated underpinning principles and theories, that guided the selection of studies to be incorporated within the synthesis, and that ensured coherence and consistency in the analysis of the studies.

### Case 4: Supporting Teachers to Be Self-regulatory

Melanie participated in the development of a practice analysis framework within the Literacy Professional Development Project. The framework has become a way to both guide learning conversations and to analyse their effectiveness (Bareta et al., 2007). Case 4 shows the complexity of the thinking and practice that is involved in its enactment. Melanie wants to ensure that her facilitation supports teachers to become self-regulated learners, focused on ongoing improvement in their own practice and their students’ learning.

The learning case shows Melanie’s post-observation conversation with Glenda. Melanie used the practice analysis framework to ensure that she and Glenda developed a shared understanding of the theory and principles that underpin effective practice and that Glenda can apply this “principled knowledge” to future lessons.

See also the learning story “A framework for exploring theories underpinning practice”, pages 112–113.

### Recommended reading


This paper describes the use of practice analysis conversations within the Literacy Professional Development Project and the development of the framework that underpins the conversations.
Adopting the Model I – Model II framework

Argyris and Schön (1974) explain that the concepts of Model I and Model II represent the behaviour of people with contrasting theories-in-use. People who operate according to a Model I theory-in-use tend to take a competitive and defensive stance to the world. People who operate according to a Model II theory-in-use tend to take a more collaborative and less defensive stance. The shift from Model I to Model II behaviour requires “double-loop learning” – learning that involves the questioning of basic assumptions and values. This enables people to shift from reasoning that is characterised by defensiveness to what Argyris (1990) calls “productive reasoning”. (See pages 133–137.)

New Zealand ISTE Eileen Piggott-Irvine (2003) suggests four stages for helping participants in action research make the shift from Model I to Model II behaviour:

1. Map the problem and how it is dealt with, by examining and exposing participants’ espoused theories and their theories-in-use.
2. Diagnose the extent to which participants themselves create and maintain problems. (The dissonance this creates can be a catalyst for change.)
3. Take productive reasoning from an espoused theory to a theory-in-use so that participants learn to conduct conversations that are simultaneously critical and collaborative.
4. Reinforce the practice in new learning situations with support from peer coaching.

Argyris (2000) suggests a number of methods for helping people to understand how they might espouse Model II behaviour but practise Model I behaviour. These require people to review their interactions to discover areas in which Model II behaviour would have produced better outcomes.

In the "left-hand and right-hand case exercise", the method is to divide a page into two columns. In one column, the inquirer recounts a frustrating conversation as he or she remembers it. In the other column, the inquirer writes the corresponding thoughts and feelings that he or she didn’t express at the time.

Argyris (2000) also advocates recording interactions. A recording provides an unbiased replay of a meeting or other interaction. Members of a learning community can return to it on repeated occasions to note places in which Model I behaviour was obvious and produced negative effects.

ISTEs who use electronic recording tools find that as they become more practised in their use, they move from observing and commenting on the superficial aspects of interactions to digging deeper into the theories-in-use that their recordings reveal. This can be an uncomfortable process, even when the ISTE has support from a colleague or critical friend. However, this process can enable the double-loop learning associated with substantive change.

Case 3: Effective Communication within Learning Interactions

Catherine’s inquiry was focused on how she could conduct conversations with teachers so that each participant felt that they could openly and respectfully discuss challenging issues. Her thinking about communication was underpinned by the Model I – Model II framework.

Catherine felt that Jack was not engaging in the learning she was facilitating and was really just paying lip service to the concepts they’d been discussing. She shared her problem with her colleagues, Michael and Allan, and enlisted their help in devising a strategy for analysing her interaction with Jack. She began by reconstructing the dialogue from memory and annotating it, in line with Argyris’s left-hand and right-hand case exercise.

Then, through a series of role plays and practice conversations, Michael and Allan helped Catherine to deconstruct her original conversation, surface the theories-in-use that had led to its ineffectiveness, and both shape and practise a more effective model of communication.

For example, in the analysis of one moment from the conversation, they explore Catherine’s reluctance to “check in” with Jack as the conversation proceeds. They then role-play an alternative dialogue that is more in keeping with Catherine’s belief in the value of Model II behaviour.

See also the learning stories:

- “Building a culture of inquiry”, page 90;
- “Being a critical friend”, pages 128–129;
- “More haste, less speed”, page 138.
Recommended reading


This classic text is available at www.actiondesign.com/action_science/index.htm. You can also link from this page to an Action Science forum, where you can participate in discussion on the book and on action science more generally.


New Zealand ISTE Eileen Piggott-Irvine describes a process based on the Model I – Model II framework that can be used to help educators develop the high trust and open relationships that enable problems to be discussed and resolved.
Selecting a collaborative process and activities to scaffold learning

There are many ways in which ISTE-s can learn from a person who they have identified as having expertise that can help them to improve. This person’s role is to scaffold the learning, often using the same framework that has been chosen to analyse the data. ISTE-s use different terms to describe this collaborative process. They include “critical friend”, “coach”, “mentor”, and “external partner” (see pages 126–130).

The questions listed on the bottom of page 48 are applicable whenever decisions are being made about how to scaffold learning. They include:

• Who can we work with?
• What activities will we engage in?
• What content will be embedded in the learning activities?
• How will we ensure that the content of the activities builds on our prior knowledge?
• How will we link the learning in one experience to the learning in the next one?
• What opportunities will there be to draw on new knowledge and practise new skills?

The text below describes some of the approaches ISTE-s may use. They include:

• aligning beliefs with practice;
• learning from modelling by others;
• participating in role play;
• using a coach or mentor;
• working with a critical friend.
Aligning beliefs with practice

Many researchers discuss the critical importance of aligning beliefs with practice within deep, collaborative learning. Within New Zealand, problem-based methodology (Robinson and Lai, 2006) has emerged as a powerful framework for improving practice by examining the beliefs that lie behind that practice (see page 139).

Julia Atkin (1996) has developed a set of processes and strategies that is helping many educators to surface and clarify their values and beliefs and to compare their practice to the beliefs that they espouse. They find that the dissonance that this creates can be a catalyst for making changes to practice. Atkin regards the following processes as critical to a values- and beliefs-based approach to learning:

- creating a shared vision;
- identifying values and beliefs;
- clarifying values and beliefs;
- examining practices for alignment with values and beliefs;
- formulating principles and designing practices based on values and beliefs.

In New Zealand, educators are being challenged to consider whether their beliefs and professional practice are truly meeting the needs of Māori students. Pages 122–124 discuss the development of pedagogy that is based upon kaupapa Māori and that addresses issues of power and control to create new power-sharing relationships and interactions drawing on Māori cultural aspirations and sense-making processes (Bishop et al., 2003).

Te Kōtahitanga, a research and professional development project, promotes this pedagogy within English-medium settings.

It is an approach that rests in the first instance upon a commitment by teachers to build caring and learning relationships and interactions with Māori students; in the second, for teachers to strongly believe Māori students can improve their achievement; and thirdly, their students are able to take responsibility for their learning and performance.

Bishop, Berryman, Powell, and Teddy, 2007, page 12

Case 6: Being a Critical Friend

Barbara refers to her strong belief in Atkin’s approach. In each of her conversations with Gillian, she examined her practices for their alignment with her values and beliefs. She then identified some principles that she could apply in her work with others, and she redesigned her practices to ensure that they were better aligned with her values and beliefs.

Case 5: Te Tūhono i ngā Ao e Rua

This case highlights the complexity of the issues faced by educators who work within a pedagogy based upon kaupapa Māori. Kaupapa Māori for Leeana is more than a statement of belief – it is a fundamental part of her identity. At the same time, Leeana identifies as a professional educator, and the knowledge and beliefs she has developed in that world are also part of who she is. She clarifies her dilemma in her inquiry question: “How can I ensure that my interactions with teachers and colleagues are professional and keep students’ needs to the fore while being true to kaupapa Māori?”

Comments from pakeke and rangatahi reveal that there are no neat solutions to be found to Leeana’s dilemma. There is, however, a shared commitment to students, which is, perhaps, the bridge that will lead to an ultimate resolution. In the meantime, it is important to identify the issues and do the hard talking in ways that respect the mana of all.
While kaupapa Māori theory and practice build on the past, their development is by no means static: New Zealand researchers and practitioners wrestle with what they mean in practice today.

*Writer after writer indicates that Māori pedagogy is not new, but is derived within a long and ancient history of tikanga Māori and is informed by mātauranga Māori that is sourced in thousands of years of articulation and practice. The ability and commitment to look to the past for answers to present (and future) Māori educational developments is perhaps the most critical factor to Māori educational achievement.*


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See also the learning stories:

- "Developing a shared understanding within a community of practice", pages 102–103;

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**Recommended reading**


Kaupapa Māori: www.kaupapamaori.com/theory

This website provides access to a rich array of research on kaupapa Māori theory and practice. In particular, the page on “Action” provides examples of research and writing specifically related to kaupapa Māori in education.


This review provides an overview of the kaupapa Māori principles and practices that form the basis of Māori pedagogy.

Te Kōtahitanga publication home page: www.educationcounts.govt.nz/publications/series/te_kotahitanga

As a professional development initiative, Te Kōtahitanga is committed to what its leaders call a “Culturally Responsive Pedagogy of Relations”. This page provides access to the project’s publications.

Te Mana: www.minedu.govt.nz/index.cfm?id=6662

Te Mana aims to increase participation of Māori in education and to raise expectations of Māori achievement. It encourages students of all ages to take responsibility for their education and models what success looks like – for example, through www.taiohi.co.nz, which links with Taiohi magazine’s stories, with music, and with other special features.
Learning from modelling by others

Modelling can be a powerful way of scaffolding learning, provided that the underpinning theory is well understood by the learner. This can be achieved by:

- “thinking out loud” – the person doing the modelling articulates the thinking going on inside his or her head;
- accompanying modelling with rich learning conversations that help learners understand the complexity of a new approach (Timperley et al., 2007).

Poglinco and Bach (2004) conducted research that affirmed that modelling is an essential part of the role of a coach. Of all the techniques a coach may employ, they found that modelling is the one most likely to result in teachers “buying in” to new instructional techniques, modifying their practices, and adhering to the instructional delivery formats.

Loughran (2006) points out that modelling “means teaching about two things simultaneously: the content under consideration and the teaching employed to convey that content” (page 42). He argues that the purpose should be to open up the problematic nature of teaching: in conversations around modelling, participants should focus on the complexities of the unfolding pedagogical situation. In this way, modelling provides a way of making tacit knowledge-of-practice explicit.

Case 2: Becoming a Pedagogical Leader

In this case, Jo Helby refers to her realisation that she needed to model the teaching of literacy to her colleagues. The case reveals Trevor’s use of modelling as a coaching strategy to support Jo to develop her understanding of what effective literacy teaching looks like and to build her confidence in practising modelling herself.

When Jo and Trevor discussed the use of modelling, Jo commented on the importance for a teacher of seeing how literacy strategies could be used in her class of art students.

According to Trevor, modelling has two main advantages:

- it “brings to life” the ideas in research materials so that teachers can see what those ideas look like in the context of the classroom;
- it provides professional learning for the person doing the modelling as they increase their proficiency as teachers and become more active problem solvers.

Recommended reading

Ministry of Education (2003 and 2006). Effective Literacy Practice in Years 1 to 4 and Effective Literacy Practice in Years 5 to 8. Wellington: Learning Media.

These books describe the use of modelling as an instructional strategy in literacy teaching in years 1–8 and illustrate alternative approaches to those discussed above in Case 2, where the context is years 9–13.
Participating in role play

Role-playing involves applying a set of techniques that were first developed by Jacob Moreno, a Viennese psychologist. Moreno contended that people could gain more from acting out their problems than from talking about them. The use of role play in ISTE professional learning derives from its use in educational and organisational psychology.

Role play requires a skilled leader and an environment in which participants feel safe to take risks and to examine their behaviour in depth. While there are challenges in taking part in role play, these are outweighed by its value in enabling participants to examine their theories of practice and to compare them to their theories-in-use.

A role-playing session generally takes place in a group setting. It may involve five basic steps:

1. Recall a particular scene or issue.
2. Recreate the original scene with support from the group.
3. Review the scene from different perspectives and develop a new approach.
4. Replay the scene, trying the new approach with support from the group.
5. Experiment with the new approach in your work and personal life.

[Adapted from Epicentre for Thriving Organisations, n.d.]

Case 3: Effective Communication within Learning Interactions

Catherine, Allan, and Michael’s use of role play as a technique for analysing interpersonal communications is underpinned by their understanding of the theories about interpersonal effectiveness derived from the work of Argyris and Schön.

While acknowledging the challenges and risks involved, Catherine and her colleagues are adamant that role play makes a major contribution to their professional growth and learning.

Catherine and Allan used role play to re-enact a conversation that did not go as Catherine had planned. Working with her colleagues, Catherine was then able to identify times when she behaved in Model I ways that undermined her ability to achieve her intended outcomes. Subsequently, they used role play to try out strategies that are more consistent with the values and beliefs Catherine espouses.

Recommended reading


This is regarded as one of the standard textbooks in introductory industrial and organisational psychology.

For more information on role play, you may like to search the literature for “psychodrama”.
Using a coach or mentor

The terms “coaching” and “mentoring” are often used interchangeably. Hobson (2003) suggests that “mentoring” is more generally used to refer to a process whereby a more experienced individual seeks to assist someone less experienced, and “coaching” is used to refer to forms of assistance relating more specifically to an individual’s job-specific tasks, skills or capabilities.” (page 2).

Jan Robertson is New Zealand’s leading expert on coaching; pages 129–130 introduce a coaching model developed by her. Her insights add to a growing evidence base about the benefits and practice of coaching and mentoring. On the basis of this evidence, the United Kingdom’s Department for Education and Skills has developed a National Framework for Mentoring and Coaching [see www.ncsl.org.uk/coaching]. According to the framework, effective mentoring and coaching involves:

- **learning conversations**: structured professional dialogue, rooted in evidence from the professional learner’s practice, which articulates existing beliefs and practices to enable reflection on them

- **a learning agreement**: establishing confidence about the boundaries of the relationship by agreeing and upholding ground rules that address imbalances in power and accountability

- **growing self-direction**: an evolving process in which the learner takes increasing responsibility for their professional development as skills, knowledge, and self-awareness increase

- **understanding why different approaches work**: developing understanding of the theory that underpins new practice so it can be interpreted and adapted for different contexts

- **experimenting and observing**: creating a learning environment that supports risk-taking and innovation and encourages professional learners to seek out direct evidence from practice

- **a thoughtful relationship**: developing trust and attending respectfully and with sensitivity to the powerful emotions involved in deep professional learning

- **combining support from fellow professional learners and specialists**: collaborating with colleagues to sustain commitment to learning and relate new approaches to everyday practice; seeking out specialist expertise to extend skills and knowledge and to model good practice

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**Case 2: Becoming a Pedagogical Leader**

Trevor acted as coach and mentor for Jo Helby as she worked to develop her practice as a pedagogical leader and to enact the ideas she had read about in the research. For example, she and Trevor discussed how Jo might support the Head of Arts to better address the literacy demands within NCEA visual arts. Together they agreed on a number of strategies for moving forward, including specific modelling of the use of literacy strategies in the visual arts classroom and the use of student focus groups.

See also the learning story “Using data within a professional learning approach”, pages 174–175.
**setting challenging and personal goals:** identifying goals that build on what learners know and can do already, but could not yet achieve alone, while attending to both school and individual priorities.

**acknowledging the benefits to the mentors and coaches:** recognising and making use of the professional learning that mentors and coaches gain from the opportunity to mentor or coach.

**using resources effectively:** making and using time and other resources creatively to protect and sustain learning, action, and reflection on a day-to-day basis.

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**Recommended reading**


Follow the link on “effective learning strategies” to locate resources on the theories and practice of mentoring and coaching.

National College for School Leadership: [www.ncsl.org.uk/coaching](http://www.ncsl.org.uk/coaching)

This site provides access to a wide array of publications and resources on mentoring and coaching. These are based on evidence of effectiveness in a range of contexts. They include a range of practical tools and processes, case studies, and workbooks.


Neufield and Roper describe what coaching is, what coaches do, the kinds of supports that coaches need, and the potential benefits to both educators and students. Their report is richly illustrated with examples and quotes.


Poglinco and Bach highlight the complexities and potential benefits of coaching. They warn that “adopting a coaching model without considering its complexities may not yield the results schools and districts are seeking” (page 400).
Working with a critical friend

Page 127 discusses the concept of a critical friend. Costa and Kallick (1993) define a critical friend as “a trusted person who asks provocative questions, provides data to be examined through another lens, and offers critique of a person’s work as a friend” (page 50). They outline a process for conducting conferences between a critical friend and a learner. In brief, the process they suggest proceeds as follows:

1. The learner describes a practice and requests feedback.
2. The critical friend asks questions in order to understand the practice described and to clarify the context in which the practice takes place.
3. The learner sets desired outcomes for this conference, ensuring that he or she is in control of the feedback.
4. The critical friend provides feedback on what seems to be significant about the practice. This feedback should provide more than cursory praise; it should provide a lens that helps to elevate the work.
5. The critical friend raises questions and critiques the work, nudging the learner to see it from different perspectives.
6. Both participants reflect and write. The learner writes notes on the conference, thinking about the points and suggestions raised. The critical friend writes to the learner with suggestions or advice that seem appropriate for the desired outcome.

Case 6: Being a Critical Friend

Barbara was concerned that although she knew and believed in the theory about critical friendship, she was not enacting it in her practice. Gillian is herself in role as a critical friend to Barbara, and her beliefs about the role are reflected in the ways in which she supports Barbara.

In their first conversation, Gillian helped Barbara to articulate her personal theory about the role of a critical friend, particularly around the concept of challenge. She then prompted her to compare that to her actual theory-in-use as revealed in a video of Barbara’s practice, before co-constructing future practice that would better match Barbara’s beliefs about her role as a critical friend.

In their second conversation, Gillian helped Barbara to identify shifts in her practice and the learning that enabled those shifts. She then helped Barbara to think about where she wanted to go next. As she did so, she continued to model the critical friend role, building their relationship by offering challenge in a supportive way that enabled Barbara to take ownership of her own learning.

See also the learning stories:
- “Surfacing values and beliefs”, pages 108–109;

Recommended reading

This site provides links to websites and publications on critical friendship.

Swaffield explores the origin, use, and definition of the term “critical friendship”. She then uses a range of activities from Leadership for Learning: The Cambridge Network to illustrate facets of critical friendship.
References


The New Zealand Curriculum Online – Student views: http://nzcurriculum.tki.org.nz/student_views


AREAS OF ISTE KNOWLEDGE AND EXPERTISE
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**Inquiry-based practice**

**What is inquiry?**

Inquiry is a way of reflecting on professional practice.

> I understand inquiry to be a process of systematic, rigorous and critical reflection about professional practice, and the contexts in which it occurs, in ways that question taken-for-granted assumptions. Its purpose is to inform decision-making for action. Inquiry can be undertaken individually, but it is most powerful when it is collaborative. It involves educators pursuing their “wonderings” (Hubbard & Power, 1993), seeking answers to questions or puzzles that come from real-world observations and dilemmas.

Reid, 2004, page 3

In exploring systematic, rigorous, and critical areas of reflection, Reid (2004) says that there are three major “moments” when inquiry can be undertaken. If the purpose of inquiry is to inform decision making for action, then the third moment is a critical one. The moments are:

- **Reflection-in-action** (Schön, 1983) is the process of drawing on ingrained, "tacit" knowledge to make spontaneous decisions about events as they happen.
- **Reflection-on-action** (Schön, 1983) is the reflection that takes place when contemplating an action or after an action is taken.
- **Reflection-for-action** (Killon and Todnew, 1991) draws together the other two inquiry “moments” as the educator makes decisions about future action on the basis of what happened during a particular event and the reflection that occurred afterwards.

_Inquiry can be undertaken individually, but it is most powerful when it is collaborative._
The fundamental purpose of inquiry in education is to make decisions about practice that will help raise student outcomes. Stoll, Fink, and Earl (2003) say that another kind of reflection is meta-learning – learning about your own learning.

By asking them to review their experiences of learning, focusing at each stage on their purpose, strategy, the effects, their feelings and the context, the adult learner can review his or her learning, learn about the learning and apply what they have learnt to their future learning.

Reid (2004) explains that inquiry is more than a technical activity, focused on how to make existing practices more efficient. It also has two other important dimensions.

The first – a conceptual dimension – involves educators analysing the reasons for actions taken, such as examining the theory behind their practices and exploring alternatives. And the second – a critical dimension – involves justifying what is done in relation to the moral, ethical and socio-political issues associated with practice and looking at the external forces and broader social conditions that frame it, in order to gain greater understanding (Farrell, 2004). Critical forms of inquiry are centred on a commitment to equity and social justice.

According to Reid, inquiry should be “a way of professional being”.

Educators who are inquirers will never announce that they ‘do’ inquiry, thus separating the activity from their professional being. Rather they might describe how they work – that is, the ways in which they inquire into their professional practice and how they are always striving to develop and expand their capacity to inquire.

What forms does inquiry take?

Over the course of their professional careers, educators are likely to develop a range of approaches to inquiry, each of which is designed to facilitate critical reflection. Reid (2004) suggests that the approaches might include:

- action research, where the educator identifies an issue/puzzle/contradiction, gathers data in relation to the issue, draws on research, analyses the data, theorises a strategy, acts and reviews;
- critical dialogue, where a group of educators meet regularly and engage in a form of critical discussion, typically involving one member describing a practice or a dilemma in his/her teaching and the group interrogating the assumptions and beliefs about learning upon which that practice is based. This often leads to new strategies or approaches (e.g., Smith-Maddox, 1999);
- classroom/work-place observations, where individuals, pairs or groups can observe each other teaching as a part of the process of collaboratively exploring an issue. They might describe what they see (in written form or orally) and then analyse and interpret these observations through reflection and critical discussion, in order to develop new strategies in relation to the issues/problems identified;
- journals, where educators write regularly in journals about their work, recording their criticisms, doubts, questions, successes and joys. Looking over these at intervals can often reveal some rhythms or irregularities that are not picked up when there is a focus on individual events or practices;

In Case 3, an ISTE uses role play with two colleagues to critically interrogate the assumptions and beliefs underpinning her practice and to develop improved ways of communicating in challenging situations.

The fundamental purpose of inquiry in education is to make decisions about practice that will help raise student outcomes.
• critical data analysis, where educators interrogate data (gathered by them or by the system), seeking to reveal issues or interesting observations that might form the focus of further inquiry;
• appreciative inquiry, where educators gather data about successes and try to understand the factors that promote these, rather than focusing on problems. This form of inquiry starts with the assumption that whatever you want more of, already exists in an organisation. It is a matter of examining the whole, not looking at the separate parts of a system that are not working;
• portfolios, where an educator compiles evidence of successful development in his/her work. Portfolios foster reflection because they cause the educator to identify professional strengths and weaknesses;
• writing, where educators use various approaches to reflect on their work, including narrative inquiry (involving story-telling), and proposal writing (involving research and the development of a reasoned argument, as these materials do);
• text analysis, where educators analyse policy and other texts in order to unearth assumptions and theories and to subject these to critical analysis;
• program evaluation, where educators seek to assess the outcomes of particular activities, using approaches that range from goal-based evaluations to those that are open-ended and responsive.

Reid emphasises that each approach:
• can be used in different ways for different purposes and with different starting points;
• is supported by a body of research literature;
• requires a number of action-oriented skills and techniques.
He suggests that educators need to develop a suite of inquiry techniques and skills – a kind of "inquiry tool box" – and that these include the ability to:

- clarify meaning;
- identify issues/problems/dilemmas/puzzles/successes;
- develop inquiry questions;
- collect data (e.g., through observation, documentation analysis, photographs, audio or video recording, quantitative data, interviews, questionnaires);
- locate and draw on research;
- critically interrogate practice and data;
- analyse/interpret and theorise [about] quantitative and qualitative data;
- develop and implement strategies to enhance student learning outcomes; and
- assess the extent to which strategies or action have improved learning or the learning environment.

Because they are so complex, it is important that people be allowed time to slowly develop, monitor, and improve their "tool boxes".

**What is the difference between inquiry and research?**

Robinson (2003) explores the overlap between the roles of practitioners and researchers and makes a powerful argument that good practice for practitioners requires them to conduct an ongoing inquiry into their individual and collective practice.

*Both [good research and good practice] require attitudes of openness, intellectual curiosity, and a willingness to step outside a frame of reference to see things in new ways. Most important of all is the ability to recognise that all research and all practice proceeds from a particular frame of reference.*

Robinson says that inquiry involves practitioners in examining the knowledge, skills, attitudes, and strategies that underpin their practice and in testing their assumptions. She adds that it should also be "both scaffolded on the research findings of others and productive of new knowledge about their particular context" (page 29). She argues that the development of teachers as researchers is a "professional necessity".

*Enhancement of the research role of teachers is central to sustainable school improvement, to effective teacher development, and, most important of all, to the professionalism of teachers.*

Like Robinson, Reid (2004) and Cordingley (2003) identify a close relationship between inquiry and research. However, they are each careful to draw a distinction between the two.

*There are a number of characteristics of properly constituted research, including that it uses appropriate research methods and methodologies, builds upon the literature in the area being researched, is an accessible activity open to peer review, and that the knowledge that is produced is applicable to other researchers and research contexts. Sometimes inquiry may meet these requirements, often it will not.*

Reid, 2004, page 8
This does not mean that there is any less intellectual rigour involved in carrying out inquiry than in conducting research. The key difference is in the developmental aim of practitioner inquiry and in the fact that it is not carried out with the intention, necessarily, of being made public. Removing the necessity to conform to the conventions for published research allows practitioners to focus on the complex task of interpreting evidence and research and applying the new knowledge to their practice.

Not all teacher inquiry aims to produce evidence and understanding in a public form that can be tested and reviewed by others. Some teacher inquiry simply seeks to enhance the practice of the inquirer through the use of evidence ... This kind of continuing professional development can accurately be described as evidence-based or informed practice.

Cordingley, 2003, page 108

Inquiry, then, draws on research methodologies and on published research but does not require practitioners to conform to strict research conventions. Some educators will, indeed, be researchers, but all of us should be inquirers into our professional practice.

**Why should we inquire?**

Inquiry provides the opportunity to critically reflect on what is happening in a given situation, with the ultimate goal of achieving improved learning outcomes for students. Inquiry is a learning process that helps practitioners to create new knowledge that they can use to inform their planning and action. However, practitioner knowledge is complex and much of it is tacit. This means that before practitioners can integrate knowledge from site-based inquiry or academic research into their professional knowledge, they need to go through a process of making their existing practices, knowledge, assumptions, and theories explicit. Inquiry often involves educators in testing their routine practices and assumptions and measuring their effects. This may happen in the normal run of events, or it may take place through more formal and systematic cycles of learning, as described in the Conducting Inquiry chapter.

When the evidence from inquiry or research conflicts with people’s expectations, it can create a sense of dissonance that has the potential to generate new knowledge and improved theories of practice.

Features that violate expectations can become the focus of attention; they may be noticed and remembered as inconsistent information when one is motivated to be attentive to all details (Stangor & McMillan, 1992), perhaps because the incongruities trigger explanatory reasoning to account for the violation of expectations (Schank, 1986). This kind of effort to explain discrepant cases is precisely what is needed for deep conceptual re-organization to occur (Carey, 1985; Strike & Posner, 1985).

Spillane, Reiser, and Reimer, 2002, page 398

Inquiry is not necessarily a comfortable process but, ideally, it should lead to a need to know more and a readiness to explore new approaches that may have better outcomes. As educators become more aware of their personal contribution to student outcomes, inquiry can provide a powerful intrinsic motivation for improvement.

Inquiry often involves educators in testing their routine practices and assumptions and measuring their effects. This may happen in the normal run of events, or it may take place through more formal and systematic cycles of learning.
An ISTE describes how she and her colleagues used a framework for analysing videos and transcripts of their practice. When they viewed a video of that first session, the facilitators were distressed at the gap between the principles they had developed and their actual practice. By confronting this gap, they learned valuable lessons about the use of inquiry in their own practice.

We are a group of seven facilitators involved in inquiry-based learning. We’ve developed a framework for analysing learning conversations and have been using it with videos and transcripts of our practice.

Our first session began with some nervousness. Each of us had been asked to bring a video clip of an interaction with a teacher or a group of teachers and a copy of the transcript with our thoughts noted on the side. The video clip was paused at different points for discussion. It’s not easy to watch and critique your own work, let alone with six colleagues involved. Just sharing the video clips created tension and illustrated both the potential and the risks in the use of video/audio recordings.

The whole session was also videoed to capture each facilitator presenting their video clip and the group’s feedback and questions. This recording proved invaluable for reviewing our interactions and for reflecting on what contributed to the difficulties we experienced.

For example, for the second facilitator, we had a transcript but no video clip. The transcript made it easy to find evidence to support our feedback – “you said … and you said …”. However, when we reviewed the video of the session later on, we realised that we’d interpreted events through our own lenses. Our feedback and many of our questions reflected our own personal biases and beliefs. Instead of seeking to understand, we became the “experts”. We critiqued and offered advice instead of checking our perceptions and clarifying ideas.

Reviewing the video enabled our group to notice behaviours that may have contributed to the tension during the session. We failed to adhere to the principles we’d developed for the project. Everyone wanted to have their say at the same time. We talked over the top of one another and completely forgot about the learning conversation framework. It was as if it had never been discussed. It was question, advice, question, and more advice. The more we deviated from the framework, the more defensive became the responses from the facilitator receiving the feedback.

**Learning from dissonance**

What aspects of inquiry and evidence-based practice are evident in this learning story?
In effect there were two levels of dissonance: the external dissonance among the group because of the nature of our interactions, and the internal dissonance for individuals as they noticed or were challenged about aspects of their practice revealed in their particular transcripts or video clips. The professional learning that occurred as a result of both internal and external dissonance may not have been so powerful if the group had not formed strong relationships and had not been committed to inquiry-based practice. Through the video clips, we learned things about ourselves that have been invaluable in progressing our practice.

The first thing we learned was that inquiry is not necessarily a comfortable or easy process, but it does lead to a thirst for knowing more. Secondly, having the evidence to support improvement is important, but it can also create challenging situations, such as how to use the evidence. However, the dissonance that evidence generates can be a powerful motivator for improvement if facilitators are at the level of preparedness to change.

We also learned some valuable lessons about trying new approaches and accessing new knowledge. It is not enough to talk about a new approach; we have to practise using the new approach many times and in different contexts. And we need to be explicit about guiding principles and protocols in order for new approaches to become an inherent part of practice. Most important, within an inquiry-based approach effective communication and strong relationships are inextricably linked to a successful outcome.

What would we do differently, or what could we improve on? It comes down to the three key ideas we’ve identified: noticing, understanding, and adjusting – being able to ask each other and ourselves such questions as: “What did I actually do and say?” “Why did I do it that way?” and “How might I do it differently next time?”

**Evidence-based practice**

**What is evidence?**

The previous section drew a distinction between inquiry and research. Two other words that tend to be used interchangeably are “data” and “evidence”. According to Earl and Katz (2002):

> Data are summaries that result from the collection of information through systematic measurement or observation or analysis, about some phenomenon of interest, using quantitative and/or qualitative methods.

Many commentators have made the point that educational institutions are awash with data and that much of it is not used well (Earl and Katz, 2002; Stoll et al., 2003). Data is only of value when its collection and analysis is purposeful. That means that it is tied to identified needs and goals and it is used to make decisions (Mid-continent Research for Education and Learning, 2003).

The value and utility associated with data come from the care with which the information has been collected and collated and from transforming these symbols into knowledge by shaping the information, organizing it and thinking about what it might mean, in relation to other available knowledge. This is a human activity that requires not only capturing and organizing ideas but also turning the information into meaningful actions (Senge, 1999).

Data becomes evidence when it is used as a means of asking deeper, more complex questions and focusing investigations. As Earl and Katz put it, interpretation is paramount:

*Data and statistics may provide the tools for measuring important educational concepts, but the numbers are only as good as the thinking that goes into the interpretation.*

... Interpretation requires time, thoughtfulness, reservation of judgments and open challenge of, as well as support for, ideas. Very often, it also requires more information along the way to clarify or extend the possibilities. Interpretation, then, is thinking – formulating possibilities, developing convincing arguments, locating logical flaws, and establishing a feasible and defensible notion of what the data represent.

Evidence, then, is the data we select – the relevant information that we notice from the external research work and from our own practice – and the interpretations we make from that data. The process of interpretation is one of sense making: asking questions about the data to create new and useful knowledge. Spillane, Reiser, and Reimer (2002) identify four steps in the sense-making process: noticing, framing, interpreting, and constructing meaning. This takes time, effort, and the use of prior knowledge.

Making sense of the data that has been gathered, whether it is formal, statistical information or less formal, qualitative information, requires the inquirer to ask serious, complex questions. The inquiry questions listed below are adapted from some developed by Stoll et al. (2003, page 145). They provide a useful way of reflecting on inquiry findings so that the interpretations made from data are meaningful.

- What do you think these findings tell you? Why?
- Now step outside the obvious interpretations and challenge your existing thinking and experience. What might these findings mean?
- Who are the different audiences that might be interested in these findings? What questions will they want answered? What evidence will they accept that your interpretations are correct?
- What don’t these findings tell you? What’s missing? What else do you need to know? How can you find this out? Who can help you?
- What questions do these findings raise for you? How will you go about answering these questions?
- How can you use these findings to help you increase your learning?

### How should we gather evidence?

To get a complete picture, it is important to take a systematic and ongoing approach to collecting, analysing, and interpreting data in order to gain a wide variety of useful evidence. “Useful evidence” is evidence that helps provide answers to the questions or hypotheses being investigated. This means that the tools and approaches used to gather data must relate to the purpose of the inquiry and the context in which it is taking place. Site-based inquiry can draw on informal evidence, such as observations and interviews, and formal evidence, such as standardised achievement data. Related research findings by others from outside the immediate context are another valuable source of evidence, provided it too is collected and actively interpreted for the purpose and the context.
The distinction between inquiry and research also points to the centrality of research to a culture of inquiry. Published research should be a rich source of information for those engaged in reflecting on their work practices or in developing policy, provided that it is not simply transferred unproblematically but is read in the context of the issues being explored through inquiry.

Reid, 2004, page 8

The use of published research is not a straightforward process; indeed, Corderley (2003) says that “The use of research and evidence-informed practice needs to be understood as at least as complex and technically demanding an activity as conducting the research in the first place” [page 108]. This means that the research selected has to be relevant to the context and to the desired outcomes.

Stoll et al. (2003) cite the following criteria for evaluating external knowledge:

- sophistication – quality of the information source, including appropriateness and rigour
- credibility – believability of the information, and expertise of those disseminating it
- relevance – whether the knowledge was considered useful and practical
- communication quality – clarity, style and readability
- content – whether the content confirmed or conflicted with existing knowledge, and whether it was valued, positive, and covered a topic in sufficient depth and breadth
- timeliness – if it was disseminated at an appropriate time and delivered in an ongoing manner.

pages 146–147

The Conducting Inquiry chapter describes a number of approaches to help in the collection, analysis, and interpretation of data so that it is useful for meeting student/teacher/school leader/ISTE learning needs within a particular context.

There are often complex ethical decisions to be made in gathering data for site-based inquiry. While the goal must always be to conduct a rigorous inquiry that will have worthwhile outcomes for students, inquirers must also treat participants with respect. Ethical decision making involves consideration of two fundamental principles:

- participants should not be harmed;
- participants should give their free and informed consent.

Developing an “inquiry habit of mind”

For inquiry to become part of a practitioner’s professional being (Reid, 2004), he or she needs to develop what Earl and Katz (2002) call an “inquiry habit of mind”. People with an inquiry habit of mind “develop a mind-set of being in charge of their own destiny and creating or locating the knowledge that will be useful for them along the way” [page 1010]. They engage in questioning, reflecting, and decision making, using data and evidence as critical elements in the process.

We consider inquiry to be a habit of mind; it is a dynamic iterative process with feedback loops that organize ideas towards clearer directions and decisions. By drawing on information in this way, inquirers move closer and closer to understanding the phenomenon of interest.

A person with an inquiry habit of mind:

• values deep understanding;
• reserves judgment and has a tolerance for ambiguity;
• takes a range of perspectives and systematically poses increasingly focused questions (Earl and Katz, 2002).


The fundamental nature of cognition is that new information is always interpreted in light of what is already understood (Brewer and Nakamura, 1984; Greeno, Collins, and Resnick, 1996). An individual’s prior knowledge and experience, including tacitly held expectations and beliefs about how the world works, serve as a lens influencing what the individual notices in the environment and how the stimuli that are noticed are processed, encoded, organized, and subsequently interpreted.

Robinson (2003) argues that because teachers’ theories of practice have such powerful consequences for students, they have a professional and ethical responsibility to investigate their adequacy.

Good practice requires the ability to interrupt automatic classroom and institutional routines in order to inquire, in a sufficiently rigorous way, into the adequacy of their assumptions about the nature of students’ needs and how to meet them.

Robinson also speaks of the need for educators to take on attitudes of openness, intellectual curiosity, and a willingness to see things in new ways, along with an understanding that all research and all practice proceeds from a particular frame of reference. These are all characteristics of a person with an “inquiry habit of mind”.

A number of researchers report findings that support Robinson’s contention that teachers’ assumptions can affect the evidence they notice, the way in which they interpret it, and the teaching experiences they provide as a result. This can have serious consequences for students. For example, Bishop, Berryman, Tiakiwai, and Richardson (2003) find that teachers’ deficit theorising about Māori students leads to low expectations and to teachers collecting evidence to confirm these beliefs. This creates a downward-spiralling, self-fulfilling prophecy of low achievement and failure for Māori students. Timperley and Parr (2004) note findings that many teachers, having perceived a child as a low achiever, will not change their teaching style or the nature of the conversations they have with that child, even when the child has achieved at a higher level.

All educators – not just teachers – share a responsibility to develop an inquiry habit of mind, including questioning their theories of practice, and so the inquiry process must begin with the inquirer critically reflecting on their own beliefs and assumptions. This involves asking hard questions about the lens through which they select and interpret data and the impact their decisions may have on the people with whom they work. It may also involve adding another lens, as Bishop et al. (2003) did when they interviewed Māori students about their thoughts on how best to improve their educational achievement.

While evidence must always be interpreted for the particular context in which the educator is working, Reid (2004) stresses the importance of inviting alternative perspectives by involving others.
Inquiry can be an exercise in navel gazing, or it can offer a powerful means to look outwards, engaging with the ideas, innovations and research that are circulating in the wider society. Questions such as: how do others see this issue? what are others doing? what does the research tell us? – are all ways of expanding the possibilities of inquiry.

Critical reflection and alternative perspectives may lead inquirers to make new interpretations from old data or to understand that they have been using the wrong measures. Reid suggests that critical forms of inquiry involve the following sorts of reflective questions:

- What am I doing in relation to this practice/issue/question/puzzle?
- Why am I doing this? (For example, what theories are expressed in my practice, and whose interests do these represent?)
- What are the effects of these practices? Who is most/least advantaged?
- What alternatives are there to my current practice? Are these likely to result in more just outcomes?
- What will I do? How will I monitor these changes in order to assess their outcomes?

(Adapted from Reid, pages 3–4.)

An inquiry inviting others’ perspectives

An ISTE reflects on feedback from participants to understand why her leadership of a staff meeting was successful in one context but not in another. By comparing what happened in two different places and times, she reinforces a key understanding and shifts her practice.

I work as an adviser. At the start of this year, I had a staff meeting that did not go well. We had difficulty staying focused and achieving what I wanted the meeting to achieve. I reflected on why this may have happened: why did this meeting not work when others have?

I was still pondering this question a week later when I interviewed a teacher and principal I’d worked with last year about what had been successful in that initiative and in my practice during that time. Whenever I worked with this staff in meetings, I ensured that the intended outcomes of the meeting were shared with the group at the start with the opportunity for negotiating change. Both the teacher and the principal commented that this was a key part of the success of the initiative for the following reasons:

- It gave participants the opportunity to have input into the direction of the session and to co-construct the intervention.
- It demonstrated my professionalism as an ISTE – I’d thought through what we were there for and the intended outcomes of the intervention.
- It showed the teachers that their time was valued and would not be wasted.
- It meant that if as a group we got off task, there was a reference point to refocus us.
- It gave purpose to the meeting.

I reflected on these comments and realised that I hadn’t shared my intended outcomes for the staff meeting with the new school this year. At the next meeting, I ensured that these were shared at the beginning and displayed during the meeting and that everyone understood they were up for negotiation. There was a marked change in the way that meeting went. The staff were generally focused and, on one occasion when two participants went off task, it was another staff member who referred to the outcomes to refocus us.

The principal later commented that it had been a productive meeting and that they’d achieved what they wanted to. This reinforced the need to share outcomes and also the need to allow for this in the time available. The whole experience brought home to me how evidence – in this case, feedback – can inform and contribute to shifts in my practice. Even relatively small changes such as this one are important!
Establishing a culture of inquiry

While inquiry can be carried out independently, it is most effective and results in deeper learning when it is conducted in learning communities characterised by a “culture of inquiry”. As Earl and Katz (2002) stress, “making sense out of data and ruminating about how it contributes to deeper or clearer understanding in a group brings a great deal into focus” (page 1020). The reflection that takes place in a culture of inquiry forces its participants to make their knowledge public and understood by their colleagues and provides a wider range of critical perspectives on the issue at hand.

Interacting with each other, local actors can explicate tacit beliefs, as individuals are prompted to summarize and articulate their interpretations in struggling to communicate their point of view. Once articulated, these frequently tacit opinions become visible to the individual and the group – open to discussion, debate, and negotiation, supporting group sense-making to find inconsistencies and flaws and to resolve them. Calling on the distributed expertise of their communities, local actors can mediate confusing situations by interacting with their colleagues, leveraging the knowledge that is situated within webs of social relationships (Sachs, 1995).

Cultures of inquiry flourish in environments characterised by trust, respect, and good humour.

Inquiry will only flourish in conditions that promote it. Since the basis of inquiry involves self and collaborative critical reflection about established practices and routines, it presumes an institutional and system-wide environment of trust. That is, educators must feel that they can reveal aspects of their practice about which they have concerns and explore these without it counting against them.

There is considerable evidence in the inquiry literature about the importance of establishing cultures of inquiry in schools (Earl and Katz, 2002; Reid, 2004; Stoll et al., 2003). The Teacher Professional Learning and Development: Best Evidence Synthesis Iteration (TPLD BES) reports that effective professional learning communities in schools support participants to process new understanding and its implications and focus on analysing the impact of teaching on learning. This is reflected in the way people talk to each other.

A condition that differentiated the change-supporting communities from those that reinforced the status quo was the set of norms that governed dialogue. When the dialogue failed to challenge problematic beliefs or to test the efficacy of competing ideas, the status quo was likely to be further entrenched.

Spillane et al., 2002, page 406

Reid, 2004, page 7

When members of communities characterised by a culture of inquiry encounter evidence that conflicts with their expectations, the dissonance that this creates becomes the catalyst for working towards improvement.

*Data become the window for identifying “what next” and instilling “urgency” as a way of unleashing the energy and excitement associated with embarking on a course of action that makes sense in fulfilling the moral purpose of schooling.*

Earl and Katz, 2002, page 1017

Earl and Katz (2002) argue that if school leaders are to establish a culture of inquiry, they need to:

- involve others in interpreting and engaging with data;
- stimulate an internal sense of urgency;
- make time;
- use critical friends.

The literature on inquiry focuses primarily on individual teachers and schools, but Reid (2004) argues for a new system-wide model in which inquiry is “the fuel that makes the system work” (page 11).

*It is just as crucial that institutions as a whole (such as schools and centres) and the central and district offices of education systems model and support inquiry. Unless this happens, inquiry approaches are destined to be constrained at best and fail at worst.*

Reid explains that the communities of practice at each layer of the system would be characterised by:

- the ongoing development of the skills and dispositions needed to engage in inquiry;
- structures and processes that model and support inquiry and research;
- an environment that nurtures the conditions for inquiry and research.

The *New Zealand Curriculum* reinforces the importance of establishing a culture of inquiry at the foundational level of the classroom:

*Since any teaching strategy works differently in different contexts for different students, effective pedagogy requires that teachers inquire into the impact of their teaching on their students. Inquiry into the teaching–learning relationship can be visualised as a cyclical process that goes on moment by moment (as teaching takes place), day by day, and over the longer term.*


The *Schooling Strategy* situates this “cyclical process” within a system-wide model of inquiry underpinned by evidence-based practice:

*Evidence-based practices are applied by government, principals, teachers, boards of trustees, teacher educators, and researchers, who base their thinking and actions on credible information, monitor the impact of their actions on student achievement, and adjust them accordingly. Families and whānau seek information about their children’s learning, and about family practices that support learning.*

Ministry of Education, 2005, page 17

*Reid (2004) argues for a new system-wide model in which inquiry is “the fuel that makes the system work”.*
Building a culture of inquiry

This story describes how an ISTE introduced a particular model of inquiry into a school; in this case, Robinson and Lai’s (2006) problem-based methodology. Sharing and comparing each person’s theory of practice around a particular issue enabled the group to reconstruct their theories to incorporate a deeper and more complex understanding of teachers’ roles in meeting their students’ needs.

I work as an adviser in secondary schools. In one school, a group of six secondary teachers were meeting together to look at ways of improving the learning of low-achieving students in years 9 and 10. They asked me to work with them on processes and ideas for developing a possible model for the school to use.

At the start, the teachers identified two school systems that they thought were getting in the way of learning for low-achieving students. These were how students were allocated to classes and the rigidity of the years 9 and 10 assessment and award system.

Using Robinson and Lai’s problem-based methodology, we worked through a series of critical questions designed to surface our beliefs about these learners and how these beliefs shape our practice. As an outcome, the teachers agreed to each work with one low-achieving student and to:

• interview the student to find out what helps them learn and what gets in the way of their learning;
• build a profile of the student’s achievements, strengths, and interests;
• experiment with their teaching practice to see if they could help the student achieve at a higher level.

After two terms’ work, one of the teachers came to a meeting with what she described as a revelation. She told us that she had thought that the most useful thing the group could do was to advocate for changes in school systems. But talking to the student, doing his profile, and experimenting with formative assessment and differentiation of lessons had made her think differently. She now realised that “nothing was going to change for these students until we teachers change what we do in our classrooms”. This stimulated much ongoing dialogue and sharing in the group as the teachers came to terms with this change from a single focus on school structures and systems to a more complex understanding that, although these are important, each teacher has to make a difference inside their classroom.

Implications for ISTE practice

The implication of a system-wide culture of inquiry and evidence-based practice is that ISTEs need to create their own cultures of inquiry and that these should interlock with those in the schools with which they work and in other parts of the education system.

Using inquiry and evidence to improve ISTE practice

As leaders of professional learning, ISTEs need to develop an inquiry habit of mind and to model inquiry and evidence-based practice in their work, as discussed in this chapter. In seeking to reflect upon and improve their practice, they should gain a range of perspectives by working within cultures of inquiry, seeking support and challenge from trusted colleagues, interrogating a range of data selected to address specific problems of practice, and drawing on external research. Collaborative inquiry groups can be seen as the “building blocks” of a culture of inquiry.
Supporting teachers’ and schools’ use of inquiry and evidence

ISTEs also learn alongside school communities as they support those communities to identify for themselves the changes that they need to make to their practice if they are to enable their students to achieve their potential. This requires ISTEs to establish mutually trusting and respectful relationships with the schools they work with, as discussed in the chapter on Communication and Relationships. ISTEs can also contribute to greater coherence across the system by making links between inquiries that are taking place at different sites and levels of the system.

In schools, the work of ISTEs involves supporting the use of inquiry and evidence at two levels. At the classroom level, they support teachers to collect, analyse, and use a range of information to make decisions about how well individual students are doing and how they can improve their teaching practices in order to help each student achieve to their potential. At the whole-school level, ISTEs support school leaders who wish to create cultures of inquiry to drive improvement in their schools. They help schools to mine their data, using it to challenge beliefs and assumptions and to help teachers and leaders to understand that it is in their power to help their students achieve higher levels of learning.

A useful way of fostering evidence-based inquiry at the school level may be to link it to the Planning and Reporting (PAR) framework that became mandatory when the National Administration Guidelines were gazetted in 2003. A report by NZCER researchers Hipkins, Joyce, and Wylie (2007) into the implementation of the PAR framework includes a useful summary of its intentions. The report describes how the planning and reporting framework is linked to some of the key reform ideas found in many other Ministry of Education documents:

- The focus is on improving achievement for all students.
- The teacher has a central role in improving student achievement.
- The focus is on student outcomes and the evaluation of the impact of “interventions” on these outcomes. Therefore trustworthy evidence needs to be used.
- There needs to be coherence across school policies.
- Improving student outcomes is a shared responsibility.

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Hipkins et al. report that there have been generally positive shifts in awareness of the intended outcomes of the PAR process, with schools identifying the focus on raising student achievement and setting goals with their students’ learning needs in mind. However, their report also identifies gaps. They suggest that schools need more support in:

- setting clear and measurable reporting goals;
- making data-supported teaching decisions.

In 2006 and 2007, ERO released three reports that raised similar questions about schools’ ability to “self-review”. Their focus was on the collection and use of assessment information to ensure that teaching decisions are meeting students’ learning needs. Like Hipkins et al., the ERO report concludes that schools need more support if they are to increase the effectiveness of their assessment practices.

Referring to the challenges and opportunities of self-review, a principal puts it well:

> A guiding focus needs to be what the school needs to reflect on and subsequently enhance so that there is a positive impact for student learning.

> ... self-review that is not developed from need, or involving those who will be implementing any suggested changes, can be a bit like sitting on a swivel chair, going around in circles with nothing achieved. This becomes a mere ticking of the boxes without purpose, and in today’s climate there is the ultimate possibility that we could “fold up” instantly.

Marion Fitchett, 2007

English (in development) and her colleagues have begun to explore how and why it is that linking evidence-based inquiry to the PAR framework may support schools to achieve the planned outcomes of specific professional learning initiatives while also enabling them to see the coherence across a range of reform ideas. At the time of writing, their ideas about what this might mean for ISTEs in their work with schools include:

- seeking a shared understanding and language to describe the effective use of data, linking to the “Teacher inquiry and knowledge-building cycle to promote valued student outcomes” diagram in the TPLD BES [Timperley et al., 2007, inside front cover];
- engaging in constructive talk and using “smart tools” [Robinson and Timperley, 2007] that enable people to explore and improve the assumptions and theories that underpin their practice;
- linking the notions of accountability and professional learning [see pages 165–166].

English proposes the use of the inquiry cycle outlined in the TPLD BES; another option is the use of the “Teaching as inquiry” diagram on page 35 of *The New Zealand Curriculum*. Certainly, it is essential that all ISTEs check teachers’ understanding about the key message in the curriculum that teaching is based on inquiry.

**Suggested activity**

The Conducting Inquiry chapter presents an inquiry cycle specifically developed for ISTEs that shows how they can build their own knowledge and expertise while simultaneously helping teachers and students to identify their learning needs and work towards meeting them. The cycle is based on the teacher inquiry and knowledge-building cycle proposed in the TPLD BES and is consistent with the findings that have emerged from INSTEP’s research activity. You may like to read that chapter now, perhaps using Stoll et al.’s criteria (page 85) for evaluating its value for your practice.

Pages 13–15 of the TPLD BES describe potential responses to new learning. As you read, you may like to use those ideas to monitor your own responses to the content, for example:

- How do you feel when the writing affirms your current knowledge, theories, and practice? What do you do?
- How do you feel when you encounter new ideas or ideas that are counter to your current knowledge, theories, and practice? What do you do?
Alternatively, you may like to consider these questions:

• What do you consider to be the relationship between the formal and systematic cycle of inquiry described in Conducting Inquiry and the concept of inquiry as a "way of being" or "habit of mind", as described in this chapter?

• What are the similarities and differences between the inquiry cycle described in Conducting Inquiry and any other inquiry cycles with which you are familiar?

• What are the deeper theoretical principles that you can see sitting beneath the ISTE inquiry and knowledge-building cycle, and how do you respond to them? [For example, do you agree that the measure for improvement in ISTE practice should be shifts in student outcomes?]

• Which of the inquiry approaches (see pages 52–73) that are described are familiar to you? Are approaches presented here that are less familiar to you and that offer possibilities for your own practice?

References


Introduction

Each educator’s expertise and understanding develop through the course of their professional lifespan and across all aspects of professional learning. Much of our learning takes place through complex interactions with others as we inquire into problems of practice in our local contexts. It is important for us to understand how we generate our knowledge and theories of practice. This helps us to take ownership of our professional learning, to locate it within the context of the wider educational community, and to direct it towards the purposes of schooling in a democratic society.

The New Zealand Curriculum represents New Zealand’s collective response to rapid change. Globalisation and technological progress are just two of the forces that make it imperative that we should transform our society into one that is based on knowledge. However, the knowledge needed to cope with constant change is itself ever-changing. Students need to be able to access knowledge “just in time” – at the point when they need it. This means that they need to develop the competencies that are essential to becoming active, lifelong learners, and it also means that our education system must itself be transformed to enable this to happen. All educators need to sharpen their focus on the learners, making sure that improvements in student outcomes become the “touchstone” for making decisions about whether new knowledge is worth having and about the actions they will take to improve student learning.

What is knowledge?

There are many definitions of knowledge. A dictionary definition is “the facts, feelings or experiences known by a person or group of people” (Collins English Dictionary). Knowledge is derived from information but it is richer and more meaningful than information. It includes familiarity, awareness and understanding gained through experience or study, and results from making comparisons, identifying consequences, and making connections. Some experts include wisdom and insight in their definitions of knowledge. In organisational terms, knowledge is generally thought of as being “know how”, “applied information”, “information with judgement” or “the capacity for effective action”.

National Electronic Library for Health: Knowledge Management Glossary
An individual educator’s knowledge is made up of the understandings that inform his or her practice, helping the educator to solve problems and make decisions. As it is accumulated, this professional knowledge becomes part of his or her “knowledge base”\textsuperscript{13} for practice.

Knowledge is not static: it grows and evolves as those who create and use it sift through new information to identify what is useful.

\textit{Information becomes knowledge when it is shaped, organised and embedded in some context that has a purpose, that leads one to understand something about the world (Postman, 1999).}

Stoll, Fink, and Earl, 2003, page 6

This need to see knowledge as a resource that people develop in order to use it has led Gilbert (2005) to suggest that present-day New Zealanders need to use “knowledge” as a verb, not a noun – to perceive knowledge as something we do rather than something we have.

ISTEs’ knowledge includes the following components:\textsuperscript{14}

\begin{itemize}
  \item \textbf{content knowledge:} knowledge of the facts, concepts, theories, structures, practices, and beliefs about subjects, disciplines, or domains of learning;
  \item \textbf{pedagogical knowledge:} knowledge of the concepts, theories, and research concerning effective learning, learners, and the goals and processes of education;
  \item \textbf{pedagogical content knowledge} [Shulman, 1986]: the interconnections between pedagogical knowledge and content knowledge (educators use this knowledge to make decisions about how to structure learning experiences, making knowledge accessible for specific groups of learners in ways that help develop deep understanding);
  \item \textbf{knowledge of learners:} knowledge of learners as individuals, including the diverse and complex ways they use their knowledge, beliefs, personal theories, and experiences to make sense of new knowledge;
  \item \textbf{knowledge of self:} knowledge of the cognitive, social, and affective factors that influence the ways in which they themselves teach and learn;
  \item \textbf{knowledge of context:} knowledge of the ways in which the physical and social context may shape the potential for learning.
\end{itemize}

This is not an exhaustive list and, in practice, the components are interwoven. Together, they make up the ingrained, tacit knowledge that educators draw on to make spontaneous decisions about events as they happen (Schön, 1983). The ability to make such judgments, often in a split second, requires deep understanding and means that educators also need to know:

\begin{itemize}
  \item why something is important;
  \item what to do;
  \item how to do it;
  \item when to do it. (Waters, Marzano, and McNulty, 2003)
\end{itemize}

\textsuperscript{13} The term “knowledge base” can also refer to the shared body of knowledge from which all members of a profession can draw. These materials use the term to refer to both individual and shared professional knowledge.

\textsuperscript{14} These components are more commonly used to describe the core knowledge needed to support effective teaching. Although the body of knowledge is different, the components themselves are equally applicable to ISTE knowledge.
Effective teaching is complex. As the *Teacher Professional Learning and Development: Best Evidence Synthesis Iteration* (TPLD BES) says:

> Effective teaching is much more than a set of prescribed behaviours; it is an activity that integrates a teacher’s existing cognitive structures (knowledge, beliefs and attitudes) and every aspect of the situation in which they practice.

Timperley, Wilson, Barrar, and Fung, 2007, page 201

If effective teaching is complex, then so too is effective ISTE practice. Indeed, Timperley et al. (2007) introduce the term ‘provider pedagogical content knowledge’ to refer to the knowledge and skills of ISTE. The term is defined in the glossary as follows:

> Provider pedagogical content knowledge: The knowledge and skills that providers of teacher education need if they are to assist teachers to make a difference to students. This includes knowledge of the pedagogical changes teachers need to make in order to improve their practice, as well as knowledge of how to make the content meaningful to teachers and manageable within the context of teaching practice.

Three conceptions of knowledge

Cochran-Smith and Lytle (1999) describe three conceptions that help us to understand educators’ knowledge. The first two conceptions depict commonly held images of knowledge:

- **Knowledge-for-practice** is the formal knowledge generated by research and passed on by expert educators to other educators in order to improve practice.
- **Knowledge-in-practice** is the “practical” or “craft” knowledge embedded in educators’ practice and identified through inquiry and reflection in and on practice.

In the past, educators have tended to separate these conceptions of knowledge in ways that have revealed a lack of respect for practitioners’ knowledge-in-practice (Zeichner and Liston, 1996). For their part, teachers have tended to view knowledge generated by research as not readily applicable to their practice. Hiebert, Gallimore, and Stigler (2002) suggest that past decisions have led to the creation of distinct educator communities that lack mechanisms to share their knowledge. While they were referring to the United States, it is possible to discern a similar pattern here, though with some notable exceptions.
The research community has worked toward the goal of building a professional knowledge base and has developed an infrastructure for recording, sharing, and accumulating knowledge. But the problems framed and the methods preferred have produced knowledge represented in forms that make it difficult for teachers to use. The teaching community works toward the goal of improving practice at an individual level and many individual teachers gradually learn from repeated observations over many trials. But no infrastructure encourages, or even enables them to record, share, and accumulate the knowledge they construct. Educators live with two professional communities struggling to bridge the chasm and build a knowledge base that is relevant for classroom practice.

Hiebert et al., 2002, page 12

Cochran-Smith and Lytle’s (1999) third conception of knowledge provides us with a view that does not separate formal knowledge on the one hand from practical knowledge on the other:

- **Knowledge-of-practice** is generated “when teachers treat their own classrooms and schools as sites for intentional investigation at the same time as they treat the knowledge and theory produced by others as generative material for interrogation and interpretation” (page 250). The process of systematic, critical, and collaborative inquiry into teaching, learning, and schooling places teachers at the centre of educational change and generates local knowledge with a democratic agenda. Often, this knowledge is also useful to the broader educational community.

The basis of this knowledge-practice conception is that teachers across the professional life span play a central and critical role in generating knowledge of practice by making their classrooms and schools sites for inquiry, connecting their work in schools to larger issues, and taking a critical perspective on the theory and research of others. Teacher networks, inquiry communities, and other school-based collectives in which teachers and others conjoin their efforts to construct knowledge are the major contexts for teacher learning in this conception.

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The third conception of knowledge may help us to work towards establishing a shared knowledge base that is valued and improved by teachers, researchers, and teacher educators working in a range of partnerships. Given that teachers already know a great deal as a result of their training and experience, their professional learning needs to inform and be informed by their knowledge-of-practice.

**How is knowledge constructed?**

The construction of knowledge is a dynamic, active process in which learners constantly strive to make sense of new information.

*Over time, this sense-making activity is made up of conscious attention, organising and reorganising ideas, assimilating or accommodating to new ideas, and constant reshuffling and reorganising in efforts to connect ideas into coherent patterns.*

Stoll et al., 2003, pages 24–25

What a learner understands from a new message or experience depends critically on the knowledge they already have.

*Sense-making is not a simple decoding of the ... message; in general, the process of comprehension is an active process of interpretation that draws on the individual’s rich knowledge base of understandings, beliefs, and attitudes.*

Spillane et al., 2002, page 391

The knowledge-of-practice conception may help us to work towards establishing a shared knowledge base that is valued and improved by teachers, researchers, and teacher educators working in a range of partnerships.
Timperley et al. (2007) describe four learning processes through which people may engage with new knowledge, each of which is associated with a different outcome. They describe the processes as “iterative” because deeper learning typically requires more than one opportunity to engage with new understandings and skills. The processes are not mutually exclusive; in fact, they may all be present within the course of a single learning opportunity.

The learning processes engaged when developing new understandings and skills involve cycles of one or more of the following:

- **Process 1:** Cueing and retrieving prior knowledge  
  **Outcome:** Prior knowledge is consolidated and/or examined.

- **Process 2:** Becoming aware of new information/skills and integrating them into current values and beliefs system  
  **Outcome:** New knowledge is adopted or adapted.

- **Process 3:** Creating dissonance with current position (values and beliefs)  
  **Outcome:** Dissonance is resolved (accepted/rejected); current values and beliefs system are repositioned or reconstructed.

- **Process 4:** Developing self-regulated learning in relation to testing the efficacy of teaching for student learning  
  **Outcome:** Student outcomes are monitored and teaching practice adjusted to maximise effectiveness.

The first learning process lays the foundation for Processes 2 and 3. In order to negotiate new knowledge, learners first need to cue their prior knowledge and engage their theories of practice. Sometimes the new knowledge will align with their current values, beliefs, and understandings (Process 2), and at other times it will not (Process 3).

The second learning process involves developing an awareness of new information that is consistent with learners’ current values, beliefs, and understandings. It can result in the acquisition of relatively discrete pieces of new knowledge and skills that are readily translated into practice or, when accompanied by more extended opportunities to engage with new learning, may result in more substantive development and change.

The third process involves the reconstruction of professional knowledge, a process that can challenge learners’ most basic values, beliefs, and understandings. Timperley et al. (2007) refer to this period of disequilibrium as creating dissonance “with current position”, rather than “with knowledge and/or skills”, because the impact of this can be so profound. (See also pages 156–158.)

The fourth process involves the use of self-regulated learning in which educators evaluate the efficacy of their teaching in terms of its contribution to valued student outcomes that are clearly defined. Educators monitor and adjust their practice according to what they discover. Elsewhere, Timperley (2007) has commented:

> If teachers develop a professional identity that involves the systematic monitoring of the impact of their practice on student learning with appropriate instructional adjustments, then searching for new knowledge and skills to enable them to develop their professionalism is likely to become part of the professional learning process. In this way professional learning becomes embedded in practice and targeted towards meeting the learning needs of students.

In Case 4, an ISTE supports a teacher to become more self-regulatory in examining the impact of her teaching on student learning.

Can you identify specific examples of these four learning processes in your own learning or in that of the teachers or school leaders you work with?

See pages 191–193 for further discussion of the professional learning processes proposed by Timperley et al. (2007) or read pages xi–xliii or chapter 2 of the TPLD BES.
The importance of communities

There is a growing consensus that much of our knowledge is constructed through dialogue with other people around a joint interest in "discourse communities".

Dissatisfied with overly individualistic accounts of learning and knowing, psychologists and educators are recognizing that the role of others in the learning process goes beyond providing stimulation and encouragement for individual construction of knowledge (Resnick, 1991). Rather, interactions with the people in one’s environment are major determinants of both what is learned and how learning takes place. This sociocentric view (Soltis, 1981) of knowledge and learning holds that what we take as knowledge and how we think and express ideas are the products of the interactions of groups of people over time. Individuals participate in numerous discourse communities (Fish, 1980; Michaels & O’Connor, 1990; Resnick, 1991), ranging from scholarly disciplines such as science or history, to groups of people sharing a common interest, to particular classrooms. These discourse communities provide the cognitive tools – ideas, theories, and concepts – that individuals appropriate as their own through their personal efforts to make sense of experiences. The process of learning, too, is social. Indeed, some scholars have conceptualized learning as coming to know how to participate in the discourse and practices of a particular community (e.g., Cobb, 1994; Lave & Wenger, 1991).

Putnam and Borko, 2000, page 5

The groups that Putnam and Borko call "discourse communities", Wenger (1998) calls "communities of practice". Wenger defines them as communities that are informally bound by what they do together and what they have learned by taking part in these mutual activities.
The term “community of practice” refers to a group of individuals who, through the pursuit of a jointly defined enterprise, have developed shared practices, historical and social resources, and common perspectives.

Stein and Coburn, 2005, page 17

Communities combine their practices, resources, and perspectives to form a shared knowledge base that informs their practice. Members of a community of practice have a common sense of purpose and a real need to know what the others know. Wenger (1998) explains that because they are “fully engaged in the process of creating, refining, communicating, and using knowledge” (page 1), communities of practice are able to “preserve the tacit aspects of knowledge that formal systems cannot capture” (page 3). He adds that they can structure an organisation’s learning potential in two ways: through the knowledge they develop at their core and through interactions at their boundaries. Stein and Coburn (2005) draw on Wenger in describing ways in which different communities of practice can stimulate new insights by interacting at their boundaries. The chapter Change for Improvement describes the way in which ISTE’s can act as the brokers of change in the “third space” – the place where the members of two communities collaborate to inquire into their theories and knowledge of practice (see pages 169–172).

According to Cochran-Smith and Lytle (1999), the conception of teacher learning as knowledge-of-practice depends on the assumption that “knowledge is constructed collectively within local and broader communities” (page 274). By taking a joint inquiry approach, professional development initiatives can help communities of practice to make their tacit knowledge explicit and to generate new knowledge.

In teacher learning initiatives that derive from the knowledge-of-practice conception, the point of action research groups or inquiry communities or teacher networks is to provide the social and intellectual contexts in which teachers at all points along the professional life span can take critical perspectives on their own assumptions as well as the theory and research of others and also jointly construct local knowledge that connects their work in schools to larger social and political issues.

The term “professional learning communities” has often been used to describe collaborative learning in educational contexts. Appendix II draws together some key ideas from research about the characteristics of effective professional learning communities. The Change for Improvement chapter presents empirical evidence from the TPLD BES about the nature of in-school professional learning communities that are effective in impacting positively on student outcomes (see page 161).
Developing a shared understanding within a community of practice

An ISTE describes how she used a social constructivist approach, along with a set of processes developed by Julia Atkin, to help members of a school community of practice to surface and examine their values, beliefs, and understandings. This process enabled them to develop and extend a shared knowledge-of-practice.

I have been working with the staff of a small rural school of five teachers, one of whom is a teaching principal. The previous year, the school had gone through a tumultuous time including bad publicity, a polarised community, a negative ERO report, disharmony among the staff, a high number of student stand-downs for a primary school this size, and finally the resignation of the principal.

Apart from the acting principal, all the staff are new to the school this year. In consultation with the community, it was decided to move forward by focusing on rebuilding relationships at all levels of the school. The school signed up to be part of the Ministry-funded Student Well-being Contract, and my role was as their facilitator for this contract.

I wanted to see how adopting a social constructivist approach to facilitation might enable the teachers to use similar strategies to make shifts in their classrooms. Social constructivism recognises that learning is a social act in which people are encouraged to question their own and others’ understandings and to deconstruct and reconstruct their ideas. Working within this theory could provide us with the framework for critical thinking, challenging assumptions and beliefs, creating cognitive dissonance, and co-constructed problem solving. Having used this approach in the past, I was reasonably confident that it would enable the teachers to engage in individual learning and to also work creatively and interactively to make the desired shifts with the whole school.

I suggested we begin with a whole-day workshop based on this approach. In designing the workshop, my thinking was both at a cognitive level and at a more practical level. At the cognitive level, I was challenged to deepen my own understandings of social constructivism. What should this truly look like in my facilitation, and how could I support the teachers to make links between the theory and their everyday practice? I also realised how important it was to acknowledge that I too would be learning as I worked alongside the teachers during the workshop. One example of this from the workshop was rediscovering the importance of all of us sharing examples of our prior learning and experiences. On reflection, I realised how critical this stage was to the development of supportive collegial relationships, as it led to each teacher volunteering areas of expertise that the rest of us had not been aware of.

In the practical area of facilitation, I was challenged from the onset when I realised from baseline data that the levels of understanding of the five teachers varied enormously. This meant that I had to be flexible and consider how the teacher who had very little understanding could be supported by the others while ensuring that everyone was learning something new. Using Julia Atkin’s (1996) approach from “From Values and Beliefs about Learning to Principles and Practice” allowed the teachers to set individual goals and to develop at their own pace.

The workshop began with teachers examining their values, beliefs, and attitudes; how these influence the principles that inform their work; and how they put them into practice in their classroom. This process encouraged the development of shared understandings and provided opportunities for clarifying and challenging our own and each other’s beliefs.

We also spent time unpacking a reading on social constructivist pedagogy and exploring the links between this pedagogy and the learning process we were engaged in. We discussed its application for the teachers in their own classrooms, and they then worked collaboratively to set goals for themselves to enhance their practice.
In Case 5, ISTE s working within Māori-medium contexts discuss how their understandings and experience of kaupapa Māori impact on their professional practice.

Culture is central to learning, and so we need to be aware of the range of socially constituted traditions for sense making that each individual brings to their community of practice.

The workshop appears to have established a valuable foundation for our work together. In subsequent interviews, teachers have commented that they have learned a lot more about themselves and each other – for example:

- the acting principal has reflected on how collaborating to make links between theory and practice has enabled her to support teachers more effectively in improving their practice;
- a teacher has described how he now places more importance on understanding and knowing his students and on being a real person to them:

  “You made us think more collaboratively. We are planning units together and discussing what others are doing. By encouraging us to share our stories and beliefs, you made me aware of how important it is to bring more of myself to the table to engage students.”

Whose knowledge counts?

[Wh]at counts as knowledge is closely related to the interests and power of social groups. What counts as knowledge in differing groups is different, but what counts as knowledge in schools and formal education systems is determined largely by the interests of the powerful.

Bates, 1980, page 9

Bishop and Glynn (1999) argue that culture is central to learning, and so they warn that we need to be aware of the range of socially constituted traditions for sense making that each individual brings to their community of practice. It is not acceptable to structure mainstream educational contexts based on the majority culture, as has often happened in the New Zealand context.

The traditions of discourse include the full range of language and behaviours of meaning-making, of agreeing, of arguing, of thinking and conversing. Further, in mastering these traditions, students learn how to operate within them and how to change them. The processes described make culture visible; indeed, a vital ingredient of education. Nevertheless, many educational practitioners continue to ignore culture as a central ingredient in educational interactions. Further, many educators remain ignorant of the fact that they bring to educational interactions their own traditions of meaning-making that are themselves culturally generated. This invisibility of culture perpetuates the domination of the “invisible” majority culture. However, it is not sufficient to simply raise awareness of other cultural backgrounds; it is also important for educators to critically evaluate how one set of cultural traditions (their own) can impinge on another (their “students”).

Bishop and Glynn’s model means that it is essential that communities acknowledge their own diversity as they reflect on and develop their knowledge-of-practice. It also means that educators’ understandings of learners and of different learning contexts must include understanding the ways different people learn and value knowledge. This requires self-knowledge – knowledge of the cultural backgrounds and ways of making meaning that we bring to a learning situation and of how this affects the learning of others. In addition, it requires the ability to make tacit knowledge explicit, to articulate that knowledge, and to interact with each other in such a way that new knowledge can be co-created.

Pages 143–144 present a set of guidelines that educators can use to climb the “ladder of inference”; that is, to identify, articulate, and check the validity of their tacit knowledge and to consider it in relationship to others with whom they are working.
Bishop and Glynn (1999) cite a study by Thornley (1997) at Otago University into the consequences of professional development experiences that denied the teacher participants the opportunity to bring their own sense-making faculties and prior experiences to bear on the new knowledge. These courses followed a set content, set approach, and set follow-up chosen by their deliverers. The teachers reported an overwhelming sense of frustration with an approach in which their only means of engagement was to accept or reject the new ideas.

They reported that they would have preferred to have been involved in a more “discursive” conversational approach; by this they meant one where they could be active collaborators and decision-makers. They wanted to engage with the new materials on their own terms, theorise about implications of the new approaches, discuss how the new curriculum would impact on the particular children and schools they worked with, and wanted to test their ideas out in real-life situations.

What are theories?

Theory: A set of organized ideas – concepts and their relationships, or principles – used to describe systematically a set of phenomena or to provide an explanation of those phenomena.

Gage and Berliner, 1991, page 283

A theory is typically a model that tries to provide a general explanation for how some part of the world works. A theory is not just a description of what happens but a statement of the underlying rationale for why something works in the way it does. It draws on observations made over time to explain, interpret, and predict behaviour.

Theories are important for all educators, whether teachers, researchers, policy makers, or ISTErs. They guide our decisions about what to notice and how to make sense of the data that we gather when inquiring into questions of practice. Theories help us to find a coherent structure for organising our data – to go beyond isolated observations to transform data into evidence from which to make generalisations. Sometimes inquiry helps to confirm a theory, and at other times the theory has to be modified in the light of unexpected findings.
**What forms do theories take?**

In education, we can consider several kinds of theory, each of which attempts to provide models to explain how or why learning occurs. However, all theories continue to grow and evolve and none of them provides a complete explanation of the complex ways in which we learn.

*What have we learned about learning? First, no one has yet been successful in developing a single comprehensive theory of learning that covers all the kinds of learning that we do, although many great minds since the time of Plato have tried. Instead, we have to be content to deal with a number of theories, each useful in its own way.*

Stoll et al., 2003, page 22

**Established theories**

Established theories are those that have become widely accepted over time and are applicable to many different situations. Educators often draw on accepted learning theories to make sense of a particular situation and consider the implications for practice. They include theories about:

- cognitive learning;
- social learning;
- social cognitive development;
- constructivist learning;
- social constructivist learning;
- co-construction;
- experiential learning;
- adult learning.

The theories about situated cognition and communities of practice referred to earlier (see also pages 159–161) are examples of emerging theories that are becoming generally accepted. They help to explain the roles of context, culture, and social interaction in people’s acquisition of new knowledge and skills.

*Early cognitive theories typically treated knowing as the manipulation of symbols inside the mind of the individual, and learning as the acquisition of knowledge and skills thought to be useful in a wide variety of settings (Greeno et al., 1996). Situative theorists challenge this assumption of a cognitive core independent of context and intention (Brown, Collins, & Duguid, 1989; Greeno & The Middle School Through Applications Project Group, 1998; Lave & Wenger, 1991). They posit, instead, that the physical and social contexts in which an activity takes place are an integral part of the activity, and that the activity is an integral part of the learning that takes place within it. How a person learns a particular set of knowledge and skills, and the situation in which a person learns, become a fundamental part of what is learned. Further, whereas traditional cognitive perspectives focus on the individual as the basic unit of analysis, situative perspectives focus on interactive systems that include individuals as participants, interacting with each other as well as materials and representational systems (Cobb & Bowers, 1999; Greeno, 1997).*

Putnam and Borko, 2000, page 4

Theories about “situated cognition” and “communities of practice” help to explain the roles of context, culture, and social interaction in people’s acquisition of new knowledge and skills.
Theories of practice

Educators’ “theories of practice” (Argyris, Putnam, and Smith, 1985), “practical theories” (Zeichner and Liston, 1996), or “theories of action” (Argyris and Schön, 1974) constitute another type of theory. These theories comprise the implicit beliefs, assumptions, values, knowledge, and emotions that individual educators bring to their practice. They include their personal theories – the judgments and evaluations that they make about themselves, others, and the world around them – and their understanding of general theories. They are the lens through which educators view their practice, guiding the decisions they make about the actions they will take, the ways in which they make sense of new information, and what they view as useful knowledge.

It is vital that educators understand and query the adequacy of their theories of practice because “so much of teaching is rooted in who we are and how we perceive the world” (Zeichner and Liston, 1996, page 23). As discussed in the chapter Inquiry and Evidence-based Practice, educators’ beliefs and assumptions can have profound consequences for those with whom they work. Bishop and Glynn (1999) contend that this can include contributing to “the continued marginalisation of Māori cultural aspirations, preferences and practices in the education system and the continuance of Māori ‘underachievement’ in a system that was in fact designed to perpetuate such underachievement” (page 13).

The TPLD BES (Timperley et al., 2007) affirms the significance of teachers’ theories of practice. [See Issue 3: Teachers’ Existing Theories, pages 196–201.] The writers discuss the need for ISTEs to engage teachers’ theories of practice and to help the teachers mediate competing theories by debating and challenging them in ways that enable the teachers to then negotiate improved theories and build their knowledge-of-practice. Teacher professional learning must include opportunities for participants to learn how to test and verify theories so that they can judge the worth of prior and new practices. The writers emphasise that:

the most effective theories are integrated around the notion of responsiveness to students. We suggest, therefore, that what matters is that teachers consider their teaching practices and the theories that underpin them, in order to maximise their students’ opportunities to learn – and that they test the effectiveness of their efforts in terms of student outcomes.

While educators’ theories of practice can have unintended negative consequences when unexamined, they can also be the source of new insights and ideas that advance their own work and that of their colleagues. Hatch et al. (2005) describe the way in which reflection and hypothesising on real “problems of practice” within a specific context can generate “local theories” that educators can test and refine across a range of contexts. By formally articulating and publishing these theories, educators can contribute to a broader professional knowledge base and the development of better theories for teaching and inservice education. Note that while Hatch refers just to teachers, the same argument could apply equally well to ISTEs.

By pursuing these “problems of practice,” teachers expand their understanding and improve their work. They begin to think about responses that cut across times, contexts, and individuals. They make inferences and develop hypotheses that suggest courses of action that may work both for their students at that moment and for the students in other classes and coming years. In short, when teachers address the “problems” and questions in their classroom, they make theory out of practice. They make local theories that they can apply in a number of related contexts and that other educators can learn from and build upon. These local theories can serve as the basis for a powerful knowledge-base different from – but no less important than – the knowledge-base that has emerged from conventional research on teaching and learning.

Hatch et al., 2005

Hatch et al.’s book is accompanied by an excellent website that contributes to the development of a shared knowledge base. You can find it at www.goingpublicwithteaching.org/index.html

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15 These three terms are often used interchangeably in the literature. See pages 133–140 for further discussion of the ideas underpinning them.
"Espoused theories” and “theories-in-use”

"Espoused theories” represent what someone says they would do in a certain situation. “Theories-in-use” represent what they actually do.16

When someone is asked how he would behave under certain circumstances, the answer he usually gives is his espoused theory of action for that situation. This is the theory of action to which he gives allegiance, and which, upon request, he communicates to others. However the theory that actually governs his actions is his theory-in-use, which may or may not be compatible with his espoused theory; furthermore, the individual may or may not be aware of incompatibility of the two theories.

Argyris and Schön, 1974, pages 6–7

If educators are to increase their knowledge of teaching and of themselves as learners, they first need to make explicit their espoused theories and theories-in-use and discover any inconsistencies between the two. In other words, professional learning must include opportunities for people to surface what they “say they do and their explanations for their actions” and “what they actually do and the real reasons for their actions” (Robinson and Lai, 2006, page 99).

Sometimes, people in a community of practice may be aware of a mutual concern but prefer not to acknowledge it. Heifetz and Linsky (2004) warn that the process of confronting the gap between people’s espoused values and their actual behaviour can be painful and involve loss. However, confronting such incongruence can create the dissonance that causes people to act to close the gap. (See pages 156–158 for a fuller discussion of the concept of dissonance.)

Leadership often involves challenging people to live up to their words, to close the gap between their espoused values and their actual behavior. It may mean pointing out the elephant sitting on the table at a meeting — the unspoken issue that everyone sees but no one wants to mention.

Heifetz and Linsky, 2004, page 33

16 See pages 133–140 for further discussion of espoused theories and theories-in-use.
Surfacing values and beliefs

An ISTE describes how challenge from a colleague led her to question her own ability to be contextually responsive and, in particular, to probe the theories and assumptions that sit beneath teachers’ practice. Drawing on ideas from Julia Atkin and Carol Mutch, the ISTE designed analytical tools that she could use to help a teacher to voice her espoused theories and compare them to her theories-in-use. For both teacher and ISTE, a period of dissonance led to new learning and changed practice.

I’ve been working with a small group of colleagues – “critical friends” – to closely examine our practice as facilitators. We were watching a video of a stimulated recall session I’d conducted with a teacher in order to identify aspects of my practice that I could improve upon. My colleagues praised my teaching and facilitation skills: good questioning, appropriate wait time, stillness, strong listening skills. However, one of my colleagues asked, “In what ways are you being contextually responsive to this teacher? How are you meeting her particular needs?”

This prompted me to ask myself how I could get beneath the surface. How do I establish what a teacher’s real needs are? How do I go beyond strategies and techniques to find out what assumptions they are making about their students’ learning that cause them to react in a particular way? How can I assist the teacher to achieve a mind-shift and lasting change?

Through raising awareness in teachers’, parents’ and school leaders’ minds about the assumptions that frame their teaching or expectations, new mind sets can be formed.

Atkin, 1996, page 6

Prompted by Julia Atkin’s writing on values and beliefs and Carol Mutch’s concept of “locating self”, I became interested in the importance of teachers surfacing their values and beliefs and exploring them in relation to their practice. I “talked out loud” with a critical friend to advance my thinking on locating self. Striving to move away from simple solutions, I wanted to find a way to help teachers to make explicit the assumptions, values, and beliefs that give direction to their actions.

I developed a questionnaire to elicit teachers’ values and beliefs and began to use it as a starting point, face to face, with teachers. This was a moment of significant discovery as I realised that, combined with identifying successes and struggles, the questionnaire provided a lens through which to inquire into the congruence between teachers’ values and beliefs and their classroom practice.

I began work with a teacher, examining underachieving students’ journals. Using a transcript of our conversation, my critical friends drew my attention to the teacher’s use of the word “laziness”. I developed an analytical tool to support the teacher in an analysis of the same transcript. In a further face-to-face discussion, I challenged her deficit thinking.

This led to an “aha” moment for the teacher:

“So I’m saying that a student is lazy ... but actually maybe it’s that my instructions aren’t clear enough. Or that I’m not giving them enough time in class.”
The teacher also identified shifts in practice:

"I am also changing my approach to journals. I’m stressing their importance and being positive about them, rather than just leaving them out. I think that your attitude as a teacher has a lot of influence on how the students will respond or what they will do. My strategies are also that as soon as I get their journals in, I mark them if I can that night. So I am trying not to take them in unless I can actually look through them, make a comment, and hand them back within two days – so that they get immediate feedback while their work is still fresh in their minds."

Through closely examining and explicitly stating her values and beliefs in relation to what was happening in the classroom, this teacher came to realise:

“If you are denying your own beliefs and values, then you are denying yourself. You are not an effective teacher because you are not being true to yourself. And if you are not true to yourself, then how can you stand up in front of a lot of kids and expect them to do something for you?”

In accordance with Atkin’s (1996) work, I have been able to establish a trusting relationship in which “individuals can bring into the open the values and assumptions behind their thinking and actions, an atmosphere of trust is developed, true dialogue can occur and an opportunity for collective learning can emerge” [page 11]. In working closely with me and using tools to examine her assumptions and analyse her practice, the teacher came to realise that what she was actually doing in the classroom was not congruent with how she believed she practised as a teacher. The experience represented a mind-shift for her and also confirmed learning for me: I had become more responsive and met some of her real needs.
Implications for ISTE practice

The ideas discussed in this chapter suggest that effective professional development does more than deliver state-of-the-art knowledge-for-practice in order to influence learning and practice. It involves professional learning, an “internal process through which individuals create professional knowledge” (Timperley et al., 2007, page 3) to build knowledge-of-practice. Professional development must provide opportunities for its participants to reflect upon, critique, modify, or replace aspects of the knowledge base and theories from which they make decisions about their practice. It should involve new kinds of collaboration that can result in “consequential changes in the lives of teachers and, as important, in the lives of students and in the social and intellectual climate of schools and schooling” (Cochran-Smith and Lytle, 1999, page 295). We would add that the changes may be equally profound in the lives of researchers, policy makers, and ISTEs.

Educators who take responsibility for building their knowledge-of-practice through ongoing and systematic inquiry across their professional lifespan understand that all knowledge and theories are contestable and that it is important to establish whether what they are learning is worth knowing (Cochran-Smith and Lytle, 1999). ISTEs need to ensure this understanding underpins their own learning and that of the teachers and school leaders they work with. Wherever possible, they should seek empirical evidence to decide whether the new information and theories they are considering are likely to have a positive effect on students and whether that effect is significant enough to justify the time and effort put into the learning process. As Timperley et al. (2007) suggest, when considering the content of professional learning, the key question is: “What do we need to know in order to deepen our professional understandings and extend our skills so as to have a positive impact on student outcomes?” This critical perspective is implicit in the inquiry cycle presented in the Conducting Inquiry chapter.

As described above (page 97), Timperley et al. (2007) coin the term “provider pedagogical content knowledge” to refer to the knowledge and skills that providers of teacher education need if they are to make a difference to students. These include knowledge of the pedagogical changes teachers need to make in order to improve their practice as well as knowledge of how to make the content meaningful to teachers and manageable within the context of teaching practice. Similarly, John Loughran (2006) calls for a pedagogy of teacher education that goes beyond the transmission of information about teaching. He states:

Teaching about teaching demands a great deal from teacher educators. There is a continual need for teacher educators to be conscious of not only what they are teaching, but also the manner in which that teaching is conducted ... the complexity of teacher educators’ work hinges around recognizing, responding [to] and managing the dual roles of teaching and teaching about teaching concurrently.

The ideas discussed in this chapter reflect the complexity of both teacher and teacher educator pedagogy. They have the following implications for ISTE practice.

First, we can conceptualise ISTEs as brokers who help to create connections between different communities of practice, using deliberate acts of facilitation to introduce new knowledge from research and to help uncover the knowledge that already exists in schools to build knowledge-of-practice. Such acts parallel teachers’ use of “deliberate acts of teaching” that focus learning to meet a particular purpose (Ministry of Education, 2003).
Second, it is vital that ISTEs draw from a wide knowledge base that includes a range of theoretical frameworks and have the judgment to know what to use with a particular set of learners, in a particular context, and in response to a particular problem of practice.

Third, it is crucial that ISTEs establish mutually trusting and respectful learning partnerships with members of the communities of practice with whom they work so that they can collaborate to make sense of the current situation and to agree on a shared purpose. This means being explicit – explaining what they are doing and why they are doing it so that their thought processes are available for discussion and reflection. And it means valuing the knowledge that teachers bring, understanding the sense-making processes that they use, and working together to create new knowledge.

Fourth, the process of inquiry must begin by deconstructing an authentic “problem of practice” within a particular context and making the participants’ knowledge and theories explicit. In this way, both ISTEs and teachers can identify the gaps and inconsistencies in their knowledge and theories of practice. ISTEs need to know how to use the dissonance that this creates to help motivate the ongoing inquiry, stimulate critical reflection, and generate new knowledge-of-practice.

Fifth, all participants need to acknowledge that all knowledge and theories are contestable and to agree that the main criterion for evaluating their efficacy will be their impact on student outcomes. One consequence of this is that teachers have the same right to query aspects of ISTE practice as ISTEs do to query theirs. It also makes teachers more open to the possibility that they will have to let go of some of their previous beliefs and assumptions in order to make sense of the new knowledge they are building.

The model of professional learning as a partnership between ISTEs and teachers that values the contributions of both researchers and practitioners brings with it inherent challenges. Putnam and Borko (2000) describe what happened in the professional development programmes they examined:

*New kinds of discourse communities for teachers, while potentially powerful tools for improving pedagogical practice, also may introduce new tensions into the professional development experience. For example, the university teams in all three projects struggled with the question of how much guidance and structure to bring to the conversations, seeking an appropriate balance between presenting information and facilitating teachers’ construction of new practices.*

*...The university teams in all three projects addressed these issues of balance by avoiding the extremes of either viewing teachers as merely implementing someone else’s pedagogical approach or attempting to empower them without introducing new pedagogical ideas. Instead, they drew upon the unique sets of knowledge and skills offered by researchers and teachers. As a result, the ideas that emerged in the discourse communities created within the projects were “joint productions” that furthered the understanding of all participants. Researchers, as well as teachers, came away with new insights about teaching and learning.*

ISTEs work with school communities of practice to build knowledge-of-practice and enable new learning that has the potential to bring about fundamental change in the practices of all those involved. This involves the development of relationships characterised by “interactive professionalism”, as described in the chapter on Communication and Relationships.

The ideas discussed in this chapter also suggest the need for members of ISTE communities of practice to develop mechanisms to surface, record, and share the new and amended knowledge and theories that emerge in the course of their work. Within that process, they need to find ways to collaboratively reflect on their knowledge, theories, and practice that value and respect the diversity of their backgrounds and the contexts in which they work.
A framework for exploring theories underpinning practice

An ISTE describes how the use of a framework for surfacing and analysing theories of practice has become a mechanism for growing both teacher and ISTE knowledge-of-practice.

I’m working with other facilitators in our institution on improving the effectiveness of the conversations we have with teachers after observing aspects of their practice. To do this, we tape the conversations and analyse them against a framework.

At first, we used a conversation framework that was valuable for agreeing on the observation focus and on how we used evidence to inform our discussion. However, as we reflected collectively on transcripts of the conversations, we became aware that our advice was only found to be useful if it matched the existing practice theories held by the teacher. If it didn’t, it was often discounted or taken on board in ways that were not easily transferred into practice.

We realised that we were using a new task for an old action. Observers would describe practice and move straight into giving advice without discussing the theories of practice that informed what had been observed. Nor were observers articulating or exploring, with those they’d observed, the theories that informed their feedback and advice for improvement.

It became obvious that we needed another framework to help explore the theories of practice that sit behind our decision making. So we developed the following framework to make us more aware of our assumptions and actions.

Theories of practice framework

1. My judgments about what was observed:
   “What is my evaluation of the situation?”

2. My assumptions about what lies behind practice:
   “Why do I think they did what they did?”

3. My judgments about better practice:
   “What do I think is best practice in this context?”

4. My intervention theory:
   “How should I feedback? How should I raise the ‘issue’?”
The first conversation I analysed using this framework was between myself and a teacher on her practice in reading instruction. I was able to see that we had not explored in much depth her assumptions about what’s important in early reading instruction before moving on to what she might do differently. I had not been particularly clear on my assumptions about early reading instruction, either. Instead, I had suggested improvements to what she was doing. The conversation may have had more impact if I had engaged the teacher with her assumptions and beliefs more deeply.

I find the framework questions a really effective tool for analysing my practice transcripts and reflecting on how effectively I am helping others to make sense of their practice. They are particularly helpful for surfacing beliefs and theories that might get in the way of changes to practice.

Reflecting on practice in this way is helping me to be clearer about the practice conversation I am about to have and to shape a more co-constructed conversation, one that is less manipulative. I now know that I need to ask the person I’ve observed the same sorts of questions so that they have an opportunity to explore their theories.

An example of this was when I was supporting a literacy leader in her leadership role. We’d identified that she has different beliefs about writing from some other teachers in her school. We were discussing an upcoming conversation she was to have with one of these teachers. I used the following questions to guide our discussion of the practice she’d observed:

- What were your judgments about what you saw?
- Why do you think the teacher did what she did?
- What do you think she should do?
- How will you raise this?

This made it easy for me to help her to examine her beliefs and to surface what she needed to explore further with the teachers and how she might do it.

Suggested activity

The Ministry of Education established the Iterative Best Evidence Synthesis (BES) Programme in 2003. To date [mid-2008], the programme has published six syntheses:

- The Complexity of Community and Family Influences on Children’s Achievement in New Zealand
- Professional Development in Early Childhood Settings
- Quality Teaching for Diverse Students in Schooling
- Quality Teaching: Early Foundations
- Teacher Professional Learning and Development
- Effective Pedagogy in Mathematics/Pāngarau.

Two further syntheses are forthcoming:

- Effective Pedagogy in Social Sciences/Tikanga ā Iwi

The BES homepage is www.educationcounts.govt.nz/themes/BES. The syntheses can be downloaded from here, or you may be eligible for free hard copies.
Looking through the above list, which of the syntheses would be of most relevance to you in your current practice? You could then:

- Obtain a copy, scan the contents page, and get a feel for how the synthesis is organised.
- Read the introductory section and think about what the main messages may be. You may like to take notes or discuss this with a colleague.
- Decide on a section that seems to link most nearly to your current questions, problems, or dilemmas of practice. Read this section, looking for knowledge and theories that are relevant to your current needs. Consider whether and how you could build these into your own professional learning.
- Read pages 13–15 of the TPLD BES, which describe potential responses to new learning. As you read, you may like to use those ideas to monitor your own responses to the content, for example:
  - How do you feel when the writing affirms your current knowledge, theories, and practice? What do you do?
  - How do you feel when you encounter new ideas or ideas that are counter to your current knowledge, theories, and practice? What do you do?

You may like to repeat this process with one of the syntheses that seems less directly relevant to your practice as you may find information that interests you, for example:

- The BES on Effective Pedagogy in Mathematics/Pāngarau has rich information on communities of practice.
- The BES on Professional Development in Early Childhood Settings identifies eight characteristics of effective professional development.

Many ISTEIs have already deeply engaged with the syntheses. With others in your community, you may wish to consider questions such as:

- What do you see as the main purpose for the Iterative Best Evidence Synthesis (BES) Programme as a whole?
- What role have the syntheses played in your own professional learning and practice to date, and what possibilities can you see for the future?
References


National Electronic Library for Health: Knowledge Management Glossary at www.library.nhs.uk/knowledgemanagement


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Communication and relationships in professional learning

The word “relationship” is one that appears to be simple but proves difficult to define. Essentially, it is about the connections people have with each other. The concept of “communication” is closely intertwined with that of “relationships” because one of the primary functions of communication is to create and manage relationships.

The purpose of communication in educators’ professional learning is to establish relationships that will support all participants to learn through an ongoing process of inquiry in which they co-construct their understandings about effective practice. This inquiry involves educators in systematic, rigorous, and critical reflection in, on, and for their practice.
While it is important for some of this reflection to take place in solitude, there is a growing consensus that learning is more powerful when it is alongside others who are engaging with similar problems of practice. This idea is supported by emerging theories about situated cognition and co-construction. Working with others offers people different perspectives on their beliefs and practices and can help provide the cognitive dissonance that can be the catalyst for new learning (see pages 156–158). As Osterman and Kottkamp argue:

*Because of the deeply ingrained nature of our behavioural patterns, it is sometimes difficult to develop a critical perspective on our own behaviour. For that reason alone, analysis occurring in a collaborative and cooperative environment is likely to lead to greater learning.*  
([Osterman & Kottkamp, 1993, p. 25]

Collaborative inquiry requires educators to establish ways of communicating with and relating to each other that support them to reflect on their deeper beliefs and assumptions and the consequences of their actions. It is especially important that they develop a sense of trust.

*To be open to questioning long-held beliefs, to be willing to examine the consequences of our actions, and to be engaged fully in the teaching endeavor is certainly a rewarding but also a very demanding effort. To be engaged in this sort of examination with others requires that trust becomes a prominent feature of these conversations among and dialogues between practitioners. Without those companions, and without that trust, our reflection on our teaching will be severely limited.*

([Zeichner and Liston, 1996, page 19](#))

Reid (2004) argues that these trusting relationships need to extend through a system-wide culture of inquiry that is focused on using democratic processes to achieve powerful and enduring change. Respect, honesty, and good humour also seem to be essential features of the relationships required for educators to jointly reflect in, on, and for action. Reid cites Dewey (1933) in suggesting that there are also:

*... at least three dispositions that are preconditions for reflective action:*

- **openmindedness**, by which he meant an active desire to listen to more than just one side, giving full consideration to different perspectives and alternative possibilities;
- **responsibility**, by which he meant the capacity and commitment to carefully consider the personal, academic and social consequences of actions;
- **wholeheartedness**, by which he meant a willingness to critically examine one’s assumptions and beliefs, as well as the results of actions, always with the intention of learning something new.

([Reid, 2004, page 7](#))

Because educators involved in professional learning are considering a variety of perspectives, pondering the consequences of their actions, and critically examining their assumptions and beliefs, there will be times when, with the best will in the world, people will experience tensions and misunderstandings in their relationships. This makes the ideas discussed in this chapter of crucial importance.

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17 See Appendix I for a discussion of these theories.
Building trust in an online environment

Collaborative inquiry requires educators to establish a high degree of trust: but how can we establish this when we can’t see each other? In this learning story, an ISTE describes some of the strategies she used to build trust and encourage teachers to engage in an online learning community.

Working as a facilitator in an online environment, I came to realise that asking the questions was only half the solution to stimulating quality discussion. Initially I was focused on sharpening my higher-order questioning skills and setting up quality hooks to stimulate deeper discussion and to involve more people. Responding online, however, requires considerable trust – more than I had acknowledged, as the feedback from teachers made apparent.

Teachers said they liked to lurk (read without responding). They liked to see what others were saying, and their responses to the posted professional readings were considered – they liked to have time to generate a response after checking that they were “on the right track”. So I was asking them to take a real risk in making public their ideas with people they didn’t necessarily know, especially as the contributions they posted were permanent and archived.

As a facilitator, I needed to develop strategies that would increase social presence in the online environment. When measuring social presence, we look for text-based clues that promote rich dialogue and support the learning community. High social presence in turn increases the engagement of the learning community.

The teachers needed to feel comfortable and valued and that their contributions were respected. Their feedback made me realise that it wasn’t the initial quality of the questions but the way I modelled my replies that encouraged them to participate. An opening self-disclosure from me was a great way to build trust: “I DON’T use clipart… In my job, I see…”. As the facilitator, I was putting myself on the line, too. Such self-disclosure modelled ways of responding, acknowledging that it’s all right to talk about yourself and your experiences in the classroom.

The nature of my feedback to those tentative early responses was crucial. Responding to every reply with a positive and personalised comment proved instrumental in building trust. (“Hey, Carolyn, that’s a good point you’ve raised.”) Knowing that their contributions were valued and responded to helped cement relationships and build confidence in sharing with others. Humour and the use of emoticons also helped break down barriers. :-) When responding to a comment, I would often ask a question: “What do you think about…?” Here was I, as the facilitator, reaching out my hand, inviting the respondent to trust and risk.

What I had not anticipated was the cascading effect and its impact on developing the online community into a learning community where things no longer had to be mediated through me and where real dialogue began to take place. When the teachers felt comfortable and knew a little about the other members, they started to ask questions of each other and to respond to the comments others made.

In an online environment, attention to building relationships and acknowledging the particular risk-taking required [because of the lack of visual cues] are crucial factors. They promote deeper levels of thinking and critical reflection and engagement, turning lurkers into active members of the community and reducing reliance on the facilitator.
Interactive professionalism

The term “interactive professionalism” seems to capture much of what is essential in the relationships and communication necessary to foster reflective inquiry and the co-construction of understandings about professional practice. The term was introduced by Fullan and Hargreaves (1996), who use it to describe the kinds of collegial relationships they think educators need to develop in order to achieve sustained improvement.

The greatest problem in teaching is ... how to create, sustain, and motivate good teachers throughout their careers. Interactive professionalism is the key to this. For us it entails:

- discretionary judgement as the heart of professionalism.
- collaborative work cultures.
- norms of continuous improvement where new ideas are sought inside and outside one’s setting.
- reflection in, on and about practice in which individual and personal development is honoured, along with collective development and assessment.
- greater mastery, efficacy and satisfaction in the profession of teaching.

Interactive professionalism is based on the assumption that people need to find ways of communicating with each other that will support them to inquire into the effect their practices are having on student outcomes. Embedded in interactive professionalism is the belief that if professional learning is to be directed towards change for improvement, then the relationships between ISTE and the individuals and communities with whom they work must be partnerships.

Interactive professionalism involves meaningful collaboration between stakeholders in all parts of the school system. This principle is supported by evidence that partnerships between educators and parents that are focused on student learning have a positive effect on learning outcomes (Alton-Lee, 2003). It is articulated in The Schooling Strategy, which calls for the development of a strong infrastructure to support all those who work within, or interact with, schooling.

At this stage in your reading, how well does the concept of “interactive professionalism” resonate for you? Is this a useful term or is there another that makes better sense to you? Keep these questions in mind as you continue to read and reflect.

All students deserve the best that the collective expertise, knowledge, and commitment of everyone involved in schooling can offer: teachers, specialist staff, families, whānau, principals, boards of trustees, communities, teacher educators, researchers, government, and government agencies.

Ministry of Education, 2005, page 7

What underpins interactive professionalism?

Collaboration and collegiality

A key feature of “interactive professionalism” is the establishment of collaborative work cultures (Fullan and Hargreaves, 1996). In collaborative work cultures, educators co-construct new meanings as they jointly inquire into real problems of practice. According to Hargreaves (2000):

There are increasing efforts to build strong professional cultures of collaboration to develop common purpose, to cope with uncertainty and complexity, to respond effectively to rapid change and reform, to create a climate which values risk-taking and continuous improvement, to develop stronger senses of teacher efficacy, and to create ongoing professional learning cultures for teachers that replace patterns of staff development which are individualized, episodic, and weakly connected to the priorities of the school.

pages 165–166

The greatest problem in teaching is ... how to create, sustain, and motivate good teachers throughout their careers. Interactive professionalism is the key to this.
The focus on collaboration is based on the assumption that educators learn through inquiry into the complexities of teaching and learning across the professional lifespan.

An across-the-life-span perspective on teacher learning is more relational – making salient the role of communities and intellectual projects of groups of teachers over time.

Cochran-Smith and Lytle, 1999, page 293

In a collaborative culture focused on better learning outcomes for all, practice is deprivatised.

Leadership must create conditions that value learning as both an individual and collective good. Leaders must create environments in which individuals expect to have their personal ideas and practices subjected to the scrutiny of their colleagues, and in which groups expect to have their shared conceptions of practice subjected to the scrutiny of individuals. Privacy of practice produces isolation; isolation is the enemy of improvement. (Elmore and Burney, 1999, p. 20)

Cited in Fullan, 2001b, page 264

Lima (2001) explains that “In collaboration, each individual participates with his or her share in a common endeavor whose result benefits everyone that is involved” (page 99). This makes it important to identify the knowledge and expertise that each person is able to contribute. If educators don’t believe that others have expertise from which they could benefit, they are not likely to see any benefit in working with and learning from each other.

Lima adds that, in practice, collaboration means different things to different people. This lack of clarity means that people may claim to work collaboratively while maintaining their individualistic practices and that communities may tacitly agree about the kinds of sharing that they deem safe. He argues that when cognitive conflict is carefully managed, it can inspire the individual creativity and divergent thinking that are essential for educational change. Carefully managed cognitive conflict can force people to make their knowledge public and understood by their colleagues, to confront their differences, and to negotiate their way to shared understandings. Lima concludes that the more we promote “real” collaboration and collegiality, in learning communities, around innovation and change, the more conflict we meet.

The more collegiality we create that is truly oriented towards innovation and change, the more conflict we will have. For promoters of school change through collegiality, the challenge is to find positive ways of dealing with this conflict and taking profit from it from a change perspective, rather than avoid or try to suppress it.
As Zeichner and Liston (1996) identify, trust is an essential component of collaborative critical reflection. Fullan and Hargreaves [1996] suggest, though, that while it is important to trust people, this is not enough because it creates too much instability when key individuals move on. Educators also need to trust in the processes that support the collective expertise of the organisations they belong to and that will improve their capacity to solve problems.

Collaboration may take many forms. Fullan and Hargreaves [1996] warn that while it is important to foster collaboration, leaders must not assume that collaboration takes one particular form and pressure teachers to adopt it. Rather, leaders should commit to the principle but empower teachers to use their judgment to select the collaborative practices that suit them.

Fullan and Hargreaves also warn that it is important not to overcommit to collaboration. While deep reflection requires opportunities to share and interact with others, educators also need personal time and solitude in which to reflect on their inner values, ideas, and goals and to locate and develop their personal voice.

Inclusiveness

Another feature of interactive professionalism is that it is inclusive. If educators are to develop inclusive professional relationships that honour diversity, they need to address patterns of dominance and subordination that are embedded in New Zealand’s educational system. A number of researchers have explored these issues and made proposals that may help educators to develop an inclusive pedagogy that will foster such relationships.

A literature review conducted by Gorinski and Fraser (2006) reports findings that families are key to children’s academic success and identifies the paramount importance of schools building strong reciprocal relationships with Pasifika families and communities. Gorinski and Fraser argue that a move to a more inclusive education system requires “a fundamental change in thinking and practice in schools, from a monocultural to a multicultural lens” (page 25). They call for “an alternative paradigm: a multicultural pedagogy concerned with equity, bicultural/multicultural perspectives, spirituality and an holistic approach” (page 12).

The Pacific Islands School Community Parent Liaison (PISCLP) project aims to “foster and encourage a closer relationship between school and Pacific Islands communities, and improve and increase Pacific Islands student achievement across the curriculum” (Ministry of Education, 2004) in the ways suggested by Gorinski and Fraser. Gorinski (2005) presents a case study of several schools involved in the project. She reports that each school took part in a range of initiatives that were contextually relevant and specific to its needs and that combined to:

- increase the participation of Pasifika parents;
- enhance the capability of the staff to engage in culturally inclusive teaching, communicate with Pasifika students and families, and network with other schools;
- achieve improved student participation, learning, and achievement.

Gorinski’s findings are consistent with the research of others that concludes that the development of trusting and respectful cross-cultural relationships between school communities and Pasifika parents and communities can enhance teaching and learning and empower families.

Gorinski and Fraser (2006) suggest that “In the first instance, schools may need to go out to their communities rather than waiting for parents to come to them” (page 25). To this end, the Ministry of Education (2006) has produced Connections and Conversations: Making Links for Learning. This DVD and handbook is designed to support facilitators to stimulate discussion in schools with the aim of improving their engagement with their parents and communities in ways that will ultimately lead to improved learning and achievement for Pasifika students. You can obtain a free copy of this resource by contacting the distributors via freephone 0800 660 662 or freefax 0800 660 663.
Bishop, Berryman, Tiakiwai, and Richardson (2003) investigated the experiences of year 9 and 10 Māori students in mainstream classrooms. They found that teachers’ deficit theorising about these students had created a downward-spiralling, self-fulfilling prophecy of Māori student underachievement and failure. The research team developed a professional development intervention called Te Kōtahitanga. The team showed that when classroom relationships and interactions are attended to, Māori students achieve improved learning, behaviour, and attendance outcomes and schools’ relationships with parents, whānau, and community improve.

This study has shown that the key to improving Māori students’ achievement is professional development that places teachers in non-confrontational situations where, by means of authentic yet vicarious experiences, they can critically reflect upon their own theorising and the impact such theorising has upon Māori students’ educational achievement. In addition, the professional development must provide situations where teachers are shown, and are able to practise in an on-going supportive manner, strategies that will change classroom interactions.

Bishop et al. suggest that “solutions to issues of power and control; initiation, benefits, representation, legitimisation and accountability can be addressed in mainstream classrooms by reference to Māori culture in ways that will eventually benefit all students” (page 11). In developing a new pedagogical model, they draw on Smith’s discussion of kaupapa Māori theory and practice. Smith (1997) identified a series of fundamental principles or metaphors that can be extrapolated from Māori-medium schooling into mainstream educational settings, including settings for adults’ professional learning:

- **Tino rangatiratanga (relative autonomy/self-determination):** Literally, this means “chiefly control” and figuratively, it means self-determination. When parents and students feel that they are able to take part in decision making, they gain a sense of ownership that supports learning.

- **Taonga tuku iho (cultural aspirations):** Literally “the treasures from the ancestors”, this refers to the cultural aspirations Māori hold for their children, including those messages that provide guidelines for relationships and interaction patterns. It implies that educators must create contexts in which Māori language, knowledge, culture, and values are treated as normal, valid, and legitimate. Bishop et al. (2003) warn, though, that educators must be careful to leave room for Māori learners to express their own complex and multiple personal and group identities by developing pedagogy that is “holistic, flexible and complex” (page 13).

- **Ako (reciprocal learning):** This principle means to teach and to learn and emphasises reciprocal learning. “Teachers and students can take turns in storying and re-storying their realities, either as individual learners or within a group context” (Bishop et al., 2003, page 13). The participants in learning share and value each other's sense-making processes.

- **Kia piki ake i ngā raruraru o te kāinga (mediation of socio-economic and home difficulties):** The principle of participation “reaches into Māori homes and brings parents and families into the activities of the school” (Bishop et al., 2003, page 13). The aim is to align the experiences that children have at home and those they have at school more closely.

- **Whānau (extended family):** “Whānau is a primary concept [a cultural preference] that contains both values [cultural aspirations] and social processes [cultural practices] ... [W]here the establishment of whānau type relationships in the classroom is primary, then a pattern of interactions will develop where commitment and connectedness are paramount, and where responsibility for the learning of others is fostered” (Bishop et al., 2003, page 14). Rather than transmitting learning from one person to another, learning takes place in a “spiral discourse” – a series of conversations in which the participants collaborate in telling and retelling stories.

- **Kaupapa (collective vision, philosophy):** “[S]tudents achieve better when there is a close relationship between home and school in terms of aspirations, languages, and cultures. These understandings can be extrapolated to mainstream learning environments to suggest the need to develop a common set of goals and principles and practices, which seek to ensure that all children will benefit from education” (Bishop et al., 2003, page 14).
Fundamentally, kaupapa Māori is about sharing power and control in such a manner that “culture counts” (Bishop and Glynn, 1999). The professional development approach developed in Te Kōtahitanga was based on these principles, especially the concept of “ako”: the concept of teacher as learner. (See page 141 for a brief discussion of the collaborative storying technique that the research team used.)

Bishop et al. (2003) identify the following characteristics of effective partnerships:

1. **Acknowledging the mana or expertise of each partner in the sense of the tino rangatiratanga that was guaranteed to Māori people in the Treaty of Waitangi.**
2. **Working collaboratively with their partner in culturally competent ways that allow the partners to define what culture means to them.**
3. **Learning from the partner and changing their own behaviour accordingly.**

What might kaupapa Māori pedagogy mean for your practice? You may like to precede your consideration of this question by reading the following two papers. Both are cited in the references and available online: *Te Kōtahitanga: The Experiences of Year 9 and 10 Māori Students in Mainstream Classrooms* (Bishop et al., 2003) and *A Literature Review on Kaupapa Māori and Māori Education Pedagogy* (Pihama et al., 2004).

### Creating a shared vision focused on outcomes

The members of communities of practice that are characterised by interactive professionalism create shared visions that shape their culture and the ways in which they work. Fullan and Hargreaves (1996) argue that it is essential that this vision building is carried out collaboratively and not simply imposed by educational leaders. Robinson (2004) emphasises that a community’s vision should be more than a set of statements on paper; rather, educators need to achieve “shared understandings of overarching purposes and of how those purposes are pursued through particular teaching and management practices” (page 42). Fullan (2001a) warns, however, that there are risks in building strong collaborative relationships if they are not also focused on the “right things”.

*Kaupapa Māori is about sharing power and control in such a manner that “culture counts”.***
In a wonderfully insightful observation, McLaughlin and Talbert make the point that strong teacher communities can be effective or not depending on whether they reinforce methods that, as it turns out, do not achieve results. In other words, weak collaboration is always ineffective, but strong communities can make matters worse if, in their collaboration, teachers (however unwittingly) reinforce each other’s bad or ineffective practice. This is why close relationships are not ends in themselves. Collaborative cultures, which by definition have closer relationships, are indeed powerful, but unless they are focusing on the right things they may end up beingpowerfully wrong … The role of the leader is to ensure that the organization develops relationships that help produce desirable results.

Powerful visions are focused on the “right things” – shared goals for student and professional learning – and incorporate a clear set of learning outcomes that can provide a measure of the community’s progress towards those goals.

Seeking new ideas

Another feature of interactive professionalism is that educators establish “norms of continuous improvement where new ideas are sought inside and outside one’s setting” (Fullan and Hargreaves, 1996, page 63). Elmore [2002] makes a powerful argument that professional development is the key to improvement. It provides the means through which educators can learn from each other, both within and at the boundaries of their communities of practice. He says, though, that professional development cannot be effective if we do not break down the current structures that isolate educators from each other and create new structures that help them to communicate with and learn from each other. This includes identifying those who have the knowledge and expertise to help students learn.

The practice of improvement should create more differentiated and flexible organizations in schools and school systems. The development and distribution of competence and expertise should result in more knowledgeable and powerful people operating in “boundary roles” as mentors, teacher leaders, and professional developers, as well as more knowledgeable and powerful people in the ranks of the teaching force and administration.

Leadership that supports interactive professionalism

Pages 161–163 of the chapter Change for Improvement discuss the characteristics required of leaders in a culture of change. The discussion here focuses on the role of leaders in fostering ways of communicating and relating that support interactive professionalism. Relationship building infuses everything that a leader does.

Who are the leaders in a culture of change?

Spillane, Halverson, and Diamond (2001) argue that leadership in school communities is distributed across different people who bring different kinds of expertise to addressing common problems. Similarly, Robinson (2004) argues that complex organisations need leaders at all levels. Fullan (2005) uses the terms “system thinkers in action” and “new theoreticians” to describe leaders at all levels of the educational system who “are working on the real problem of transforming real systems, learning by doing it” (page 14). Their goal is to establish patterns of interaction that help people to work and learn together, collaborating to build their own capacity to learn, change, and improve so that they can achieve better outcomes for their students.
ISTEs do not always have formal positions of authority in the communities of practice whose learning
they are facilitating. They do, however, offer educational leadership: they have the knowledge
and expertise required to help build the capacity, motivation, and commitment of individuals and
communities to engage in improvements in teaching and learning.

*It is the source of the influence that distinguishes leadership from coercion or force. People change
their minds or do what they would not otherwise have done because they accept the authority of the
influencer or the power of their ideas or argument.*

Robinson, 2004, page 39

Wherever they are based, ISTEs belong to overlapping communities of practice and carry ideas and
practices between them. They take on a “boundary role”, helping to build the collaborative relationships
that are necessary for educators to carry out joint inquiry in the “third space” where their communities
of practice overlap [Stein and Coburn, 2005; see pages 169–171]. Wenger (1998) uses the term
“brokers” to describe these highly skilled people who facilitate the exchange of ideas, perspectives, and
practices between different communities of practice. They do so using objects (such as curricula) that
are targeted enough to keep the work focused yet flexible enough to allow individuals from the different
communities to negotiate their meaning.

**What roles can a leader play?**

Contributors to the research literature use a variety of terms to describe the roles a leader may play.
The text below describes the following examples:

- critical friend;
- coach;
- external partner.

*ISTEs offer educational leadership: they have the knowledge and expertise required to help build the capacity, motivation, and commitment of individuals and communities to engage in improvements in teaching and learning.*
**Critical Friend**

The concept of a critical friend provides a useful way of characterising the relationship between ISTEs and their fellow educators and of exploring the educational leadership that ISTEs offer. The goal of a critical friend is to help individuals and communities to enhance their learning by providing new lenses through which they can refocus their work. Costa and Kallick (1993) define a critical friend as:

>a trusted person who asks provocative questions, provides data to be examined through another lens, and offers critique of a person’s work as a friend. A critical friend takes the time to fully understand the context of the work presented and the outcomes that the person or group is working toward. The friend is the advocate for the success of that work.

The concept of critical friendship is a popular one and seems to bridge the dichotomy between the need to foster cognitive conflict and the desire to promote friendly and empathic relationships. As Swaffield (2004) argues, there is a dynamic relationship between the two elements of the critical friendship relationship.

>[The] essence of critical friendship is not simply a balancing of the roles of critic and friend through emphasising either pressure or support, but rather a richness resulting from providing both ... Paradoxically, as “friendship” increases, involving the establishment and deepening of trust, so it becomes possible to increase “criticism”.

Lima (2001) warns that too much stress on the friendship side of the role “may compromise from the very outset the need for a true, deep, and critical exchange of views on the culture and the performance of the school and its teachers” (page 115). He argues that what schools really need are “friendly critics”.

>They need people from within and from outside who are not concerned with disguising their ability or willingness to look at the school from a different perspective and who do not feel the need to pretend they are friends in order to produce these judgements. These individuals hold a strong potential for promoting a change of frames of reference in schools. Of course, this should be accomplished in a friendly manner, by showing respect for the school and the teachers’ culture, within the framework of built-in mechanisms that are intentionally organized to promote the emergence of critique, divergence, dialogue and dynamic decision-making.

Lima does not believe that it is necessary to link any of these processes to external evaluation, as is common. It would be better to conceptualise the relationship as potentially reciprocal and to stress its roots in a strong ethic of care and interdependence in teaching.

>The central aim is to stimulate divergent thinking by introducing different views and new ways of looking at things in the school environment. Friendliness is certainly necessary to produce these outcomes in a manner that is acceptable for teachers. Friendship is not.
Being a critical friend

This episode demonstrates shifts in an ISTE’s practice as a critical friend as he applied new learning about the importance of challenging teachers to surface their assumptions and beliefs and compare them to their practice.

I work as an RT:LB Māori. Last year, senior management in a wharekura referred a teacher to me. Classroom management was the main concern. I met with the teacher and initiated a collaborative problem-solving process that I often adopt. We agreed on tasks and responsibilities for tasks. We gathered data and analysed it. We created an intervention in which I modelled advance organisers and a method for increasing student accountability.

After the teacher observed, we reversed roles and I gave feedback to the teacher on his practice in the intervention. The aim was to enhance student engagement and provide a stronger classroom structure. But there was minimal success in changing teaching practice. Case closed, handed back to management.

This year, the same teacher made a self-referral with the same concerns. We followed the collaborative problem-solving process again, but this time we began with an interview. A few weeks earlier, I’d been really inspired by a presentation at a national hui on the importance of surfacing our assumptions and beliefs. So my questions for the teacher were:

- What is your theory on effective classroom management?
- How would you describe your classroom management?
- What differences are there between your theory and reality?
- How will we close the gaps?

I wrote his answers to each question. We agreed on four strategies to try and close the gaps. We worked on the strategies and collected data to measure progress. Ten weeks later, I interviewed the teacher again, asking the same questions. Here are some of his answers:

What is your theory on effective classroom management?

- 16 May
  Students should be occupied at appropriate levels for 80–100% of the time. Tasks and expectations are displayed and students are aware of them. I check for task completion during the lesson.
- 4 August
  Students have interesting mahi at the right level. I’m in charge. I encourage the children and am enthusiastic. I give clear directions and sit beside students to provide support. The environment is positive and the lesson is well structured. I learn from other teachers.

How would you describe your classroom management?

- 16 May
  50% of students are engaged for 80–100% of the time; the remainder of students are engaged for 50% of the time. I use small-group instruction and monitor the others. I give instructions to children as they arrive and make sure tasks are displayed.
- 4 August
  100% of students are engaged for 90% of the time. I begin with lining up routines and warm-up exercises. I’m building my classroom routines, getting closer to students when I need to make sure they’re engaged.

What differences are there between your theory and reality?

- 16 May
  No reply.
- 4 August
  I’m probably not getting around often enough to some students. I’m not always recognising off-task behaviour. And when I recognise it, I don’t always act on it.
We looked at the data we’d gathered, comparing baseline information to recent results. Here’s one example, for observed on-task/off-task behaviour.

Ultimately, student engagement does not necessarily lead to improved achievement. But the observational data provides supporting evidence that the teacher has made positive changes to his classroom management.

Finally, we analysed what the teacher had said previously against the new interview data. I was amazed that there has clearly been a positive shift in teaching theory. The teacher has increased his expectations and is accepting responsibility for classroom management.

What made the difference between last year and this? I think two things: the teacher taking initial responsibility with a self-referral; and my serving as a critical friend who challenged him to examine the match between his beliefs and his practice.

Coach

Stoll, Fink, and Earl (2003) say that coaching can be a valuable support for schools, especially school leaders. Robertson (2004a and b) suggests a model of professional development in which leaders undertake coaching with a professional partner, working with them at the interface of theory and practice and developing theory in the process. The model she describes involves “shadowing and the observation of practice with reflective interviewing and feedback around set personal and professional goals” (2004b, page 44). In this model, it is important to maintain the principle of “coach as learner” and to build trust and understanding between the participants. The coach’s role is to help the leader critically reflect on his or her practice in order to make informed decisions about his or her own leadership. Responsibility for further leadership learning is in the leader’s hands. This means that both partners should be taught coaching skills and that they should discuss and negotiate the principles behind their coaching relationship.

Robertson (2004a and b) claims that coaching provides an outside perspective that helps leaders to discover and confront the discontinuity between their espoused values about how people learn best and their roles as leaders of their institutions and their actual theories-in-use. This process creates the possibility of social transformation.

Reflection on and clarification of educational platforms can bring a critical perspective to educational leadership theory development. Leaders are able to identify the principles upon which their leadership work is based – what they believe is important in the ways in which they work within their institutions. Coaching sets in place a structure that can provide leaders with support and opportunities for exercising considered, deliberated educational leadership as part of their daily practice. This should, then, also assist them to solve the dilemmas in their leadership practice and (if necessary) to change their practice.

Robertson, 2004b, page 46
By providing school leaders with the skills and experiences for discussing pedagogy and practice within a developing learning community, coaching empowers them to learn and improve as instructional leaders whose central focus is on making a difference for the students in their school.

**External partner**

ISTEs may be located inside or outside the community of practice whose learning they are facilitating. The former group has the advantage of knowing the context well. However, Guskey (1999) notes that school-based leaders often have limited time to access the latest ideas from research about ways to improve student learning. He argues that successful professional development draws together the experience, expertise, and resources of both internal and external leaders. Reflecting on his experiences over many years, Fullan (2001b) reports that:

> Time and again we find that seeking external support and training is a sign of vitality. It is the organizations that act self-sufficient that are going nowhere. And ... it is the schools that have their internal acts together that both seek outside support and know good ideas when they see them.

Annan, Lai, and Robinson (2003) support this view. They argue that effective conversations that focus teachers on evaluating and improving their own and others’ teaching practices require a balance between teacher-led reflection and inquiry and support from an external agent. External agents take the role of teachers, scaffolding their fellow educators as they engage with a complex new practice.

> At one level, teachers have to become powerful change-agents of their own core business. They have to take ownership of their contribution to student learning outcomes, and confront their ineffective ways of operating. At another level, teachers need expert support in developing this kind of talk, and inventing teaching practices that will significantly raise student achievement. Achieving this balance will result in teacher talk that will significantly change thinking and practice, and create better learning outcomes for students.

The Teacher Professional Learning and Development: Best Evidence Synthesis Iteration (TPLD BES) supports these claims, with the developers reporting that almost all of the studies that met their criteria for inclusion involved the use of external expertise. They stress, however, that the presence of external experts does not guarantee success, with most of the studies that had little or no impact on student outcomes also featuring the use of external expertise. To have a positive impact, experts need what the TPLD BES calls “provider pedagogical content knowledge”.

> Experts need more than knowledge of the content of changes in teaching practice that might make a difference to students; they also need to know how to make the content meaningful to teachers and manageable within the context of teaching practice.


**The need for emotional intelligence**

Leaders walk an emotional tightrope. On the one hand, they must challenge people to work through the cognitive conflict and, often, the sense of loss that accompanies the deep learning required to achieve change for improvement. On the other, they must mobilise people to commit to the change process and to work together towards a shared vision. For this they need emotional intelligence.

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18 Also referred to as change agents, external agents, external partners, external experts, external consultants, or visiting leaders.
People have always needed emotional intelligence, but in complex times people need it in spades. The culture of change ... is, by definition, rife with anxiety, stress, and ambiguity (and correspondingly with the exhilaration of creative breakthroughs). It should come as no surprise that the most effective leaders are not the smartest in an IQ sense but are those who combine intellectual brilliance with emotional intelligence.

Fullan, 2001a, page 71

Goleman, Boyatzis, and McKee (2002) say that emotionally intelligent (EI) leaders create “resonance” – they are attuned to both their own and other people’s feelings and are able to guide them in the right direction.

Under the guidance of an EI leader, people feel a mutual comfort level. They share ideas, learn from one another, make decisions collaboratively, and get things done. They form an emotional bond that helps them stay focused even amid profound change and uncertainty. Perhaps most important, connecting with others at an emotional level makes work more meaningful. We all know what it feels like to share in the excitement of a moment, the elation of completing a job well done. These feelings drive people to do things together that no individual would or could do. And it is the EI leader who knows how to bring about that kind of bonding.

Goleman et al. (2002) identify four intertwined domains of emotional intelligence, each of which adds a crucial set of skills for resonant leadership:

- **Self-awareness**: Self-aware people recognise and understand their own emotions. Self-awareness lays the foundation for the other domains.

- **Self-management**: Because they are attuned to their inner feelings, self-aware leaders are able to manage them. For example, they are able to control their temper.

- **Social awareness**: Social awareness includes the ability to empathise with others, allowing leaders to understand the appropriate thing to say or do in the moment and to sense the shared values and priorities that drive a group. “Empathy, which includes listening and taking other people’s perspectives, allows leaders to tune in to the emotional channels between people that create resonance. And staying attuned lets leaders fine-tune their message to keep it in synch” [page 38].

- **Relationship management**: Leaders who understand their own vision, values, and emotions and who are attuned to those of the group can then use their relationship management skills to catalyse resonance.
Responsive communication and relationships

ISTEs need to communicate and relate to people in ways that help them to make meaning collaboratively through joint inquiry. This means that they need to understand the ways in which people learn and to adapt the ways in which they communicate and relate to others in response to the changes they observe. It is becoming increasingly clear that the ways people make meaning of new ideas depend on complex interactions between three dimensions:

- their existing cognitive structures, including their knowledge, beliefs, and attitudes;
- their situation or context;
- the ways in which the new ideas are represented. (Spillane, Reiser, and Reimer, 2002)

Learning involves changes in these dimensions and in the interactions between them. To facilitate ongoing learning, then, ISTEs need to monitor: changes in people’s knowledge, beliefs, and attitudes; changes in the teaching context; changes in the ways people communicate about ideas; and changes in the ways in which those dimensions interact. They also need to observe the effect that their own involvement and the ideas they are presenting are having on the learning of the members of a particular community and respond to this by adjusting the ways in which they communicate and relate to them.

Emotionally intelligent leaders are better able to notice, recognise, and respond to the impact of change and new ideas because they are aware of their emotional as well as their cognitive impact. They understand that the same ideas and changes can have different meanings for different people. Waters, Marzano, and McNulty (2003) use the terms “first-order” and “second-order” change to describe these differences [see page 152]. Emotionally intelligent leaders are able to gauge the magnitude of change they are calling for and find ways to communicate that will support people through second-order change.

Fullan (2001a) uses the term “implementation dip” to describe the sense of dissonance people experience when they encounter innovations requiring new skills and understandings that challenge their sense of identity and competence. He suggests that emotionally intelligent leaders vary their style in response to people’s changing needs.

Leaders who understand the implementation dip know that people are experiencing two kinds of problems when they are in the dip – the social-psychological fear of change, and the lack of technical know-how or skills to make the change work. It should be obvious that leaders need affiliative and coaching styles in these situations. The affiliative leader pays attention to people, focuses on building emotional bonds, builds relationships, and heals rifts. The leader as coach helps people develop and invests in their capacity building [Goleman, 2000].

Emotionally intelligent leaders are better able to notice, recognise, and respond to the impact of change and new ideas because they are aware of their emotional as well as their cognitive impact.

Effective professional learning incorporates processes for making people’s current practices, knowledge, assumptions, and theories explicit. These processes help ISTEs and those they are working with to:

- identify the needs and strengths of their community and the individuals within it;
- generate the shared understandings that are essential for building strong collaborative relationships and establishing a shared vision for improvement;
- establish a culture of inquiry in which it becomes a habit to critically reflect on the impact of practice and use evidence to make decisions about future action. For ISTEs, this reflection includes considering what needs to change in the ways in which they communicate and relate to those they are working with.

Emotionally intelligent leaders are better able to notice, recognise, and respond to the impact of change and new ideas because they are aware of their emotional as well as their cognitive impact.
Changing responses over time

Fullan (2007) reports general agreement that change is a process that takes place in three broad phases: initiation, implementation, and institutionalisation (see page 167). Throughout, the leaders of the change process need to choose ways of working, relating, and communicating that suit the changing strengths, needs, and concerns of both the community at large and specific individuals. For example, at the initiation stage, they need to try to build a sense of ownership for the change process. When a community has actively sought an ISTE’s help, much of this commitment may already be present and the ISTE can focus more on offering guidance and sustaining momentum. When the ISTE is an external agent, this objective may be complicated by the need to overcome scepticism about “outside experts” who may not have knowledge of particular school needs, clients and systems” (Limbrick and Ladbrook, 2002, page 34). In some instances, school communities may reject potentially effective innovations and require assertive leadership to get them started.

The criterion here is eventual motivation to put energy into the reform direction – ownership, if you like. But note that ownership is something that develops over time if the ideas are good and if people have the capacity and opportunity to make informed judgments, which they may not be able to do early on.

Fullan, 2007, page 82

Regardless of how the process is initiated, implementation requires ISTEs to identify when they should apply pressure and when they should lend support. Stoll et al. (2003) suggest that this is the time when they move to a greater focus on the “critical” aspect of the critical friend role while retaining their sensitivity to the community’s comfort level and readiness for change.

Respect for individual confidentiality continues to be important ..., as is the ability to: help others to self-evaluate; present examples from elsewhere in such a way that teachers can reflect on the relative merits of each; challenge people to broaden and extend their self-perception; “referee” discussions; encourage, praise, clarify and revisit issues to help people maintain momentum; and, where necessary, play the role of confidant(e).

Fullan (2007) reminds leaders that “Ultimately, your leadership in a culture of change will be judged as effective or ineffective not by who you are as a leader but by what leadership you produce in others” (page 137). When communities reach the institutionalisation phase, it may be time for external consultants to withdraw. Increasingly, though, it seems that schools and teachers are asking that they maintain a “watching brief”. Bearing in mind that the change process is cyclic and dynamic, they want to have somebody who they know and who knows them that they can turn to when they encounter difficult problems of practice that need another lens. Fullan and Hargreaves (1996) suggest that external consultants might be more effective if they worked with small groups of schools on a continuing basis: “More time needs to be spent developing ongoing relationships and support for particular groups of schools they get to know exceptionally well.” (page 103).

Models and theories that support interactive professionalism

Theories of action

In 1974, Argyris and Schön published Theory in Practice: Increasing Professional Effectiveness, the first of a series of books that were to become deeply influential through the insights they provided into individual and organisational learning. In this first book, they argue that people’s behaviour is guided by and can be explained by their “theories of action”. They theorise that people can learn better by making explicit, understanding, and critically evaluating the components of their theories of action in relationship to a particular problem of practice. This idea underpins many of the communication and relationship practices advocated for professional learning today.
Argyris and Schön (1974) describe two types of theories of action. An individual’s theories of action consist of their “espoused theories” – what they believe they would do in a certain situation – and their “theories-in-use” – what they actually do. This is an important understanding: people’s actions are often governed by theories-in-use of which they are unaware and that differ from the values and beliefs to which they aspire.

Theories of action that are derived from people’s descriptions of how they act, or have acted in the past, and from the explanations they give for such actions are called espoused theories. Theories of action that are derived from firsthand observations are called theories-in-use. Because people are not always aware of what causes their actions, the theories that people claim to be using and the theories that are actually determining their behavior may not be the same.

Robinson and Lai, 2006, page 26

There are three elements to a theory of action:

- **Governing variables**: Those variables that people try to keep within an acceptable range. They include the values, assumptions, theories, beliefs, concepts, rules, attitudes, routines, policies, practices, norms, or skills that underlie people’s actions. Any action is likely to impact upon a number of such variables, and so any situation can trigger a trade-off among governing variables as those involved try to keep within their personal boundaries.

- **Action strategies**: The actions people take to keep their governing variables within the acceptable range.

- **Consequences**: What happens as a result of an action. These can be both intended (often expressed as goals or objectives) and unintended.

People’s actions are often governed by theories-in-use of which they are unaware and that differ from the values and beliefs to which they aspire.
The following example illustrates how this works:

A person may have a governing variable of suppressing conflict, and one of being competent. In any given situation she will design action strategies to keep both these governing variables within acceptable limits. For instance, in a conflict situation she might avoid the discussion of the conflict situation and say as little as possible. This avoidance may (she hopes) suppress the conflict, yet allow her to appear competent because she at least hasn’t said anything wrong. This strategy will have various consequences both for her and the others involved. An intended consequence might be that the other parties will eventually give up the discussion, thereby successfully suppressing the conflict. As she has said little, she may feel she has not left herself open to being seen as incompetent. An unintended consequence might be that she thinks the situation has been left unresolved and therefore likely to recur, and feels dissatisfied.

Anderson, 1994

Argyris and Schön (1974) perceive learning as the formation or modification of a theory-in-use. That is, learning involves the resolution of dilemmas that result from a conflict between some elements of a theory-in-use: governing variables, action strategies, or consequences. The basic dilemma is between a person’s desire to be effective and their desire to keep their theory-in-use and the behavioural world they have created constant. In the example above, the learner has kept her behavioural world constant by maintaining her sense of competence and avoiding conflict but may be left with the unintended consequence that the situation is fundamentally unresolved.

Argyris and Schön (1974) distinguish between two kinds of learning:

- single-loop learning, which requires the learner to reflect on his or her action strategies and adopt new strategies that will be more effective in achieving their governing variables;
- double-loop learning, which requires the learner to change his or her governing variables through deeper reflection on the assumptions that underpin them.

Argyris and Schön (1978) develop the metaphor of a thermostat to compare the two processes.

When the error detected and corrected permits the organization to carry on its present policies or achieve its present objectives, then that error-and-correction process is single-loop learning. Single-loop learning is like a thermostat that learns when it is too hot or too cold and turns the heat on or off. The thermostat can perform this task because it can receive information (the temperature of the room) and take corrective action. Double-loop learning occurs when the error is detected and corrected in ways that involve the modification of an organization’s underlying norms, policies and objectives.

In double-loop learning, the people in the room might decide to question whether they have set the thermostat to the right temperature or even whether they have chosen the right source of heat! Referring again to the example above, double-loop learning might occur if the learner questioned the value of suppressing conflict or the need to always appear competent.

Double-loop learning does not supersede single-loop learning. Single-loop learning enables us to avoid continuing investment in the highly predictable activities that make up the bulk of our lives; but the theory-builder becomes a prisoner of his programs if he allows them to continue unexamined indefinitely. Double-loop learning changes the governing variables (the “settings”) of one’s programs and causes ripples of change to fan out over one’s whole system of theories-in-use.

Argyris and Schön, 1974, page 19
This process can be represented as follows:

**Figure 4: Single- and double-loop learning**

![Diagram of single- and double-loop learning]

**Model I and Model II**

Argyris and Schön (1974) present two models that describe different theories-in-use. Model I describes the behaviour of a group of professionals that they studied. It is based on the values of unilateral control of the situation, “winning” (proving oneself right), and suppression of any data that does not fit the actor’s assumptions. Such control can produce defensiveness that inhibits communication. Argyris and Schön believe that Model I describes features of a theory-in-use commonly employed by people in difficult situations. They go on to present Model II, “a model of theories-in-use that is free of the dysfunctions of model I” (page 85). The following summary draws on a presentation by Absolum (2006), based on the original models proposed by Argyris and Schön.

<table>
<thead>
<tr>
<th>Model I – what we do</th>
<th>Model II – what we want to do</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Guiding principles [governing variables]</strong></td>
<td><strong>Guiding principles [governing variables]</strong></td>
</tr>
<tr>
<td>• Achieve the purpose as the actor defines it</td>
<td>• Valid information</td>
</tr>
<tr>
<td>• Win, do not lose</td>
<td>• Free and informed choice</td>
</tr>
<tr>
<td>• Suppress negative feelings</td>
<td>• Internal commitment to the choice and constant monitoring of its implementation</td>
</tr>
<tr>
<td>• Emphasise rationality</td>
<td></td>
</tr>
<tr>
<td><strong>Action strategies</strong></td>
<td><strong>Action strategies</strong></td>
</tr>
<tr>
<td>• Control environment and task unilaterally</td>
<td>• Control environment and task bilaterally</td>
</tr>
<tr>
<td>• Protect self and others unilaterally</td>
<td>• Protect self and others bilaterally</td>
</tr>
<tr>
<td><strong>Consequences</strong></td>
<td><strong>Consequences</strong></td>
</tr>
<tr>
<td>• Defensive relationships</td>
<td>• Minimally defensive relationships</td>
</tr>
<tr>
<td>• Low freedom of choice</td>
<td>• High freedom of choice</td>
</tr>
<tr>
<td>• Little public testing of ideas</td>
<td>• Public testing of ideas</td>
</tr>
<tr>
<td>• Reduced production of valid information</td>
<td>• Increased production of valid information</td>
</tr>
<tr>
<td>• Single-loop learning</td>
<td>• Increased likelihood of double-loop learning</td>
</tr>
</tbody>
</table>

Model II represents a consultative approach in which the participants in learning have “bilateral” control of the process, where winning is not being “right” but rather making better sense of the evidence, and where no dialogue is suppressed, even if it is painful. It requires people to pay close attention to their own behaviour and to the way they interact with others. Argyris and Schön suggest that “in general, Model-II learning tends to facilitate others’ learning, which in turn facilitates one’s own learning” (page 92). They say that in a Model II world, “research activities and learning activities would reinforce each other” (page 93).
The significant features of Model II include the ability to call upon good quality data and to make inferences. It looks to include the views and experiences of participants rather than seeking to impose a view upon the situation. Theories should be made explicit and tested, positions should be reasoned and open to exploration by others. In other words, Model II can be seen as dialogical – and more likely to be found in settings and organizations that look to shared leadership. It looks to:

- Emphasize common goals and mutual influence.
- Encourage open communication, and to publicly test assumptions and beliefs.
- Combine advocacy with inquiry (Argyris and Schön 1996; Bolman and Deal 1997: 147–8).

Smith, 2001, page 9

Fullan (2001b) says that a shift to Model II helps to generate the internal commitment that is essential to change.

Every significant Model II action is evaluated in terms of the degree to which it helps the individuals generate valid and useful information (including relevant feelings), share a problem in ways that lead to productive inquiry, solve the problem such that it remains solved, and do so without reducing the present level of problem-solving effectiveness. (p. 76)

Argyris, 2000, cited in Fullan, 2001b, page 194
More haste, less speed

An ISTE describes how her colleagues supported her to shift from patterns of interaction that were consistent with a Model I theory-in-use to ways of working that are more characteristic of a Model II theory-in-use.

I was working as a facilitator with a teacher of a year 9 English class of low achievers. After two terms, the students had made few gains in their learning, and behavioural issues were also becoming apparent. After a brief informal conversation with the teacher, we agreed to look at the possibility of adapting a successful reading and writing programme that another teacher and I had developed the previous year for a similar class. We also discussed the possibility of trialling a second programme that encourages students to take risks in their learning and to work beyond content that they can easily manage.

I provided the teacher with a draft of the reading and writing programme and a summary of the risk-taking initiative. I also drafted an agenda for the teacher to modify in the hope that this would speed things up at the next meeting. We had a lot to cover and only forty-five minutes to do so. My motive was to assist the teacher to enter the meeting as an equal, understanding the programmes and equipped to make practical and viable contributions to the discussion.

The teacher had endorsed the agenda, but shortly into our meeting, it became apparent that she had not read the material. I boxed on, mindful of our limited time frame. But by the end of our time together, I could tell that the teacher had ceased to be a partner in the discussion and in adapting the programmes. It had become clear to me that she was not sure of her role in our discussions, which also contributed to her lack of engagement.

The teacher had agreed to my videoing our meeting as part of my professional learning activities. Reviewing the video footage with my facilitator colleagues helped me to get a clearer picture of where things had gone wrong. The teacher had no ownership of this early phase of the process and did not engage in any of the proceedings beyond a token response to my promptings. I'd made the mistake of assuming all was well because she was responding positively to my suggestions. At no point did I check her understanding of what I was saying.

My colleagues and I discussed some alternative ways of working, which I then trialled in role plays with a colleague. We evaluated the results and decided on an approach much more in keeping with Model II for when I next worked with the teacher.

At the next meeting with the teacher, I openly expressed my concern that it would be difficult for her to participate as an equal if she was not prepared for the meeting. I offered her a hot drink and time to read through the material, recognising the value of sacrificing time for shared ownership in the initiative. When she had completed the readings, I checked her understanding and answered a string of questions she had about the programmes. Finally, we discussed some of the issues that might arise from applying the programmes.

At our subsequent meetings, we have been able to set the agenda together and have progressed to a stage of shared understanding about the programmes and mutual engagement in our discussions.

The key things I learned from this experience were:
- the need to be open and honest and to table my thoughts and concerns so that they can be validated and addressed if necessary;
- the importance of regular check-ins with the other person to establish a shared understanding even if it takes a little longer;
- the need to show respect for the other party, in this case by allowing them time to explore the supplied readings before moving on.
Problem-based methodology

Robinson and Lai (2006) build on Argyris and Schön’s (1974) work in presenting a model of collaborative inquiry that teachers, principals, and ISTEs can use to solve instructional problems and improve student achievement. The model — “problem-based methodology” (PBM) — was developed by Viviane Robinson and first outlined in her 1993 book *Problem-based Methodology: Research for the Improvement of Practice*.

Robinson and Lai (2006) conceptualise teaching practice as the application of solutions to practical problems. The solutions are provided by educators’ theories of action, which are usually tacit and often shared by fellow members of their community of practice. Substantive improvement depends on interrupting routines to check the thinking behind educators’ actions. In other words, it involves investigating the three components of educators’ theories of action: constraints (governing variables), actions (action strategies), and consequences (both intended and unintended).

Still drawing on Argyris and Schön, Robinson and Lai offer four standards for evaluating the adequacy of educators’ solutions to their problems:

- the accuracy of any factual claims;
- the effectiveness of the practice;
- its coherence: that is, whether the solution creates other problems;
- its improvability: the openness of the theory to feedback and revision.

The process of evaluation makes it possible to develop an improved alternative theory of action.

PBM requires the development of communication and relationship skills that allow participants in inquiry to build and maintain positive working relationships while undertaking rigorous inquiry that is clearly focused on investigating, evaluating, and improving practice. Even when people are conducting their own inquiry, they need such skills because the process of surfacing and examining theories of practice requires another person’s perspective.

Robinson and Lai characterise the ideal relationship between the participants in inquiry as a “learning conversation” in which different points of view are respected and treated as a resource for reciprocal critique and learning (page 53). Argyris (1990) first developed the concept of a learning conversation, which he compares to controlling conversations:

- In controlling conversations, the advocates of change push their ideas without inquiring into or even acknowledging the theory of action that explains the practices they want to change. They are driven by the need to protect their own views from challenge. This exacerbates the tension between the two goals.
- In learning conversations, people treat different accounts of a problem as a resource for learning better ways to think about and resolve it. They are open to learning from others about the adequacy of their beliefs, assumptions, and values. Their drive is for better quality thinking and reasoning. Because relationships of mutual respect are essential for examining and resolving differences between competing theories of action, there is less tension between the two goals.

According to Robinson and Lai, learning conversations have the following consequences for their participants:

- They can move from an implicit account of a problem to an explicit understanding that can be evaluated and revised.
- They can develop two-way relationships characterised by empathy and trust.
- They can establish a culture in which constructive critique of practice and shared responsibility for improvement is the norm. Relationships and improving practice become mutually reinforcing rather than competing goals.

Substantive improvement depends on interrupting routines to check the thinking behind educators’ actions. In other words, it involves investigating the three components of educators’ theories of action: constraints (governing variables), actions (action strategies), and consequences (both intended and unintended).
Annan, Lai, and Robinson (2003) argue that effective professional conversations involve the use of "learning talk" — talk that is focused on, and designed to improve, teaching and learning. They identify three interrelated categories of learning talk, each of which is essential to the inquiry process. They are:

- **analytical talk**: talk that analyses evidence of the impact of teaching practices on student learning;
- **critical talk**: talk that evaluates the outcomes of that analysis;
- **challenging talk**: talk about making changes to ineffective practices in ways that will enhance the impact on student learning.

The ladder of inference is a tool initially developed by Argyris (1990) to enable participants in learning conversations to inquire into disagreements and check the quality of the thinking that lies behind them. (See pages 143–144.)

By using the ladder, people can become more aware of what led them to make those claims and of the possible ways in which they could be wrong. When people realize their claims are not self-evident, and that other interpretations of the same behavior or events are possible, they become much more open to learning from others.

Robinson and Lai, 2006, page 45

Robinson and Lai stress that dilemmas between the need to maintain positive collegial relationships and the need to investigate and improve practice can arise daily in the course of professional conversations with fellow educators. Learning conversations and the ladder of inference provide ways for people to check where the tensions lie and how they can resolve the problem. They also claim that:

the use of PBM builds some of the conditions needed to create a culture of inquiry. It does so by showing how the tension between trust and critical inquiry can be resolved, and through providing an evaluative framework of competing theories of action.

page 200

The culture of inquiry fostered by the use of PBM is characterised by ongoing collaboration, is inclusive, and focuses on "critical examination of practice to improve students’ learning through describing, evaluating, and improving participants’ theories of action" [page 206]. That is, by focusing attention on competition between theories rather than competition between individuals, PBM can make possible the double-loop learning that leads to the co-construction of improved theories-of-action.
Narrative inquiry

Narrative inquiry is another model for shared professional learning that supports interactive professionalism. It is based on two assumptions:

- human lives are woven from stories;
- people construct their identities through their own and others’ stories.

The narrative inquiry technique involves creating a series of experiential narratives. The inquirer collaborates with the participants in an inquiry to record field notes, interviews, journals, letters, autobiographies, and oral stories and to use this material to create mutually constructed stories out of all of their lives.

Connelly and Clandinin (2000) recommend narrative inquiry as a way of capturing and investigating people’s individual, social, and cultural identities as they live them. Reading their stories gives others the opportunity to hear the participants’ voices and to critically reflect on their experiences.

We came to think of teacher knowledge in narrative terms, and to describe it in terms of narrative life constructions. The stories these narratives are built on are both personal, reflecting a person’s life history, and social, reflecting the professional knowledge contexts in which teachers live.

Gartner, Latham, and Merritt (1996) consider the value and purpose of narrative inquiry for professional learning in a range of fields. They suggest that:

The applications for narrative in an academic context are as varied as the stories themselves. Narrative enquiry gives permission to learners to tap into the tacit knowledge embedded in their experience as well as to learn from each other in the process. It also serves as a springboard for dialogue about the deeper issues of their professional discipline that may not be easily illuminated through other methods. Because narratives rely strongly on communication and relationships, they can facilitate connections between people and create a sense of “shared history”. Thus the environmental context for learning becomes one that supports the strengthening of collegiality and collaboration, and builds self esteem (Lindesmith, 1994).

Collaborative storying

According to Bishop et al. (2003), effective partnerships are developed through conducting a spiral discourse in which the participants in learning collaborate to tell and retell stories, co-constructing knowledge in ways that validate the diverse knowledge and identities of all. They developed a collaborative story-writing technique that draws on the narrative inquiry tradition.

We are suggesting a pedagogy where the participants in the learning interaction become involved in the process of collaboration, in the process of mutual story telling and re-storying, so that a relationship can emerge in which both stories are heard, or indeed a process where a new story is created by all the participants ... This new pedagogy recognises that all people who are involved in the learning and teaching process are participants who have meaningful experiences, valid concerns and legitimate questions.

Bishop and Glynn, 1999, page 201

Collaborative storying enables all participants to explore ideas, highlights, and conclusions in ways that help them to critically examine the assumptions and implications of the viewpoints that they have expressed.
Bishop et al. (2003) used this approach in Te Kōtahitanga, when they collaborated with students to create a series of narratives of experience that emphasised the meanings that each person gave to their experiences. They were able to use those narratives in the professional development phase of their project to counter, in a non-confrontational way, the effects of deficit theorising among teachers. They then developed a dynamic model of professional development in which the relationship between developers and teachers paralleled the relationship that was proposed between teachers and students. They recommend collaborative storying as “a very useful professional development tool that could well be used for pre- and in-service teachers’ personal reflection and professional development on a wider basis” [page 36].

Implications for ISTE practice

Learning is both an individual and a social process. Educators learn by interacting about problems of practice, and this requires relationships characterised by supportive collegial interaction. The term interactive professionalism (Fullan and Hargreaves, 1996) is a useful way of describing the ideas and principles that support such relationships. If professional development experiences are to support professional learning, they must model these principles, supporting all participants to construct knowledge collaboratively as they conduct joint inquiry at the boundaries between different communities of practice.

While interactive professionalism implies partnerships in which the knowledge and skills of all are shared and valued, it does not imply that everybody is the same. The participants in these new collaborative relationships are interdependent; each person brings their own contribution to the common endeavour. ISTEs bring a specific knowledge base from their own community of practice about the processes that support ongoing professional learning for educators [see pages 96–97]. This provider pedagogical content knowledge includes the ability to make decisions about the ways that they need to communicate and relate to people as the ongoing process of learning and change unfolds.

Whether or not they have a formal position of authority, ISTEs are educational leaders who help to create a culture of inquiry that will sustain continuing improvement. They aim to develop habits of learning that are embedded in day-to-day practice (Fullan, 2007). One way of conceptualising ISTEs is as critical friends (or “friendly critics”) who help educators “build a greater capacity for self-evaluation as well as open-mindedness to the constructive thinking of others” [Costa and Kallick, 1993, page 51]. Some are “external agents” or “visiting leaders” who offer expert support from outside. Stein and Coburn (2005) use the term “brokers” to describe people who facilitate connections and reciprocal learning at the boundaries of two or more communities of practice.

Whatever term is used to describe the ISTE role, the concept of interactive professionalism reminds each ISTE of the importance of treating their partners with respect, of valuing the knowledge that they bring, and of treating their own knowledge and theories as tentative. ISTEs must help make the knowledge and theories of all participants in professional learning explicit, treating them as a resource that has the potential to increase the collective capacity to learn, change, and improve. The ways in which ISTEs communicate must support this process, building purposeful relationships focused on shared goals for teacher learning and desired student outcomes. One way of achieving this is to use the ladder of inference.
Robinson and Lai (2006) suggest that the ladder of inference can help people to recognise the claims they make that they believe to be true and expect others to accept (see also page 140). Working up from the bottom, the ladder of inference proceeds as follows:

- **Pool of available information:** This is all the information relevant to the situation. The further people climb up the ladder, the more they are making an inference on the basis of this information and the greater the potential for disagreement.

- **Select:** People notice and select information from the pool. Different people will select different information.

- **Describe:** People name or describe what is happening.

- **Interpret and evaluate:** People interpret and evaluate what they have noticed and described in ways that reflect their prior assumptions.

- **Theorise:** People weave together their interpretations and experiences into a coherent theory of action that may or may not be true.

- **Conclude:** On the basis of their theories, people draw conclusions about the situation and what to do.

These conclusions inform people’s actions; they can also reinforce people’s assumptions and values, which (as indicated by the downward arrows) have already shaped the way those conclusions have been reached through the process of selection and interpretation of evidence.
Participants in a situation can test the validity of their understanding of the situation by comparing their different responses on each rung of the ladder. Robinson and Lai (2006, pages 48–49) provide a set of guidelines for getting on the same ladder and climbing it together:

1. As soon as you recognise you are on a different ladder from your colleague, do not climb any more rungs.
2. Slow down and stop advocating your own position.
3. Use your inquiry skills to identify the lowest point on your ladder at which the other person sees the situation differently.
4. Inquire into the disagreement until the other person confirms that you have correctly understood their point of view.
5. Check that the other person correctly understands your point of view.
6. If the difference remains, work out a way of checking out your differing claims that is acceptable to each of you. When you have checked out and revised your claims, climb the next rung of the ladder together.
7. Continue the process and see what you now conclude.

**Suggested activity**

This chapter has described a theoretical base for thinking about how ISTEs can communicate with other educators in ways that foster mutually satisfying collaborative relationships. In doing so, it has touched on a number of specific skills, attributes, and practices that ISTEs need if they are to achieve their goals for professional learning and student outcomes.

Some of these skills, attributes, and practices are listed below as a starting point for critical reflection and discussion. The word "must" is intentionally provocative – the intention is for you to debate these ideas, to think about how you would prioritise them, and to ponder on what is missing.

- ISTEs must be able to build relationships with others that are focused on a shared vision, which identifies specific measurable outcomes for professional learning and considers both changes in teachers’ practices and the effect of those changes on student learning.
- ISTEs must choose ways of communicating that support the development of those relationships.
- ISTEs must understand, respect, and value the knowledge and sense-making processes of all those involved in professional learning. This must include an understanding of kaupapa Māori pedagogy. (See pages 122–124.)
- The relationships ISTEs establish must be founded on trust. Without trust, people will not take the risk of participating in critical inquiry.
- ISTEs must be reflective practitioners, taking time to focus on their own values and beliefs both independently and collectively.
- ISTEs must make their theories of practice explicit to themselves and to each other.
- ISTEs must be open to criticism, modelling a world in which mistakes are an accepted part of the learning process and where conflict is conceived as being between competing theories of action rather than between competing people.
- ISTEs must be able to suspend their judgment and listen to what others are really saying.
- ISTEs must actively seek new ideas beyond their own communities of practice.
- ISTEs must regard diverse viewpoints as potential sources of better ideas and new breakthroughs.
- When inquiring into problems of practice, ISTEs must be able to combine rigour with respect.
- ISTEs must demonstrate emotional intelligence. (See pages 130–131.)
- ISTEs must be open-minded, responsible, and wholehearted. (See page 118.)
• ISTE must be friendly, empathic, and honest – at times, courageously so.

• ISTE must understand the importance of the context and purpose of learning and of getting to know and appreciate the learner.

• ISTE must understand the difference between first- and second-order change, recognising that this can differ for different people. They must provide support for those who are finding learning and change difficult.

• ISTE must be able to use and choose ways of talking (for example, analytical, critical, or challenging) that are appropriate to particular conversations. (See page 140.)

• ISTE must challenge their fellow educators to make time for professional conversations and to use learning talk in their everyday professional lives.

• ISTE must be able to provide feedback in ways that minimise defensiveness and maximise opportunities for people to reflect and to learn.

• While ISTE must be able to confront difficult issues, they must do so with an ethic of care and interdependency in mind.
References


Ministry of Education (2006). *Connections and Conversations: Making Links for Learning*. Wellington: CWA New Media. (Booklet and DVD. ISTEs can obtain free copies of this resource package by contacting the distributors via freephone 0800 660 662 or freefax 0800 660 663.)


Why “change for improvement”?

“Change” is a constant in today’s world; certainty is a thing of the past. In the face of such relentless change, Stoll et al. (2003) argue that “the agenda for reform must be redirected towards the essential purpose of education: learning – learning to create, solve problems, think critically, unlearn and relearn, and to care about others and the environment” (page 18).

Learning is not just for students but for all people at all levels of the education system. Educators must “learn how to change in order to help our pupils to learn to deal with change” (Stoll et al., 2003, page 20). As this quote implies, it is not enough just to learn. Learning must lead to change; that is, it must be enacted in practice and directed towards improvement. However, we cannot assume that because we have learned something new and put it into practice, it has resulted in improvement. The change has to result in improved outcomes that can be seen and measured. Specifically, it must result in improved outcomes for students.
The challenge is to build on the strengths which already exist in New Zealand schooling, so that there is rapid improvement for students who are not achieving, and continued improvement for high and average achievers.

Ministry of Education, 2005, page 5

Change for improvement is complex. It draws together theories about both learning and change and requires the development of a system-wide culture of inquiry focused on raising student outcomes through making evidence-based decisions about practice.

Learning, in the final analysis, is change. It is a sophisticated process that requires high-level thinking, conceptual understanding and thoughtful decision-making, liberally peppered with reserving judgement, self-monitoring and the humility and courage to accept the discomfort of uncertainty, reflect and rethink, and continue the pursuit of clarity in understanding.

Stoll et al., 2003, page 41

Sustainable change

When a system of inquiry that is focused on improving outcomes is embedded into educators’ practice, the result is “sustainable change”, also referred to in the literature by other terms, such as “sustainable improvement” (Reid, 2004) and “continuous improvement” (Fullan, 2005).

[Sustainable improvement] is enduring, not evanescent … Sustainable improvement demands committed relationships, not fleeting infatuation. It is change for keeps and change for good.

Reid, 2004, page 19

Sustainability is about the capacity of an individual, organisation, or system to learn, to change and improve, and to maintain and build on the improvements that have been made. In education, the focus is on changes that lead to sustained improvements in student outcomes.

Fullan (2007) explains that educational change may take place at any level of the system. He identifies three aspects of change, which he relates, for the sake of simplicity, to the classroom.

There are at least three components or dimensions at stake in implementing any new program or policy: (1) the possible use of new or revised materials (instructional resources such as new curriculum materials or technologies), (2) the possible use of new teaching approaches (i.e., new teaching strategies or activities), and (3) the possible alteration of beliefs (e.g., pedagogical assumptions and theories underlying particular new policies or programs).

For change to be sustained, the change process needs to address all three aspects.

The use of new materials by themselves may accomplish certain educational objectives, but it seems obvious that developing new teaching skills and approaches and understanding conceptually what and why something should be done, and to what end, represents much more fundamental change, and as such will take longer to achieve but will have a greater impact once accomplished.

Fullan argues that most reform strategies focus on structures, formal requirements, and event-based strategies and “do not struggle directly with existing cultures within which new values and practices may be required” (page 25). Because of this, they fail to provide the opportunity for the “reculturing” needed for sustainable change.
Four views of change

Various researchers present different views of change to distinguish between superficial or temporary change and the sustainable improvement that results when practitioners undertake context-specific inquiry into the impact of their practice on student outcomes. The section below discusses several such distinctions: fundamental change at the instructional core, adaptive versus technical change, first-order versus second-order change, and three levels of change.

Fundamental change at the instructional core

Elmore (1996) analyses two major education reform movements that took place in the United States in the twentieth century: the progressive movement and the large-scale curriculum development projects sponsored by the National Science Foundation. He argues that neither of these reform movements worked because they didn’t change fundamental patterns at the core of schooling, which he describes as follows:

By “the core of educational practice”, I mean how teachers understand the nature of knowledge and the student’s role in learning, and how these ideas about knowledge and learning are manifested in teaching and classwork. The “core” also includes structural arrangements of schools, such as the physical layout of classrooms, student grouping practices, teachers’ responsibilities for groups of students, and relations among teachers in their work with students, as well as processes for assessing student learning and communicating it to students, teachers, parents, administrators, and other interested parties.

Adaptive versus technical change

Fullan (2003, 2005) cites Heifetz and Linsky (2002) to distinguish between technical and adaptive change. Technical change involves people putting in place solutions to problems for which they know the answers. While this can be difficult, it is not as difficult as adaptive change, which involves addressing problems for which they don’t yet know the solutions. Adaptive change involves changing more than routine behaviours or preferences; it involves changes in people’s hearts and minds. Because the change is so profound, adaptive change can result in transformation of the system.

Every day people have problems for which they do, in fact, have the necessary know-how and procedures. We call these technical problems. But there is a whole host of problems that are not amenable to authoritative expertise or standard operating procedures. They cannot be solved by someone who provides the answers from on high. We call these adaptive challenges because they require new experiments, new discoveries and adjustments from numerous places in the organization or community. Without learning new ways – changing attitudes, values and behaviors – people cannot make the adaptive leap necessary to thrive in new environments. The sustainability of change depends on having the people with the problem internalise the change.

According to Fullan (2005), “Addressing the problem of sustainability is the ultimate adaptive challenge” (page 14). Because it conflicts with their deepest beliefs, adaptive change is a deeply unsettling process that can threaten people’s sense of identity and lead to resistance.

Adaptive change stimulates resistance because it challenges people’s habits, beliefs, and values. It asks them to take a loss, experience uncertainty, and even express disloyalty to people and cultures. Because adaptive change asks people to question and perhaps refine aspects of their identity, it also challenges their sense of competence. Loss, disloyalty, and feeling incompetent. That’s a lot to ask. No wonder people resist.

First-order versus second-order change

Waters, Marzano, and McNulty (2003) developed a leadership framework that describes the knowledge, skills, strategies, and tools leaders need to positively impact on student achievement. They based the framework on a meta-analysis of the literature that revealed a substantial relationship between leadership and student achievement (a correlation of 0.25).

An important aspect of the researchers’ model is the concept of the “order” or magnitude of change. First-order change is change that is consistent with prevailing values and norms, meets with general agreement, and can be implemented using people’s existing knowledge and skills. A change becomes second-order when it is not obvious how it will make things better, it requires people to learn new approaches, or it conflicts with prevailing values and norms. Second-order changes require leaders to work far more deeply with staff and the community. They can disrupt people’s sense of well-being and the co-operation and cohesion of the school community. They may confront and challenge expertise and competencies and throw people into states of “conscious incompetence”.

Different perceptions about the implications of change mean that a change that appears to be a solution to one person can appear to be a problem for another.

To the degree that individuals and/or stakeholder groups in the school or school system hold conflicting values, seek different norms, have different knowledge, or operate with varying mental models of schooling, a proposed change might represent a first-order change for some and a second-order change for others.

Waters et al., 2003, page 7

Three levels of change

Spillane, Reiser, and Reimer (2002) examine the difficulties reformers face in implementing policy at the local level. Their framework takes into account the complexity of the human sense-making process. They argue that, from a cognitive perspective, a key dimension of the implementation process is whether, and in what ways, implementing agents (individual educators) come to understand their practice, potentially changing their beliefs and attitudes in the process. Citing Marris (1975), they suggest that reform can involve three levels of social change. Those that require the most fundamental changes in behaviour are most difficult to implement because they also require fundamental changes in the knowledge structure of those who are to implement them.
In our cognitive framework, the nature of the changes sought by policy makers is also important because some changes involve more complex cognitive transformations for implementing agents than others. Focusing on the balance between continuity, growth, and loss, Marris (1975) identifies three levels of social change. The first level is incremental change, which requires little or no alteration of the extant purposes or expectations of the people undertaking the change. For example, changing the time at which a particular mathematical skill or topic is taught during the school year requires no alteration of the teachers’ existing instructional purposes and expectations. The second level of change requires growth on the part of those undertaking change, but extant purposes and expectations can remain intact. Such change can be incorporated into existing schemas and frameworks rather than undermining them. The third level of change represents loss for the implementing agent, in that it necessitates the discrediting of existing schemas and frameworks. This level of social change is the most difficult to achieve (Marris, 1975). The more fundamental the changes sought by an innovation, the greater the extent to which existing schemas must be restructured to form coherent understandings of the new ideas.

Spillane et al., 2002, page 415

Focusing on outcomes

The terms “change at the instructional core”, “adaptive change”, “second-order change”, and “third-level change” all describe the substantial change that results when educators experience deep learning that changes their beliefs, theories, knowledge, and practices. Change and improvement of this sort takes conscious effort that is focused on clear outcomes, it takes the right set of conditions in the professional learning context, and it takes time.

Research into the effects of professional learning and development reveals that we cannot assume that because people appear to have learned, it follows that they will change their practice or that because they have changed their practice, it follows that student outcomes will improve. In searching the empirical literature about the impact of professional learning on student outcomes, Timperley, Wilson, Barrar, and Fung (2007) found that:

- changed practice may not always be effective in creating the desired outcomes for students; indeed, a number of studies indicated negative or neutral student outcomes;
- teachers’ self-reports about their changed practices and improved student outcomes were not always supported by the evidence.

Educators at all levels of the system need to test the impact of changed practices on the diverse learners for whom they are responsible, using inquiry skills to judge when their practice is having the desired outcomes and when it isn’t and needs to be changed. When such evidence-based practices are firmly embedded, they can generate their own momentum.

Each view of change described above reflects the fact that “changes in beliefs and understanding are the foundation of achieving lasting reform” (Fullan, 2007, page 37). However, “Understanding can follow action” (Spillane et al., 2002, page 421). Learning may be deeper when it follows attempts to try out new practices, and so both practices and beliefs need to be addressed through a continuous cycle of inquiry within and between educators’ communities of practice.

Educators at all levels of the system need to test the impact of changed practices on the diverse learners for whom they are responsible, using inquiry skills to judge when their practice is having the desired outcomes and when it isn’t and needs to be changed.
Creating the right conditions

As alluded to above, the biggest message about sustainability to come out of the TPLD BES (Timperley et al., 2007) is how little we really know about the conditions that foster sustainable change. "Sustainability was not neglected in the literature, but it was treated as an article of faith rather than as a condition subject to empirical verification" (page 219). Working from a limited evidential base, the writers have identified a number of factors in the professional learning context that seemed to be associated with sustainability. These include:

- teachers having sufficient theoretical knowledge to make principled decisions about their practice;
- teachers having the skills needed to conduct evidence-based inquiry into the impact of their teaching on their students’ learning;
- leaders organising schools in ways that support teacher learning and inquiry.

An important innovation from the TPLD BES is the development of an inquiry and knowledge-building cycle for teachers that enables the "co- and self-regulated learning" that they associate with sustainability. This is a process of iterative inquiry that shows how teachers can collectively and individually identify important issues, acquire the knowledge they need to solve them, monitor the impact of new approaches, and adjust practice accordingly. (See TPLD BES, pages xli–xliv.) The Conducting Inquiry chapter unpacks a similar cycle of inquiry that has been developed for iSTEs. The use of these inquiry cycles may assist iSTEs, teachers, and other educators to develop evidence-based skills of inquiry that will allow them to test the impact of new practices and construct more effective theories of practice.

It takes time

The learning that is required to achieve sustainable change is deep, intentional, and complex; it cannot be imposed. Writing in 1975, Marris stressed how vital it is to allow everyone involved in change the time they need to make and share their own meaning out of new ideas or experiences.

> No one can resolve the crisis of reintegration on behalf of another. Every attempt to pre-empt conflict, argument, protest by rational planning, can only be abortive: however reasonable the proposed changes, the process of implementing them must still allow the impulse of rejection to play itself out. When those who have power to manipulate changes act as if they only have to explain, and when their explanations are not at once accepted, shrug off opposition as ignorance or prejudice, they express a profound contempt for the meaning of lives other than their own. For the reformers have already assimilated these changes to their purposes, and worked out a reformation which makes sense to them, perhaps through months or years of analysis and debate. If they deny others the chance to do the same, they treat them as puppets dangling by the threads of their own conceptions.

Marris, 1975, page 166

Thirty years later, the pace of change has continued to accelerate. The capacity to learn is essential for humanity to adapt and survive. Ironically, it has never been harder to find the time that is needed for such learning.

> Negotiating uses of time is not an easy task in a world that is routinely speeding up and demanding more of everyone, always more quickly. One of the challenges of the twenty-first century will be finding ways to capture and dedicate the time necessary for the serious business of learning.

Stoll et al., 2003, page 41

The findings in the TPLD BES support this claim, with many of the core studies (those that reported on programmes that achieved substantive change) taking place over extended periods of time and incorporating multiple opportunities for learning.

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19 Self-regulated learners constantly seek the answers to three questions: “Where am I going?”, “How am I going?”, and “Where to next?” The idea of co-regulation arises from the fact that their learning is collaborative as well as personal.
The drivers of change

What are the drivers of change that can bring about sustained improvement in the practices of individual educators and the organisations and systems in which they are situated? The diversity of people and organisations means that different drivers are present in different contexts and at different times.

Moral purpose

Fullan (2001b, 2003, 2005, 2007) argues that change should be driven by a sense of moral purpose. He says that a sense of moral purpose fosters a focus on outcomes that gives coherence to change initiatives. It makes it clear what is and isn’t important, and so helps educators to decide what they need to do. According to Fullan, it is the role of schools to make a positive difference in their students’ lives, and so change must be motivated by a desire to improve the life chances of young people. Echoing Dewey (1907), he adds that change should also be driven by the desire to create a better and more equitable society.

Public schools need to develop what Coleman (1990) termed “social capital” – to help produce citizens who have the commitment, skills, and disposition to foster norms of civility, compassion, fairness, trust, collaborative engagement, and constructive critiques under conditions of great social diversity. Schools also need to develop intellectual capital – problem-solving skills in a technological world – so that all students learn. This too is a moral purpose. To become committed to the development of social and intellectual capital is to understand the goal of moral purpose; to address it productively is to delve into the intricacies of complexity and change.

Fullan, 2001b, page 17

In New Zealand, we might talk about moral purpose in terms of social justice or the need to have a sense of professional purpose. Our current Schooling Strategy is founded on the belief that “As a nation, we want each student to be equipped with the knowledge, skills, attitudes, values, and sense of identity they need to give them the best chances in life” (Minister’s Foreword, Ministry of Education, 2005, page 1). Education, it says, is “central to what it means to be both a New Zealander and a global citizen in a changing world” (page 5).

In 2001, Durie set out a framework for considering Māori education. He introduced three goals that offer a moral purpose for education, and this moral purpose is consistent with commitment to what he calls the “principle of indigeneity”.

Although education has a number of other goals including enlightenment and learning for the sake of learning, three particular goals have been highlighted as relevant to Māori: enabling Māori to live as Māori, facilitating participation as citizens of the world, contributing towards good health and a high standard of living ... Education is not the only factor that will determine fluency in te reo, or readiness for participation in a global society, or good health, but it has the potential to be a major contributor, and educational failure significantly reduces chances of success in any of the three areas.
Incentives based on external norms

Individuals are embedded in institutional structures that provide them with incentives to act in certain ways, and they respond to these incentives by testing them against their values and their competence.

Elmore, 1996, page 27

Elmore argues for the creation of new incentive structures that will motivate educators to change their teaching practice. His argument is based on the premise that all educators are capable of teaching well if they have the motivation and support to do it. He says that what is needed is a different kind of professional standard that communicates to educators a set of expectations for good teaching practice. These “strong professional and normative structures” would then provide a basis for serious reflection and discussion about the components of good teaching practice – reflection and discussion that would lead, over time, to the diminution of trait theories of competence. Educators “would begin increasingly to think of themselves as operating in a web of professional relations that influence their daily decisions, rather than as solo practitioners inventing practice out of their personalities, prior experiences, and assessments of their own strengths and weaknesses” (page 31).

Dissonance

The discussion above points to the fact that new ideas will not lead to the deep learning that results in changed beliefs and practice if educators do not first experience a sense of dissonance.

The literature on restructuring emphasizes the need, first, to lead implementing agents to recognize an existing model as problematic and, then, to focus resources and support on attempts to make sense of the novel idea, restructuring existing beliefs and knowledge. So it is key to create a sense of dissonance in which agents see the issues in their current practice rather than seeing the new ideas as achieved within their current practice. This dissonance, or dissatisfaction with one’s own behavior, is essential in the reinterpretation of one’s beliefs.

Spillane et al., 2002, page 419

Similarly, Fullan (2001a) argues that while successful organisations work towards creating coherence out of the complexities of a culture of change, they also seek diversity, regarding dissent as a potential source of new ideas and breakthroughs.

[The route to making more good things happen and preventing more bad things from occurring is a process that generates widespread internal commitment from members of the organisation. You can’t get there from here without amplifying and working through the discomfort of disturbances. When change occurs, there will be disturbances, and this means that there will be differences of opinion that must be reconciled. Effective leadership means guiding people through the differences and, indeed, enabling differences to surface.

pages 113–114

People’s emotions and values are closely tied to their professional practice. Spillane et al. (2002) warn that the process of parting with their existing ways of thinking about the world, themselves, and their purposes can challenge people’s self-esteem. In response, they may give up, reject the need for change, or make changes in practice that reflect the superficial aspects of a new policy rather than the deeper ideas that were intended.
In sum, our usual approach to processing new knowledge is a conserving process, preserving existing frames rather than radically transforming them. New ideas either are understood as familiar ones, without sufficient attention to aspects that diverge from the familiar, or are integrated without restructuring of existing knowledge and beliefs, resulting in piecemeal changes in existing practice.

Elmore (1996) reports that the same thing happens at the organisational level.

*Institutions use their structures to buffer and assimilate the changing demands of a political and social order that is constantly in flux – they add new programs, they develop highly visible initiatives that respond to prevailing opinions in the community, they open new units in the organization to accommodate new clients, they mobilize and organize public opinion by creating new governance structures. But the gap between these institutional structures and the core patterns of schooling is slippery and elusive: The core of schooling remains relatively stable in the face of often massive changes in the structure around it. Schools legitimize themselves with their various conflicting publics by constantly changing external structures and processes, but shield their workers from any fundamental impact of these changes by leaving the core intact. This accounts for the resilience of practice within the context of constant institutional change.*

Spillane et al. (2002) suggest that when working with people to initiate change, it is important to focus their attention on real problems of practice and to build from examples to generalisations. This makes it more likely that they will be able to successfully restructure their existing schemas to take account of the new ideas.

*Policy ideas work as levers for change only if policymakers convince implementing agents to think differently about their behavior, prompting them to raise questions about their existing behavior and encouraging them to construct alternative ways of doing business.*

Similarly, professional learning for ISTEps needs to begin with them testing the effects of their routine practices and assumptions, measuring their effects, and critically reflecting on the evidence at the same time as they consider the validity and relevance of new ideas from outside the immediate context. (See the chapter Conducting Inquiry.)

Before leaving this topic, it should be noted that even the deep inquiry being discussed here is not always entirely uncomfortable – people may also feel a sense of relief at finally articulating and confronting issues that have worried or unsettled them. This is especially so when it emerges that others share the same concerns.
Testing assumptions

An ISTE inquires into perceived conflict between two of her basic assumptions (or “governing variables”; see pages 133–135). The ISTE’s inquiry was closely connected to that of the teachers whose learning she was facilitating. For both the ISTE and teachers, the experience of dissonance proves a catalyst for continued inquiry and learning.

As I set out to examine my ISTE practice in gifted and talented education workshops, I was prompted by Spillane et al. (2002) to investigate two assumptions I hold about my own practice:

• firstly, that I am able to establish a learning environment that feels “psychologically safe” and is conducive to risk taking and open discussion;
• secondly, that I hold back from radically challenging teachers to examine their practice and make substantive changes for fear of damaging that environment and negatively impacting on teachers’ self-esteem.

It seemed to me that if these were true, the second assumption would negate any benefits gained by the first!

My inquiry took place over six months. I worked with a group of five teachers on three occasions. We analysed existing teaching strategies and units of work and, where necessary, developed ideas for change. Each session ended with a questionnaire. We also met at different times for two interviews. The experiences of one of the teachers are described below. They reflect evidence and elements common to others in the group.

In the first workshop questionnaire, the teacher mentioned the “comfortable environment that facilitated open discussion” but added, “I cannot see past time constraints, curriculum requirements, department expectations, behaviour issues.”

After workshop two, she reported that “listening to others”, “reflecting on the last term”, and “open dialogue with the facilitator” assisted her learning. However, the nature of the barriers appeared to be more personal than in the previous meeting. She reported “sometimes feeling overwhelmed by all the things one could be doing” and “at times feeling inadequate despite knowing I am doing my best”. This resonated for me with the personal and emotional reactions identified by Spillane et al. and with my concern about the possible negative effects of challenging teachers’ practice.

However, I also recognised Spillane et al.’s dissonance as a catalyst for change, particularly when she continued, “I think I need to understand more about the workshop content and how to use it – feel the fear and do it anyway.” This caused me to wonder about my own “fear” and to what degree it holds me back.

By session three, the teacher was enjoying the “open and honest discussion” and “sharing ideas and resources”, and she wanted more time “to create new units with these ideas in mind”. All in all, this tended to suggest that change was under way. She had felt “safe” and challenged, and her self-esteem was still intact.

In the final interview, she talked about her expectations of students and said, “My desire to support them in being self-efficacious and self-responsible is now greater than my need to rescue them.” These words, I realise, are pertinent to my practice also!

I interpreted such responses to imply the co-existence of a psychologically safe environment and cognitive challenge in the workshops. Although the findings indicate support for my first assumption and not the second, this is not the end of my investigation. A new layer has been exposed and new questions have arisen. Teachers may be indicating changed thinking, but its transfer to their practice and its impact on students is unknown. I need to introduce this focus to my workshops and grapple with how and when to guide teachers’ inquiry into the effects of their practice on students – all this while maintaining a safe but challenging environment!
Developing a common theory of improvement

The issue of "the scale of change" is one that has been addressed by many researchers. It seems to have two aspects, both of which are concerned with how to get good ideas about ways to improve teaching and learning taken up in practice. "Scale" can refer to the depth and sustainability of change: the degree to which educational reform strategies are able to make changes at the instructional core of education (Elmore, 1996). This requires deep changes in people’s thinking and beliefs of the kind that were discussed in the previous section. The other aspect of scale is "breadth"; that is, the degree to which this deep change can be spread across individuals within an organisation and across organisations within a system. This requires capacity building at the system level as well as within individuals and organisations.

Elmore (2003) calls for educators at all levels of the system to collaborate to develop a common theory of improvement. Such a theory should integrate theories about learning and change.

In general terms, what is needed is … both a high quality theory of learning and a high quality theory of action (or, if you like, a theory of pedagogy and a theory of change, which constantly feed on each other). A theory of pedagogy focuses on assumptions about learning, instruction, and performance; a theory of action tends to local context such as the conditions under which the model will work.

Fullan, 2001b, page 187

As far as possible, the theories that are integrated into the theory of improvement should be those that educators know will make a difference for students. The improvement process should take place through ongoing inquiry into the effect of particular actions and decisions on practice and, ultimately, student outcomes. The inquiry should draw on outcomes-linked evidence from both within and without the organisations that are involved, including evidence from formal research.

The following sections discuss key factors that could underpin the development of such a theory for New Zealand. They suggest that change for improvement might incorporate the following elements:

• learning in professional communities;
• leadership;
• connections between big ideas and everyday practice;
• connections between professional development and accountability;
• a developmental process;
• joint inquiry in the "third space".

Learning in professional communities

In recent years, situated learning theorists have brought new understandings to our ideas about the ways in which people learn. Putnam and Borko (2000) explain that “three conceptual themes are central to the situative perspective – that cognition is [a] situated in particular physical and social contexts; [b] social in nature; and [c] distributed across the individual, other persons, and tools” (page 4). Spillane, Halverson, and Diamond (2001) tell us that one of the consequences of this understanding is that “social context is an integral component, not just a container, for intelligent activity” (page 23).
An individual’s cognition cannot be understood merely as a function of mental capacity because sensemaking is enabled (and constrained) by the situation in which it takes place (Resnick, 1991). The interdependence of the individual and the environment shows how human activity as distributed in the interactive web of actors, artifacts, and the situation is the appropriate unit of analysis for studying practice. Cognition is distributed through the environments’ material and cultural artifacts and through other people in collaborative efforts to complete complex tasks (Latour, 1987; Pea, 1993).

Spillane et al., 2001, page 23

This means that the sense individuals make of new ideas is intimately connected to the communities of practice (or “discourse communities”) to which they belong.

As members of a community interact over time on problems of shared concern, they negotiate meanings about the nature of their work and in some instances share understandings about what they need from outsiders (e.g., the district or state) to do their work well (Stein & Brown). These shared understandings become filters for ideas about revising extant practice.

Spillane et al., 2002, page 406

Wenger (1998) is the leading theorist on communities of practice. He defines them as communities that are informally bound by what they do together and what they have learned by taking part in these mutual activities. Their members have a common sense of purpose and a real need to know what one another know. They include both formal and informal groups of practitioners at all levels of the educational system. “Going to scale” within a community of practice involves enhancing its capacity to learn and thus to change.

Fullan (2005) defines capacity building as “developing the collective ability – dispositions, skills, knowledge, motivation, and resources – to act together to bring about positive change” (page 4). He says that educational leaders should concentrate on capacity building in order to turn their schools and districts – the communities of practice in which they function – into organisations that have the ability to accept, implement, and sustain beneficial educational change.

Development of individuals is not sufficient. New relationships (as found in a professional learning community) are crucial, but only if they work at the hard task of establishing greater program coherence and the addition of resources. The role of leadership ... is to “cause” greater capacity in the organization to get better results (learning).

Fullan, 2001a, page 65
The TPLD BES (Timperley et al., 2007) strongly supports the notion that learning within professional communities of practice is essential to achieving sustainable change.

All the core studies reported teacher participation in some form of structured professional group; this is one of the most consistent findings across the full range of studies. These groups were mostly school-based, but, at times, involved participants from different schools and/or researchers. The opportunity to process the meaning and implications of new learning with one’s colleagues appears to be fundamental to the change process, where that change impacts positively on student outcomes.

Timperley et al. report a lack of shared understanding about the nature of professional learning communities and the rationale for participation in them. Like the researchers cited above, they suggest that the reasons for the importance of professional learning communities in promoting sustainable change can be found in theories about the social nature of learning and about distributed cognition. However, they discovered that participation in professional learning communities does not necessarily lead to improvements in student outcomes.

Participation in structured professional groups was, however, associated with neutral or negative outcomes for students in several studies. These studies show that it is possible for teachers to be given generous amounts of time to collaborate and talk together, only to have the status quo reinforced, with change messages misunderstood, misrepresented, or resisted.

The developers report that professional learning communities that succeed in promoting teacher and student learning are associated with the following qualities:

- Participants are supported and challenged to think through new ideas and their implications for their current theories, knowledge, and practices.
- Participants maintain an unrelenting focus on the impact of teaching on student learning.

Leadership

A common theme emerging from the writing about change and improvement is that it seems to be relatively easy to achieve short-term improvements in student achievement. The real challenge is in sustaining improvements, and a key to sustainability is the development of a new kind of leader. These are leaders whose focus is on building the capacity of schools and other educational institutions to accept, implement, and sustain beneficial educational change (Fullan, 2001a). They are capable of mobilising people to confront the kinds of problems that do not have easy answers (Heifetz and Linsky, 2004). They include ISTEs who may not have formal positions of authority in a school but who do offer instructional or educational leadership.

Again, different researchers use different terms to describe leaders with similar sets of characteristics. These include “sustainable leaders” (Hargreaves and Fink, 2004), “adaptive leadership” (Heifetz and Linsky, 2004), “distributed leadership” (Spillane et al., 2001), and “balanced leadership” (Waters et al., 2003). All agree that if change is to matter, to spread, and to last, then the systems in which leaders do their work must make sustainability a priority.

20 Pages 125–126 of the chapter Communication and Relationships discuss the role of leadership in fostering ways of communicating and relating that support interactive professionalism – the development of strong professional cultures of collaboration within and between communities of practice focused on achieving better outcomes for students.
The leadership goal is no longer to develop a vision, build a good school–community relationship, or to manage the school or department efficiently. The new goal requires leaders to do all those things in a manner that improves teaching and learning.

Robinson, 2004, page 40

Effective leaders in a culture of change understand the challenges and complexities of learning, change, and improvement. They have a deep and broad knowledge of educational theory. This includes having the curriculum, assessment, and pedagogical knowledge they need to monitor and evaluate the information and advice provided by other people from inside and outside their organisations (Robinson, 2004).

Crucially, effective leaders know which leadership behaviours are important and which are essential to improving student achievement (Waters and Grubb, 2004; Waters et al., 2003). Because of this, they are able to select the behaviours that are appropriate to the order of change they are leading and to understand the way in which change impacts differently on different people. They recognise that change can have an emotional, as well as a cognitive, impact on people. As Heifetz and Linsky (2004) put it, “People do not resist change, as such. People resist loss.”

Effective leaders understand how to balance pushing for change while at the same time, protecting aspects of culture, values, and norms worth preserving. They know which policies, practices, resources, and incentives to align and how to align them with organizational priorities. They know how to gauge the magnitude of change they are calling for and how to tailor their leadership strategies accordingly. Finally, they understand and value the people in the organization. They know when, how, and why to create learning environments that support people, connect them with one another, and provide the knowledge, skills, and resources they need to succeed. This combination of knowledge and skills is the essence of balanced leadership.

Waters et al., 2003, page 2

Effective leaders seek coherence, but they understand that uncertainty is a necessary component of the change process. They create a “culture of inquiry” (Earl and Katz, 2002) where each individual habitually seeks evidence on which to base decisions. They understand that they themselves will sometimes be challenged and have to accept loss; that the evidence may show that aspects of their own knowledge, beliefs, and practice are wanting (Heifetz and Linsky, 2004).

Effective leaders understand the implications of situated learning theory (see Appendix I). They know that great ideas cannot be imposed on a local context but need to be adapted to the realities of each situation, and that those who implement them need time and support to work through the implications for them and their situation. At the same time, they recognise that leadership practices are distributed across multiple leaders in an organisation or system, each of whom has the power to contribute to change. They know that to survive and succeed against the odds, they need to emphasise building personal relationships and nurture leadership in others (Heifetz and Linsky, 2004).

Finally, effective leaders have a sense of moral purpose or social justice. This drives their vision for improvement in their own context and means that they are interested in, care about, and take some responsibility for schools and students in the wider environment (Fullan, 2005).

Leaders develop sustainability by committing to and protecting deep learning in their schools; by trying to ensure that improvements last over time, especially after they have gone; by distributing leadership and responsibility to others; by considering the impact of their leadership on the schools and communities around them; by sustaining themselves so that they can persist with their vision and avoid burning out; by promoting and perpetuating diverse approaches to reform rather than standardised prescriptions for teaching and learning; and by engaging actively with their environments.

Hargreaves and Fink, 2004, page 13
**Principals as leaders**

Since the Tomorrow’s Schools reforms of 1989, New Zealand schools have been self-managing and semi-autonomous, with locally elected boards of trustees responsible for operational decisions, including the provision of professional development. In practice, this responsibility has tended to be devolved to school principals, giving them a critical role in promoting and organising professional learning for teachers. The developers of the TPLD BES (Timperley et al., 2007) specifically addressed the role of school leaders in promoting professional development. They found that the following leadership roles were enacted in the professional learning initiatives that led to substantive positive outcomes for students:

- developing a vision that:
  - encompassed an alternative reality for student outcomes and alternative possibilities for curriculum content and pedagogy
  - was coherent with wider environmental and school policies;
- managing and organising professional learning opportunities, including:
  - establishing priorities and reducing competing demands
  - engaging reluctant participants by putting forward compelling reasons to do so, providing effective content, and engaging teacher theories
  - ensuring focused and productive opportunities to learn
  - engaging appropriate expertise
  - supporting participation in professional communities focused on promoting the teaching–learning relationship in evidence-informed ways;
- leading the professional learning by:
  - promoting a challenging learning culture
  - knowing what content and learning activities are likely to be of benefit
  - promoting evidence-informed self-regulated learning for sustainability;
- distributing leadership by developing teacher leaders with specific areas of focus.

See pages 192–196 of the TPLD BES for discussion of this issue.

A forthcoming synthesis on educational leadership identifies the characteristics of school leadership that are linked to improved student outcomes (see Robinson, 2007). Its developers report that effective leaders offer “instructional leadership” – leadership that is focused on the core business of teaching and learning. They identify five dimensions of leadership that have a substantial impact on student outcomes. These dimensions relate closely to the leadership roles identified in the TPLD BES and outlined above. They are:

1. establishing and communicating learning goals and expectations
2. strategic resourcing allocated to priority teaching goals
3. direct involvement by leaders in planning, co-ordinating, and evaluating teaching and curriculum
4. promoting and participating in teacher learning and development
5. ensuring an orderly and supportive environment.
Connections between big ideas and everyday practice

Elmore (1996) suggests that educational institutions have protected themselves from the disturbance created by new ideas about good educational practices by making changes in their external structures that act as buffers, protecting teachers and leaders from making any real change at the instructional core of schooling. He suggests that the prevailing incentive structure reinforces this process (see pages 156–157). He proposes four strategies that educators could use to overcome these problems and to scale up good ideas about teaching and learning.

1. **Develop strong external normative structures for practice.** Elmore says that external norms are important because they institutionalise “the idea that professionals are responsible for looking outward at challenging conceptions of practice, in addition to looking inward at their values and competencies” (page 31). They legitimise those who “draw their ideas about teaching from a professional community and who compare themselves against a standard external to their school or community” (page 32).

2. **Develop organisational structures that intensify and focus, rather than dissipate and scatter, intrinsic motivation to engage in challenging practice.** Elmore argues that schools and school systems should develop structures that bind diverse groups of educators together in relationships of mutual obligation as they work through issues of practice. Such face-to-face interactions help educators “to develop strong and binding professional norms about what constitutes high-quality teaching practice and a supportive organizational environment” (Elmore, 2003, page 9).

3. **Create intentional processes for reproduction of successes.** Elmore (1996) says that there is a need to create interventions that expose teachers to new practices and to monitor the effects of those interventions on teaching practice. He outlines five possibilities for scaling up educational reform, one of which involves creating professional networks that connect the more advanced (in terms of change) to the less advanced through a mentoring programme.

4. **Create structures that promote learning of new practices and incentive systems that support them.** Elmore observes that changing practice requires learning and that learning takes time and several cycles of trial and error. Educators also need to feel that there is a compelling reason for them to practise differently and to receive feedback from trusted sources about whether the changes they are making are benefiting their students.
According to Elmore (1996):

*These four basic principles constitute departures from previous strategies of broad-scale reform, and they address fundamental problems of previous strategies. It is unlikely that teachers or schools will respond to the emergence of new practices any differently than they have in the past if those practices are not legitimated by norms that are external to the environment in which they work every day. It is unlikely that teachers who are not intrinsically motivated to engage in hard, uncertain work will learn to do so in large, anonymous organizations that do not intensify personal commitments and responsibilities. It is unlikely that successful practices will spontaneously reproduce themselves just because they are successful, in the absence of structures and processes based on explicit theories about how reproduction occurs. And it is unlikely that teachers will be successful at learning new practices if the organizations in which they work do not embody some explicit learning theory in the way they design work and reward people.*

The TPLD BES (Timperley et al., 2007) affirms Elmore’s argument about the importance of achieving coherence between big reform ideas and everyday practice. The developers found that successful professional development is coherent both internally (around a common framework or vision) and in terms of its consistency with pedagogical approaches that have been proven through research and promoted by policy makers and professional teaching bodies. Effective ISTEIs understand their role in linking policy and research to classroom and school practice.

### Connections between professional development and accountability

Elmore (2002a) believes that the key to large-scale improvement is investment in the knowledge and skills of educators. Professional development supplies educators with the knowledge and skills they need to improve, helping to bridge the gap between what society wants of its educational system and what that system can deliver.

*The practice of large-scale improvement is the process by which external demands for accountability are translated into concrete structures, processes, norms and instructional practices in schools and school systems. Professional development is the set of knowledge- and skill-building activities that raise the capacity of teachers and administrators to respond to external demands and to engage in the improvement of practice and performance.*

Elmore believes that it is unfair and unrealistic to expect educators to achieve improved outcomes for students if they are not provided with the professional learning opportunities they need to improve their own practices. Further, he believes that there is enough consensus in the current literature and research about effective professional development to form the basis of a “reasonable working theory for the design of large-scale professional development activities” (page 11). However, he warns that current structures tend to make it difficult to put what is known about effective professional development into practice.

*Accountability must be a reciprocal process. For every increment of performance I demand from you, I have an equal responsibility to provide you with the capacity to meet that expectation. Likewise, for every investment you make in my skill and knowledge, I have a reciprocal responsibility to demonstrate some new increment in performance. This is the principle of “reciprocity of accountability for capacity.” It is the glue that, in the final analysis, will hold accountability systems together (Elmore 2000). At the moment, schools and school systems are not designed to provide support or capacity in response to demands for accountability.*

**Successful professional development is coherent both internally (around a common framework or vision) and in terms of its consistency with pedagogical approaches that have been proven through research and promoted by policy makers and professional teaching bodies.**
Elmore argues that for professional development to contribute to teachers’ instructional capacity, schools and systems are going to have to reorganise in significant ways, reducing isolation and making them places of learning for educators as well as for students. He suggests that Spillane et al.’s (2001) ideas about distributed leadership “can help educators become more aware of the connection between instructional practices and their own and their students’ learning” (Elmore, 2002b, page 24).

*Instructional practice and the improvement of instructional practice are complex and require high levels of knowledge and skills across a number of important domains ...*  
*To be successful at this complex work, schools need to have structures that develop the knowledge and skills of individuals and that stretch this expertise among people occupying the same role (such as teachers) and different roles (such as teachers and administrators). In these situations, learning grows out of concrete tasks that require shared expertise and allow people to develop their own skills and contribute to the development of others’ knowledge and skills.*

*A developmental process*

Elmore (2003) reports that “schools increase their internal coherence and capacity around instruction in several discernible stages. These stages often involve significant gains in externally measured performance, followed by periods in which improvement in quality and capacity continue but improvement in performance slows or goes flat” (page 9). This is largely because improvement is a learning process that proceeds in stops and starts. It takes time for learners to make sense of new ideas and to embed them in their day-to-day practice. It can also take time for changes in practice to reveal themselves in measurable improvements to performance.

*Schools are “improving” just as much when they are changing practices as they are when they are changing performance; performance, however, is easier to measure than is practice.*
Like Elmore, Fullan’s (2007) ideas about the processes that can bring about sustainable improvement in education are closely associated with theories of learning. However, Fullan’s ideas are perhaps more closely integrated with theories about change management. He emphasises that “change is a process, not an event”. Making a change and then sustaining the improvements that result can be the work of many years. He warns that while we now know a lot about the change process, the many factors that affect change mean that it is not possible to come up with hard and fast rules. However, there does seem to be general agreement amongst researchers that change takes place in three broad phases, as shown below in Figure 6.

**Figure 6: An overview of the change process**

Phase I – variously labelled initiation, mobilization, or adoption – consists of the process that leads up to and includes a decision to adopt or proceed with a change. Phase II – implementation or initial use (usually the first two or three years of use) – involves the first experiences of attempting to put an idea or reform into practice. Phase III – called continuation, incorporation, routinization, or institutionalization – refers to whether the change gets built in as an ongoing part of the system or disappears by way of a decision to discard or through attrition (see Berman and McLaughlin, 1977; Huberman and Miles, 1984). Figure (6) depicts the three phases in relation to outcomes, especially whether or not student learning is enhanced, and whether or not experiences with change increase subsequent capacity to deal with future changes.

Fullan, 2007, page 65

The arrows indicate the fact that decisions made at one stage can feed back to change decisions made at an earlier stage, “which then proceed to work their way through in a continuous interactive way” (page 50). That is, reformers continually monitor whether practices have changed as intended, whether the changed practices are achieving the intended outcomes, and whether the intended outcomes are still appropriate.

You can learn more about Fullan’s ideas by exploring his website at www.michaelfullan.ca
Teacher agency and ISTE roles within the change process

An ISTE describes the movement of a school through the three stages of the change process, as outlined by Fullan. She estimates that the school has reached the institutionalisation stage, but despite this, her monitoring of the changes to teachers’ practice suggested that those changes were fragile. In response, she explored some changes in approach that would motivate teachers to re-engage in the professional learning.

I’m a facilitator working within an Assess to Learn (AtoL) contract. In one school, we are in the third year of the contract. In terms of Fullan’s change process, I’d say that “initiation” began with the school becoming involved in the AtoL contract. And that “implementation” has been for the last two years, which saw teachers involved in workshops, individual just-in-time classroom support, data collection, and target setting.

“Institutionalisation” would have begun this year, when school systems were identified as needing to be changed. But after talking to teachers and walking around classrooms, it was apparent that changes had not been sustained. I wondered why not. On reflection, while there seemed to be majority agreement on going forward with the project two years ago, it was the principal who had seen the need for change, not the teachers. As Kotter (1995) emphasises, it is establishing a sense of urgency at the start that motivates. Changes that were made in teacher practice were fragile; they were most probably not sustained due to a lack of urgency or motivation to change in the first place.

School systems were going to change, so it was imperative to get the teachers back on track. In fact, changing the systems provided the sense of urgency that had been lacking for them. But I could see that we also needed to change our approaches to their professional learning, and this time I looked to adult learning theory to inform the way forward:

A review of adult learning theories identified specific conditions that may promote learning in the workplace: (1) opportunities for individuals to work with and learn from others on an ongoing basis; (2) collaboration in group work and learning; (3) chances to work with and learn from others of similar position; and (4) variation, challenge, autonomy, and choice in work roles and tasks.


I asked myself: how might adult learning theory influence my role as an ISTE and the strategies I adopt within that role?

With the help of fellow advisers and the teachers, we came up with a list of roles that ISTEs might assume and strategies they might use. We put them onto cards that teachers and ISTEs could use to discuss and agree upon appropriate roles and strategies within a given situation.

While this was helpful in defining and clarifying roles, something was still missing, and it seemed to be the teacher. How often do we as ISTEs consider the needs and wishes of the teacher in a truly democratic way? As Brookfield (1995) describes:

... conditions under which all voices can speak and be heard, and in which educational processes are seen to be open to genuine negotiation.

Page 45
I worked with three individual teachers through the process below:

1. We identified ISTE roles and strategies they’d experienced in previous professional learning, what had worked and what hadn’t, how the teachers had felt, and whether it had resulted in changes.
2. We worked together to analyse self-assessments by the teachers, covering their preferred learning styles, their feelings of self-efficacy, and their teaching styles.
3. We reviewed their self-evaluations of how they approached change and their confidence in implementing changes.
4. We discussed the outcomes from all of the above and used the ISTE role and strategy cards to negotiate how the professional learning would be developed for each teacher and to arrive at an action plan.
5. The teachers reflected on the process. Comments made in their reflections were encouraging – for example:

   “This has really excited me. I have always thought PD should take into consideration individual teacher needs. No one has ever asked me how I prefer to learn and develop.”

   “I can see how we (lead teachers) could use this process to help make changes within the school. We can identify our strengths and needs and provide support for one another.”

We are now poised to more effectively examine individual teacher practice, working in small groups. The important questions for me now are:

- What changes in practice do I need to make as an ISTE in order to individualise professional learning for teachers?
- Does individualising professional learning for teachers motivate them to engage with and sustain changes in their practice?
- Do such changes lead to improved outcomes for students?

**Joint inquiry in the “third space”**

Stein, Coburn, and their colleagues [Stein and Coburn, 2005; Coburn et al., 2005] draw on Wenger’s communities of practice theory to consider how the relationship between research and practice can be better linked so that innovative approaches to educational improvement are more routinely “taken up” in a large number of sites. They suggest that the two worlds of research and practice constitute examples of communities of practice and that the development of new understandings and practices in each of those communities constitutes new learning from which they make decisions about practice. In the past, the relationships between researcher, ISTE, and school communities of practice have tended to be loose and short-term.

Figure 7 (adapted from the work of Stein and Coburn, 2005) considers how the relationship between ISTE’s and teachers’ communities of practice can be better linked. It suggests that improvement requires the provision of opportunities for members of different communities of practice to learn from each other in the “third space”. The “third space” is the boundary between communities of practice where their members may be exposed to new ideas and practices that affect the meaning members create as they negotiate new learning within their own communities. This process happens through three mechanisms:

- **boundary practices**: regular ongoing interactions across boundaries and within joint activities;
- **brokers**: individuals who hold membership in multiple communities and can carry practice between them;
- **boundary objects**: artefacts, terms, concepts, or documents that travel across the boundaries of one community into another.

*Improvement requires opportunities for members of different communities of practice to learn from each other in the “third space”.*
Stein, Coburn, and their colleagues describe examples of four projects that successfully reconfigured the relationship between educational research communities and school communities in the ways suggested in Figure 7. These projects resulted in improved educational practices and greater student learning. In each, the projects had to forge new ways of working as they sought how to foster learning within and between each community.

Third space communities constitute unique places for learning. Situated between two established communities, they have the potential to create innovative practices and develop profound new understandings. ... The key for third-space R&D [research and development] communities is to sustain productive connections between researchers and practitioners while at the same time developing new and innovative ways of understanding and improving educational practice.

Stein and Coburn, 2005, page 20

Figure 7 recognises the knowledge and theories that both teachers and ISTEs bring to their communities and to professional learning and development. Together, teachers and ISTEs apply and test their knowledge and theories when they use them to investigate authentic problems of practice in the third space. The consequence of this inquiry is new learning for members of both communities of practice, learning that drives the decisions each makes about future action. The long-term consequence should be improved knowledge and practice in each community of practice, resulting in better outcomes for students. Should the results of the inquiry be published, it may also result in an increase in the professional knowledge available to communities of practice beyond the immediate context, contributing to the development of a shared professional knowledge base that is available to all educators. It is a process, too, through which educators can work towards the development of a common theory of improvement.

In Case 4, an ISTE and a teacher are working together in the third space; for both participants, their learning impacts strongly on their primary community of practice.
Sometimes ISTE(s) work one on one with individual teachers. However, the model reminds us that each person’s work is embedded in and fundamentally affected by the community of practice in which they work.

Stein and Coburn (2005) identify several lessons about the conditions required to foster learning in the third space:

- It is essential to choose boundary practices that create pathways for ideas, approaches, and artefacts to flow into the development process and for new learning to flow back to the home communities.
- It is important to address issues about status and authority in order to develop productive working relationships across institutions.
- The boundary objects need to be targeted enough to keep the work focused, yet flexible enough to allow for the negotiation of meaning between individuals from different communities.
- If the goal is for practitioners in similar communities of practice to move towards roughly similar forms of practice, they also need opportunities to negotiate meaning with those who develop boundary objects. For example, it is not enough for developers to send boundary objects, such as new curriculum documents, out to multiple school communities and expect that they will all understand and use them in the same way.

With whom do you work in the third space? What are the communities of practice that they represent? How do you ensure that there are pathways that lead to and from the third-space community of practice and the home communities?

What are the boundary objects you use, and how do you ensure that there are opportunities to jointly negotiate their meaning?

What are the boundary practices you use, and how do they support the joint negotiation of meaning?

What are the joint activities that you take part in? How do they support the learning and change?

How do you address differences in perceived status and authority to ensure that you work in partnerships with other members of the third-space community?
Implications for ISTE practice

The ISTE role in change for improvement

We can conceptualise ISTEs as being “brokers” (Wenger, 1998) who offer leadership that fosters connections at the boundaries of two communities of practice: the ISTE community and that of the teachers and school leaders with whom they work. The discussion around Figure 7 above captures this idea. It places ISTEs in context as practitioners operating in a system-wide culture of inquiry focused on learning that leads to change for improvement. By participating in a joint inquiry into real problems situated in teachers’ practice, ISTEs can help integrate the processes of learning and change both within and across organisations.

Sometimes ISTEs are involved in a major systemic change, for example, when assisting in the implementation of a new curriculum. At other times, their role is to introduce a single innovation, such as the use of a new assessment tool. At all times, however, their focus is on helping schools to build coherence between national and school-wide policies in order to improve student outcomes.

Effective ISTEs share the characteristics of effective leaders in a culture of change as described above (pages 161–163). This includes the understanding that their leadership should prepare others for when they won’t be there. The purpose of professional development is to build the capacity, motivation, and commitment of people and organisations to learn, inquire, change, and improve. This means helping to foster communities of practice characterised by a culture of inquiry that is focused on improving student outcomes.

Taking reform ideas to different communities and ensuring that they result in change and improvement that is deep, complex, enduring, and regenerative requires a difficult balancing act from ISTEs. It requires, for example, a focus on evidence of the relationship between teacher practice and student outcomes. Such a focus may generate a sense of dissonance that can disturb teachers’ sense of professional identity but ultimately lead to a greater sense of collective efficacy. This requires the ability to negotiate co-operative relationships with teachers and school leaders and to understand and respond to people’s changing needs as they learn, change, and inquire. It means knowing when to apply pressure and when to lend support. These aspects of the consequences of this model of change and learning are discussed further in the chapter Communication and Relationships.

Pages 159–171 outline some factors that could underpin the development of a common theory of improvement for New Zealand, and pages 21–25 propose such a theory for ISTEs. ISTEs, whether based in schools or working as external consultants, are uniquely placed to contribute to such theories.
Challenges of change for improvement

Fullan (2001b) identifies three fundamental issues for those attempting to initiate and implement change:

- the tendency to oversimplify the application of a good idea;
- a set of factors that worked well in one context often require different processes to be successful in another situation;
- the need to harness people’s passion and commitment.

These issues interact with the following four related problems:

- **Active initiation and participation**: These are necessary to move change in the right direction, but they may not be activated until the change process has begun.

- **Pressure and support**: Pressure is necessary to activate change, but support gets people on board.

- **Changes in behaviour and beliefs**: There is a reciprocal relationship between the two. People may need to try things out before they believe they will work. In addition, as Elmore (2003) points out, things can get worse as people grapple with the change. Fullan calls this the “implementation dip”.

- **The problem of ownership**: Ownership, in the sense of clarity, skill, and commitment to the change, takes time to grow and may not emerge till the end of the change process.

While sustainable improvement requires a focus on long-term outcomes based on a vision of what is possible, ongoing feedback against smaller indicators of success helps provide both pressure and support for change (Guskey, 1995). According to Earl and Katz (2002), data can help to generate a sense of urgency for the change effort. Guskey (2006) adds that it is particularly important for participants in professional development to see some indication of success early in a change effort. This can help to generate commitment and build relationships between the members of the different communities of practice collaborating on the change process.
Using data within a professional learning approach

The collection and analysis of data prompts a reluctant participant to engage in professional learning and provides the information that is needed to identify and address the challenges and needs within the professional learning context.

I’m working as a facilitator supporting in-school literacy leaders. I have been working with a secondary school that wants to investigate and improve the situation of students achieving at lower levels than their peers in similar schools.

Our assessments and observations suggested that students seemed to have too few opportunities to engage in the high-level literacy activities that would lead to an increase in achievement. We also found that although teachers had participated in many professional development activities, few changes in classroom practice had occurred as a result. Given these findings, we agreed that although an increase in student achievement was the ultimate goal, in the short term, we needed to focus on the development of an effective professional learning approach that would change teacher practice and understanding.

Working with a group of lead teachers, we developed an approach that focused initially on building the literacy knowledge and expertise of the lead teachers. They would then lead and support changes in teacher practice across the school, which would result in more successful student outcomes. Our plan acknowledged the importance for leaders of professional learning to have or develop expertise in specific content areas – in this case, both literacy and the particular curriculum area of each lead teacher.

The lead teachers and I identified data collection tools for gathering important baseline information. The tools included:

- surveys for teachers on their previous professional learning experiences, their literacy teaching knowledge, and their perceptions of literacy challenges in their content areas;
- individual teacher interviews to identify their concerns and questions about literacy teaching and learning in their specific content areas;
- an observation guide to determine what literacy practices were currently used in classrooms and how they were being used.

After gathering the information, we sat down to analyse the findings. One member of the group, the lead teacher for science, was very reticent about being involved. He said that he had “little understanding” of how to look at literacy in the context of science; as a physics teacher, this was especially the case within the specialist senior subjects of biology and chemistry. He also admitted to feeling like he knew “too little about literacy” and was terrified at the prospect of working with teachers who had considerable expertise outside his curriculum area.

This lead teacher wasn’t on his own in feeling that he knew too little to assist others. Given this situation, the group and I agreed on a range of strategies for the first stage of our work. Firstly we reviewed the research and literature on adolescent literacy and, using this “lens”, took a close look at materials and external assessments in specific content areas to determine the literacy challenges in those areas. While this helped, the lead science teacher continued to feel very tentative about his work. So he and the school’s literacy leader worked together to identify a range of strategies that could be used in teaching physics to support the development of students’ literacy skills. While the lead teacher trialled these new strategies, the literacy leader sat in class and observed student responses. Data from these observations helped them as together they then evaluated and modified the strategies.
This lead teacher now feels much more confident about his role. He believes he has a stronger basis on which to identify students’ learning needs and challenges in relation to literacy within science. He has reviewed the department scheme to ensure that appropriate literacy tasks are embedded in science learning as students move through the curriculum. And he intends to adopt the professional learning approach he has benefited from across his department: building knowledge of literacy learning within a specific curriculum area, gathering and analysing data to identify challenges and needs in this context, and developing and supporting strategies to meet these challenges and needs.

Making time

Page 154 emphasises the importance of making time for the deep learning needed to achieve sustainable change but adds that it is increasingly difficult to find that time. Guskey (1999) believes that we can gain more time by dispelling three myths that diminish the effectiveness of professional development and by following specific guidelines for success. The myths are:

1. **It’s new, so it must be better.** Guskey recommends that educators demand evidence of the effectiveness of new programmes and approaches before attempting to implement them and that they check their validity and relevance to their context. Elsewhere, he outlines guidelines for evaluating professional development (Guskey, 2002).

2. **“Need assessments” will guide us to best practices.** Guskey maintains that many need assessments are misnamed because they identify the symptoms of needs, such as information about educators’ current problems and concerns, rather than determining their actual needs.

3. **Planning at the local level is always best.** According to Guskey, the most effective initiatives are those that bring together the experience, expertise, and resources of both internal and external leaders.

The guidelines for making wise use of professional development time are self-explanatory. They are:

1. Focus on learning and learners.
2. Engage in rigorous self-analysis.
3. Study the history of new ideas and proceed gradually.
Suggested activity

Fullan (2007) offers the following “do” and “don’t” assumptions that he says are basic to planning and implementing a successful approach to educational change. Again, they reflect the complexity and depth of the change process. Do you agree with Fullan’s assumptions? How do they relate to your own experiences? How important are they? Do they align with the findings in the TPLD BES and if so, how?

1. Don’t assume that your version of the change is the one that should be implemented. Expect to change or develop your initial ideas through interactions with others.

2. Assume that there will be ambiguity, ambivalence, and uncertainty as people clarify what change means for them as they take part in reflective practice.

3. Assume that there will be conflict as people bring their multiple realities to the process of collective change. Expect the “implementation dip”.

4. Assume that people need pressure to change but provide the support they need to build their capacity and solve problems.

5. Assume that effective change takes time.

6. Don’t assume that people reject change because they reject the values embodied in it. There are many reasons for rejection, including the possibility that they are right!

7. Don’t expect everyone to change; aim to increase the numbers affected and take heart from the improvements that result.

8. Assume that you need a plan that is based on your understandings of the change process.

9. Assume that no amount of knowledge will make it clear exactly what to do. Your decisions should also take into account other factors such as political considerations and intuition.

10. Assume that the focus is on changing the culture of institutions – the relationships within and between institutions – not simply on implementing a particular innovation.

Adapted from Fullan, 2007, pages 122–125

References


This section presents summaries of readings that were particularly influential in the writing of these materials or in the research activities of INSTEP.


Argyris and Schön demonstrate that people’s behaviour is guided by and can be explained by their theories of action. An individual’s theories of action consist of his or her espoused theories and actual theories-in-use. Argyris and Schön present a conceptual framework for evaluating specific theories-in-use. They then present two models that relate specific theories-in-use to their effectiveness in supporting learning through human interaction. Finally, they describe how the theories developed here can be used to reform professional education.


Atkin argues that “we need values and vision driven development in which the question we are regularly asking of ourselves, as individual educators and school communities, is how well are we achieving what we value and believe; how well does our current situation match our vision of what is possible?” (page 4). In this paper she:

- promotes a values- and vision-based approach to school development;
- shares some processes and strategies for engaging in a values- and vision-driven approach;
- presents some principles of effective learning;
- suggests some implications of these principles for educational design and practices.

BES publications homepage: [www.educationcounts.govt.nz/publications/series/ibes](http://www.educationcounts.govt.nz/publications/series/ibes)

The Ministry of Education established the Iterative Best Evidence Synthesis (BES) Programme in 2003. The BES programme is now internationally acclaimed for the quality of its research into how to improve educational policy and practice. While the *Teacher Professional Learning and Development: Best Evidence Synthesis Iteration* (Timperley, Wilson, Barrar, and Fung, 2007) is probably of most immediate relevance to ISTEs, you will find it valuable to familiarise yourself with all the syntheses over time. They are all available for download and, by contacting the programme via the main home page, you may find that you are eligible for a free hard copy.

To date (mid-2008), the programme has published six syntheses:

- *The Complexity of Community and Family Influences on Children’s Achievement in New Zealand*
- *Professional Development in Early Childhood Settings*
- *Quality Teaching for Diverse Students in Schooling*
- *Quality Teaching: Early Foundations*
- *Teacher Professional Learning and Development*
- *Effective Pedagogy in Mathematics/Pāngarau.*
Two further syntheses are forthcoming:

- Effective Pedagogy in Social Sciences/Tikanga ā Iwi

A body of literature is developing around the BES programme, much of which is available from the BES publication home page. Of special interest is a booklet about teacher professional learning and development written by Helen Timperley as part of the International Academy of Education’s Educational Practices series. You can download the booklet from the Projects page of the Academy’s website at www.smec.curtin.edu.au/iae


Excerpt from the back cover

The model for addressing cultural diversity that is presented in this book is based on an indigenous Kaupapa Māori response to the dominant discourse within New Zealand. It promotes self-determination as guaranteed in the Treaty of Waitangi as a metaphor for power-sharing and has as its goal the advancement of educational outcomes and life opportunities for Māori children and those from other cultures. In this model the classroom is a place where young people’s sense-making processes (cultures) are incorporated and enhanced, where the existing knowledge of young people is seen as “acceptable” and “official”, and where the teacher interacts with students in such a way that new knowledge is co-created and not seen as something that the teacher makes sense of and then passes on to students.


This research team employed the process of collaborative storying when they interviewed a range of Māori students in mainstream schools about how best to improve their educational achievement. The students claimed that major changes were needed in the way teachers related to and interacted with them in their classrooms. Based on the students’ experiences, the research team developed a professional development intervention called Te Kōtahitanga. When implemented with a group of eleven teachers in four schools, the intervention was associated with improved learning, behaviour, and attendance outcomes for Māori students.

Since 2003, two further reports have been published as Te Kōtahitanga has been scaled up to more schools:

- Te Kōtahitanga Phase 2: Towards a Whole School Approach (Bishop, Berryman, Powell, and Teddy, 2007);

Brookfield applies the principles of adult learning to discuss how critical reflection can help teachers understand why they teach in a certain way and to assess the impact and perceptions of their practices. According to Brookfield, the reflective process involves teachers viewing their teaching from four different perspectives or "lenses": their autobiographies as teachers and learners; their students’ eyes; their colleagues’ perceptions; and the relevant theoretical literature.


Abstract

A growing body of research has emphasized the social processes by which teachers adapt and transform policy as they enact it in their classrooms. Yet little attention has been paid to the role of school leaders in this process. Drawing on sociological theories of sensemaking, this article investigates how principals in two California elementary schools influenced teacher learning about and enactment of changing reading policy. It argues that principals influence teachers’ enactment by shaping access to policy ideas, participating in the social process of interpretation and adaptation, and creating substantively different conditions for teacher learning in schools. These actions, in turn, are influenced by principals’ understandings about reading instruction and teacher learning.


Cochran-Smith and Lytle argue that “Different conceptions of teacher learning – although not always made explicit – lead to very different ideas about how to improve teacher education and professional development, how to bring about school and curricular change, and how to assess and license teachers over the course of the professional life span” [page 249]. They distinguish three conceptions of teacher learning: knowledge-*for*-practice; knowledge-*in*-practice; and knowledge-*of*-practice.


This valuable booklet draws on a synthesis of research into human learning that was conducted in the United States by the National Research Council. The original research highlighted a set of principles that apply to all learners. This booklet presents those principles in ways that make the research-based knowledge accessible and useful to all the communities that contribute to educational practice.


Earl and Katz argue that “data have the potential to be very powerful and useful mechanisms for helping schools change in productive ways” [page 1003]. However, they caution that using data is a deeply analytical and emotional process that is closely tied to the context, the people involved, and the nature of the data that is available. But, they say, “for data to have deep and lasting effects on schools, the motivation for its use has to be intrinsic and rooted in a need to know” [page 1008]. They suggest that “leading schools in a data-rich world” requires leaders to develop an “inquiry habit of mind”, become data-literate, and create a culture of inquiry.

Elmore argues that “professional educators have weak political authority and influence in part because they are fragmented professionally and lack strong co-operative theories on how to improve the enterprise” (page 9). He urges educators across the system to collaborate to develop a strong theory of improvement and outlines some parameters for such a theory.

Findings from the Numeracy Development Project

A significant theme that has emerged from the New Zealand Numeracy Development Project is that the sustainability of reforms depends on the ability of facilitators to assess and respond to each teacher’s context of practice. You can explore this theme by downloading the following sources:


You can learn more about the project itself by exploring the New Zealand Maths: Numeracy Projects website at www.nzmaths.co.nz/Numeracy/index.aspx

Findings from the Pacific Islands School Community Parent Liaison (PISCPL) project

PISCPL aims to raise the achievement of Pasifika students by fostering more effective engagement between schools and Pasifika parents and communities. You can explore this idea further through the following sources:


Michael Fullan: www.michaelfullan.ca

Michael Fullan is one of the world’s leading experts on educational change and improvement. You can learn about his ideas by exploring his website, which includes synopses of his books, downloadable copies of many of his articles, and other resources. Two texts that were drawn on frequently for these materials are:


Fullan and Hargreaves believe that there can be no improvement without the teacher and that the key to creating, sustaining, and motivating good teachers is interactive professionalism.

Reid notes that education systems around the world have responded to the challenges of the contemporary environment through increased managerialism, an approach that has been largely discredited in the educational literature. He argues that education systems should instead develop a culture of inquiry and research that will support educators to make inquiry into professional practice a “way of professional being”. Reid speculates about the possibilities for creating “a system that has institutionalised a system-wide culture of inquiry and research through its structures, processes and environment” (page 3).


Excerpt from the back cover

Each school and classroom is different. Therefore educators must learn, through their own inquiry, how to adjust their practices in ways that will improve teaching and learning. Practitioner Research for Educators explains how the popular technique of practitioner inquiry can be used by teachers, principals, and other school leaders to solve instructional problems and improve student achievement. Viviane Robinson and Mei Kuin Lai include step-by-step instructions, ready-to-use tools, and examples of successful practitioner research projects. Practical yet rigorous, this collaborative process is ideal for use in professional learning communities.


Abstract

Education policy faces a familiar public policy challenge: Local implementation is difficult. In this article we deliver a cognitive framework to characterise sense-making in the implementation process that is especially relevant for recent education policy initiatives, such as standards-based reforms that press for tremendous changes in classroom instruction. From a cognitive perspective, a key dimension of the implementation process is whether, and in what ways, implementing agents come to understand their practice, potentially changing their beliefs and attitudes in the process. We draw on theoretical and empirical literature to develop a cognitive perspective on implementation. We review the contribution of cognitive science frames to implementation research and identify areas where cognitive science can make additional contributions.


Traditionally, moving evidence-based strategies into practice has often involved a linear process, where researchers generate fundamental research leading to applied research that then “tricks down” to practitioners via facilitators in the form of new products or codified practices. Stein and Coburn ask how the relationship between research and practice can be better linked so that innovative approaches to educational improvement are more routinely “taken up”, with the ultimate goal being improved educational practices and greater student learning in a large number of sites.

Back cover

The ability to learn, unlearn and relearn is crucial in a changing and developing world. This book is about understanding the connections between pupils, teachers’ and leaders’ learning, and between learning in schools and in the wider community. It argues that it is schools’ internal capacity that fuels learning, and examines ways that pupils, teachers, parents, school advisors and policy makers can all help increase this capacity to turn schools into learning communities. This fascinating and accessible book contains questions for reflection and inspirational quotes, and should be read by all education practitioners.


Abstract

Increasingly school leaders are being challenged to take a more instructionally focused role in their schools. This paper tracks the leadership challenges through a change process involving an assistant principal and a group of teachers, supported by a consultant, through four phases of an action research project. During the project the participants learned how to use achievement data to improve instruction for their low-achieving students. Initially, the teachers did not believe that they could influence the low literacy achievement of their students and so analyzing achievement data was irrelevant to their practice. Eighteen months later they were using the data to target their instruction more precisely and to test the effectiveness of their teaching practice and make refinements to their programs. The multifaceted challenges involved in leading such an initiative are discussed for each phase, together with conclusions about the realities of instructional leadership and the support that might be needed to undertake it effectively.


These researchers have developed a leadership framework that describes the knowledge, skills, strategies, and tools leaders need to positively impact on student achievement. They based the framework on a meta-analysis of the literature that revealed a substantial relationship between leadership and student achievement (a correlation of 0.25).
Before reading this appendix, you may like to take a moment to note down the established learning theories that inform your own learning and the ways in which you try to support others to learn. How do these theories influence what you do? Why have you selected one theory and not another? How are different learning theories integrated in your schema? If you are reading this in collaboration with others, you may like to share and compare your theories.

Pages 104–109 of the chapter Knowledge and Theory discuss the various types of theory that educators use to explain how and why people learn and that help them make decisions about how best to support their own and others’ learning. It emphasises the fact that theories are dynamic, constantly evolving in the light of new information, and that we do not have a single comprehensive theory of learning. Some theories, however, have become generally accepted by a large number of people over time, and some of those are briefly introduced in this appendix.

Essentially, learning theories fall into two main areas of thought: behaviourism and constructivism. However, because theories grow and evolve, it can be difficult to decide whether a particular theorist is a constructivist or a behaviourist, as is exemplified in the case of Albert Bandura (see below). In practice, different theories have value and relevance in different situations and with different learners.
Behaviourism

Behaviourists emphasise the role of the environment in directing behaviour. They work by observing the ways in which their subjects respond to stimuli. They believe that learning takes place through conditioning and describe two types: classical and operant. Papalia and Olds (1992) define them as follows:

- **Classical conditioning**: A form of learning in which a previously neutral stimulus (a neutral stimulus is one that does not elicit a particular response) acquires the power to elicit a response after the stimulus is repeatedly associated with another stimulus that ordinarily does elicit the response (page 556);

- **Operant (instrumental) conditioning**: A form of learning in which a response continues to be made because it has been reinforced or stops being made because it has been punished; also called *instrumental conditioning*, because the learner is instrumental in changing the environment to bring about either reinforcement or punishment (page 560).

Of these two models of learning, operant conditioning is most widely applied to education, though its focus on using reinforcement or punishment to increase, eliminate, shape, or improve behaviour raises ethical issues. Bruning, Schraw, and Ronning (1999) claim that:

*Much of what we do today in education reflects behaviorism’s continuing influence. For instance, behavioral features are readily recognizable in such familiar educational approaches as instructional objectives, task analysis, and the use of positive reinforcers. All evolved out of a behavioral philosophy of learning specifying that responses must be sequenced appropriately, made overtly, and rewarded. Many of these derivations from behavioral psychology have helped make education more effective, more accountable, and more humane. In special education settings, especially, behavioral principles have provided an effective set of technologies for teaching that simply did not exist before.*

Social learning theory

Social learning theory is closely associated with the prominent theorist Albert Bandura. Bandura illustrated that much learning occurs through the observation and imitation of models and that it can be maintained through reinforcement. This means that instruction can be made more efficient by *modelling* desired behaviours of functional value to learners and by providing situations that allow them to use or practise those behaviours to improve their retention.

While social learning theory has its roots in behaviourism, Bandura found that a simple focus on stimulus and response was too simplistic to explain the complexity of human thought and behaviour. He recognised that the social context of learning is important and that individuals influence their environment as well as being moulded by it. Over thirty years of research, he also became increasingly aware of the role of cognition in learning, understanding that people’s cognitive processes allow them to, for example, pay attention to models, use symbols to stand in for a model’s behaviour, and mentally organise and reorganise information. This means that his theories also belong in the constructivist learning category described below. These ideas are reflected in the concept of *reciprocal determinism*, which suggests that learning results from the interaction between three factors:

- **Personal factors** include beliefs and attitudes that affect learning, especially in response to behavioral and environmental stimuli. Behavioral factors include the responses one makes in a given situation – for example, whether one responds to a poor test score with anger or with increased effort. Environmental factors include the role played by parents, teachers, and peers.

*Bruning et al., 1999, page 129*

Another important concept developed by Bandura and his fellow social learning theorists is that of *self-efficacy*. This suggests that people are more likely to engage in certain behaviours when they believe they are capable of executing those behaviours successfully. Self-efficacy is closely linked with initial task engagement, persistence, and successful performance.
**Constructivism**

Constructivism is a new term for an old set of ideas that are being given renewed attention with the support of recent research in cognitive psychology. Bruning et al. (1999) offer the following definition of cognitive psychology:

> Cognitive psychology is a theoretical perspective that focuses on understanding human perception, thought, and memory. It portrays learners as active processors of information – a metaphor borrowed from the computer world – and assigns critical roles to the knowledge and perspective students bring to their learning. What learners do to enrich information, in the view of cognitive psychology, determines the level of understanding they ultimately achieve.

Bruning et al. identify six themes in cognitive psychology that have relevance for education:

1. Cognitive psychology helps us see learning as a constructive, not a receptive, process.
2. Cognitive psychology emphasises the importance of structuring knowledge.
5. Cognitive psychology stresses the role of social interaction in cognitive development.
6. Cognitive psychology stresses the contextual nature of knowledge, strategies, and expertise.

Essentially, constructivists believe that learners construct knowledge for themselves; that is, each learner individually (and socially) constructs meaning as he or she learns. As Bruning et al. explain:

> The aim of teaching, from a constructivist perspective, is not so much to transmit information, but rather to encourage knowledge formation and metacognitive processes for judging, organizing, and acquiring new information.

**Essentially, constructivists believe that learners construct knowledge for themselves; that is, each learner individually (and socially) constructs meaning as he or she learns.**
The text below describes the work of some key initial theorists in the constructivist tradition and then that of others whose work builds on the concepts they developed.

**Key initial theorists**

**Personal constructivism: Piaget**

Beginning in the 1920s, Jean Piaget began to develop a cognitive theory of development. Cognitive theorists believe that learning is based on cognitive schemata or mental structures by which people organise their perceptions of their environment. Learning takes place through learners’ active participation in problem solving and critical thinking around a learning activity that they find relevant and engaging. They construct their schemata by testing new information against their prior knowledge, applying this information to a new situation, and then integrating the new knowledge with their pre-existing intellectual constructs. Piaget suggested that these cognitive structures develop through three inborn, interrelated **principles of development**:

- **organisation**: people’s tendency to create systems through which they can make sense of their world;
- **adaptation**: the way a person deals with new information, which takes place through the processes of assimilation and accommodation:
  - assimilation involves interpreting events in terms of the person’s existing cognitive structure
  - accommodation involves changing the cognitive structure to make sense of the environment;
- **equilibration**: the tendency for a person to strive for a state of mental balance between him- or herself and the outside world and among the cognitive elements within him- or herself.

Piaget’s careful observations of children led him to conclude that they go through distinct stages in cognitive development and that each stage provides them with a new set of mental tools with which to process information. According to his **cognitive-stage learning theory**, there are four stages: sensorimotor, pre-operations, concrete operations, and formal operations.

**Social constructivism: Vygotsky and Bruner**

Contemporary notions of social constructivism derive from the work of Vygotsky and Bruner. Where Piaget emphasised learning as an internal process, Lev Vygotsky stressed environmental, social, and cultural influences. His **social development theory** is based on the ideas that human learning is dependent on the learner’s interaction with his or her social and cultural environment and that learners are active participants in their own learning. He theorised that a person’s level of learning is more accurately reflected by what they can do with help and that, in fact, learning leads development. He introduced the concept of the **zone of proximal development** – the level at which learners can almost – but not quite – complete a task on their own. Vygotsky claimed that learning occurs through interactions between a learner and an expert within this zone. An associated concept is that of the **more knowledgeable other**. This is a person who has more knowledge about the topic being learned than the learner does. Often this person will be a teacher or another older adult, but it may also be a peer or a younger person.

Jerome Bruner applied the metaphor of scaffolds to Vygotsky’s concept of the zone of proximal development to develop the concept of **scaffolding** – the temporary support that a more knowledgeable other gives a learner to construct and extend his or her skills. As the learner gains competence, the support is gradually removed.
Building on earlier ideas

Co-construction theory

McNaughton (1995) describes co-construction theory as a contemporary view of learning that draws on cognitive psychology in its assumption that learners actively construct knowledge by confronting and solving problems and on social learning theories in its assumption that learning and development are social and cultural processes as well as personal. In addition, he identifies the following three concepts as underpinning co-construction:

- Learners’ construction of knowledge and expertise in action is created first in and through social interactions.
- Each learner brings his or her own expertise and shares it with others at the same time as developing new expertise, and so the process of construction is an interactive one. Cultural and social meanings are expressed and constructed within these interactions.
- The process of knowledge construction is channelled by the learner’s own development and the significant others in his or her life.

That is, the environment within which development takes place is organised or structured. Particular activities take place, which have been selected and deployed. The activities which the learner selects and engages in also contribute to the channeling of their own development.

Experiential learning

Experiential learning theorists, such as Carl Rogers and David Kolb, emphasise the importance of actually doing a task in order to learn it and are interested in the ways in which experiences motivate individuals and facilitate learning. They believe that people have a natural inclination to learn in order to change and grow. Learning must address the needs and wants of the learner and take place in an environment where threat is reduced to a minimum. Theories about experiential learning are important components of change management theory. Experiential learning theorists envisage “a dynamic situation where new learning feeds into and influences existing learning environments, thereby creating a process of continuing change” (Mahar and Harford, 2004, page 9).

Situated learning

Situated learning theories help to explain why it is that professional learning seems to be most effective when it takes place through interactions within and across professional learning communities. (See Appendix II: Professional Learning Communities.)

Situated cognition theorists conceive of learning as a sociocultural phenomenon rather than as the action of an individual acquiring general information from a decontextualised body of knowledge. They take into account the physical environment (the setting), the people involved in the setting (the social group), as well as the purposes of the learning and the resources available. They argue that new knowledge and skills are best learned in contexts that reflect how that knowledge is obtained and applied in everyday situations. Two terms describe the communities in which people participate and through which they learn.

The term communities of practice describes people who interact with each other on a regular basis as they carry out a joint activity. They learn how to get better at doing that activity through regular interaction. This community is not merely a club of friends or a network of connections between people; it has an identity defined by a shared domain of interest. Membership means a commitment to the domain and therefore a shared competence that distinguishes members from other people. In pursuing their interest in their domain, members engage in joint activities and discussions, help each other, and share information. They build relationships that enable them to learn from each other.
Members of a community of practice are practitioners. They develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems – in short a shared practice. This takes time and sustained interaction.

Wenger, 2004

Ovens (2002) points out that:

Communities can be large or small, layered within other broader communities as well as overlapping. It is also typical for individuals to recognize themselves as participants in a variety of communities, simultaneously and with the possibly conflicting connections.

For example, an educator may simultaneously belong to an ISTE community of practice, a school community of practice, a school syndicate community of practice, and an informal but influential community of practice made up of friends. Learning can take place through social interaction at both the core and at the boundaries of each of those communities.

The second term is discourse community. The concept of “discourse” relates to the ways people have learned to communicate and make meaning of their world. Discourse communities are created by the collective practices of their contributing members and provide “the cognitive tools – ideas, theories, and concepts – that individuals appropriate as their own through their personal efforts to make sense of experiences” (Putnam and Borko, 2000, page 5). It is impossible to participate in any functional group or community without understanding and, to some extent adhering to, the linguistic, intellectual, social, cultural, and behavioural norms of that group. In other words, learning includes coming to understand the ways in which the members of a particular community have developed for making meaning together.

A “discourse community” is a group of individuals bound by a common interest who communicate through approved channels and whose discourse is regulated ... (The community) shares assumptions about what objects are appropriate for examination and discussion, what operating functions are performed on those objects, what constitutes “evidence” and “validity” and what formal conventions are followed.

Porter, 1992, pages 38–39

Vincini (2003) suggests that situated learning theories have the following consequences for the design of instruction.

- Learning is driven and best presented through realistic and complex problems that allow learners to learn to think and practice like experts in the field.
- Content is learned through activities that help solve the problems and not from “packages” of information organized by instructors.
- The instructor’s role moves from providing and structuring the information and knowledge through lectures and presentations to modeling, coaching, and scaffolding learners as they use information and create knowledge to solve contextual real-life problems.
- Situated learning environments must support active engagement, discussion, evaluation and effective thinking. Activities and assignments are often collaborative and group-based.

The concept of “discourse” relates to the ways people have learned to communicate and make meaning of their world.
Adult learning

Many of the theories described above derive primarily from investigations into the way children learn. Since the mid-twentieth century, people working in the field of adult education have turned their attention to how learning in adulthood could be distinguished from learning in childhood. A number of frameworks and models have emerged, including self-directed learning, transformative learning, and andragogy. Each contributes to our understanding of adult learning but andragogy, a theory developed by Malcolm Knowles, is best known. Knowles used the term andragogy to clearly distinguish his theory from that of pedagogy – the teaching and learning of children (Merriam, 2005). He based andragogy on the following assumptions about the characteristics of adult learners.

1. Self-concept: As a person matures his self-concept moves from one of being a dependent personality toward one of being a self-directed human being.
2. Experience: As a person matures he accumulates a growing reservoir of experience that becomes an increasing resource for learning.
3. Readiness to learn: As a person matures his readiness to learn becomes oriented increasingly to the developmental tasks of his social roles.
4. Orientation to learning: As a person matures his time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly his orientation toward learning shifts from one of subject-centredness to one of problem-centredness.
5. Motivation to learn: As a person matures the motivation to learn is internal.

Knowles, 1984, page 12

The following principles of adult learning flow from these assumptions:
1. Adults need to be involved in planning and evaluating their instruction.
2. Experience (including mistakes) provides the basis for learning activities.
3. Adults are most interested in learning subjects that have immediate relevance to their jobs or personal lives.
4. Adult learning is problem-centered rather than content-oriented.

Adapted from The Theories into Practice database

Andragogy is more contentious than the other learning theories outlined above. As Merriam (2001) explains, there is debate over:

- whether andragogy provides a theoretical framework for considering adult learning or whether it is simply a set of assumptions and principles;
- the extent to which the assumptions are characteristic of adult learners only.

Despite this, Merriam and Caffarella (1999) report that in practice, practitioners have found andragogy “an enduring model for understanding certain aspects of adult learning” (page 277).

An emerging theory of teacher professional learning

In the Teacher Professional Learning and Development: Best Evidence Synthesis Iteration, Timperley, Wilson, Barrar, and Fung (2007) examine the “black box” between professional learning opportunities for teachers and their impact on teacher practice and subsequent student outcomes. They develop a theory of teacher professional learning that synthesises the aspects of constructivist theory described above, with the exception of adult learning theory. Timperley et al. assume that learning is not significantly different for adults than for students. They do, however, take into account obvious situational differences, such as adults’ richer life experiences, their different learning contexts, and the greater need for adult learners to be convinced that the learning is worth their while.

Timperley et al. identify four learning processes and associated outcomes that come into play when teachers develop new understandings and skills. They describe the processes as “iterative” because “deeper learning typically requires repeated cycles of engagement with learning processes, practice and outcomes” (page 8). While Timperley et al. refer specifically to teachers, it seems fair to assume that the same processes and associated outcomes also apply to ISTE’s and other educators.
The learning processes engaged when developing new understandings and skills involve cycles of (one or more of) the following:

- **Process 1**: Cueing and retrieving prior knowledge  
  *Outcome*: Prior knowledge is consolidated and/or examined.

- **Process 2**: Becoming aware of new information/skills and integrating them into current values and beliefs system  
  *Outcome*: New knowledge is adopted or adapted.

- **Process 3**: Creating dissonance with current position (values and beliefs)  
  *Outcome*: Dissonance is resolved (accepted/rejected); current values and beliefs system are repositioned or reconstructed.

- **Process 4**: Developing self-regulated learning in relation to testing the efficacy of teaching for student learning  
  *Outcome*: Student outcomes are monitored and teaching practice adjusted to maximise effectiveness.

Process 1 lays the foundation for Processes 2 and 3. If teachers are to negotiate the meaning of new knowledge, they first need to engage with their prior knowledge and examine their theories of practice. Sometimes, the new knowledge will be consistent with their current understanding and values (Process 2), and at other times, it will conflict (Process 3).

Process 2 involves developing an awareness of new information that does not create dissonance with current understandings and perceptions of practice. It can result in substantive learning when two sets of conditions are met:

- cognitively oriented conditions, which relate to the importance of understanding the complex ways in which people construct new learning, including the powerful impact of current understandings;
- social and emotional conditions, which include the need to understand the emotional effect of expectations to change practices and the need to motivate teachers to engage in new learning by showing them its relevance to their day-to-day teaching practice.

Process 3 involves new information that creates a sense of dissonance for teachers by challenging their existing values and beliefs. It requires ways of helping them to make their tacit knowledge and theories explicit and to deconstruct and reconstruct them in order to achieve better outcomes for their students. Timperley et al. emphasise the effort that this takes:

> While explicit knowledge is articulated in formal language and, therefore, more easily expressed, tacit knowledge is often intuitive, involving such intangible factors as personal beliefs, perspectives, and value systems, and it may never have been articulated (Lam, 2000; Hannay, Mahony, & MacFarlane, 2004; Jarvis, 1997). Tacit knowledge is built up over time and embedded in personal experience. It is accepted because it is known to work, but it can be a deterrent to creating change because it is often unexamined and un questioned.

Process 4 involves the development of self-regulated learning that requires teachers to test the efficacy of their teaching in terms of its impact on student learning and to monitor and adjust their practice as they work towards clearly defined student outcomes. Timperley et al. found that such learning was a factor in the small number of studies providing evidence that gains in student achievement were improved or maintained after the withdrawal of intensive support from ISTE external to the schools. Acknowledging the importance of the social situatedness of learning and the need for teachers to take collective accountability for student outcomes, Timperley et al. integrate the concept of “self-regulation” with that of “co-regulation”. Along with a range of other understandings about how people learn, these concepts form the basis for their development of the TPLD BES’s “Teacher inquiry and knowledge-building cycle to promote student outcomes” diagram.
The theory of teacher learning that Timperley et al. propose is richly informed by their understanding of a wide range of established learning theories and of the ways in which these theories have informed other educational research. For example, Processes 1 and 2 might be traced back to the work of cognitive theorists such as Piaget and their explanations of the way in which learning involves the construction and reconstruction of schemata in the light of new information. The theory of teacher learning is informed, too, by Robinson and Lai’s (2006) recent work about the importance of interrupting teachers’ normal routines to engage and examine the theories of action that they bring to solving problems of practice. The concept of “theories of action” was itself developed by Argyris and Schön (1974), and that, in turn, grew out of earlier research by Chris Argyris into the relationships between individuals and organisations (Smith, 2001).

Despite this rich heritage, it is essential to heed Timperley et al.’s own warning that while their theoretical framework proved adequate for their purposes, more work is needed before it can be accepted into the body of established theory.

Conclusion

This discussion has provided a brief introduction to just some of the more influential general learning theories. It is important to remember that each has its critics and adherents. As the final discussion about Timperley et al.’s proposed model of teacher learning emphasises, it seems that educators will get a better understanding of human learning processes by considering a wide range of learning theories and their relevance in different contexts rather than by holding rigidly to any one theory. Some of the texts listed in the References could provide a useful starting point for finding out more about some of the theories with which you are less familiar.

While this appendix is not intended to provide a comprehensive introduction to any of the learning theories it discusses, it may have provoked ideas, questions, or memories. You may like to make a note of these for further investigation or discussion with your colleagues.
References


The Theories into Practice database: http://tip.psychology.org/knowles.html


Appendix II: Professional Learning Communities
Tāpiritanga II: Ngā Hapori Kaiako

What is a professional learning community?

A professional learning community is an inclusive group of people, motivated by a shared learning vision, who support and work with each other, finding ways, inside and outside their immediate community, to enquire on their practice and together learn new and better approaches that will enhance all [participants’] learning.

Stoll, Bolam, McMahon et al., 2005, page 1

In education, a “professional learning community” (PLC) is the context in which people involved with and concerned about schooling work collaboratively to learn how they can improve student learning. There is no universal definition or description of a professional learning community. However, a range of researchers have attempted to identify the specific characteristics of professional learning communities that are effective in sustaining improvements in student learning. While their terminology may differ, many of the characteristics they identify and the learning principles on which they rest seem to be similar. In addition, the characteristics and principles seem to be the same whether they are applied to professional learning communities in schools, inservice teacher education, or at the government level. This appendix draws on research evidence to identify and attempt to describe some characteristics of effective professional learning communities and their implications for inservice teacher education.

References

There is a substantial body of research evidence that examines the value of communities of professionals working together to improve student learning. As far back as the 1920s, John Dewey contended that schools need to be communities of inquiry into their educational practices, using data and their own contexts to examine issues that affect students’ engagement with learning. Today, many researchers argue for professional learning communities that work and learn together at all levels of the educational system, collaborating to build their capacity to change and improve so that they can achieve better outcomes for their students.

Note that these materials generally use the terms “communities of practice” and, to a lesser degree, “discourse communities” rather than “professional learning communities”. These terms have arisen from the work of situated learning theorists who argue that interactions with the people in one’s environment are major determinants of both what is learned and how learning takes place (Putnam and Borko, 2000). You can read more about situated learning theories in Appendix I.
The following characteristics seem to be typical of effective professional learning communities:

- commitment to learning for all;
- collaborative relationships among community members;
- shared values and vision;
- reflective and iterative inquiry;
- participation in networks and partnerships;
- commitment to sustainability and capacity building.

Commitment to learning for all

The purpose of educator professional learning communities is to ensure that students learn. We know that the quality of teaching has a significant effect on students’ learning outcomes (Alton-Lee, 2003). It follows that improved learning outcomes for students depend in part on a commitment to learning by their teachers and that improved professional learning for teachers depends on a commitment to learning by ISTEs.

What the literature says

In education, effective professional learning communities:

- have an unremitting focus on student learning;

  *If ... the fundamental purpose of schooling is to ensure that all students acquire the knowledge, skills, and dispositions essential to their success as ongoing learners, the need for improvement is immediate and imperative. The PLC concept is grounded in this making-a-difference sense of moral purpose.*
  
  DuFour, Eaker, and DuFour, 2005, page 15

- have an equally unremitting focus on professional learning for educators;

  *The reason that professional learning communities are essential is that they are learning organizations ... They do interact to produce shared commitment and they constantly worry about what is worthwhile and how to get there. Because of their purposeful interactions, they are organically suited to converting tacit knowledge to explicit (shared, definable, learnable) knowledge on an ongoing basis. They are energy and knowledge creators – exactly what a learning organization is, and precisely what is needed to make change meaningful and substantial.*
  
  Fullan, 2001, pages 270–271

- measure the effectiveness of professional development by its contribution to educator learning and, ultimately, to student learning.

  *Professional development ... is a collective good rather than a private or individual good. Its value is judged by what it contributes to the individual’s capacity to improve the quality of instruction in the school and school system.*
  
  Elmore, 2002, page 14

Implications for ISTEs

As educational leaders, ISTEs need to have a deep knowledge of pedagogical approaches that support effective learning in particular contexts and to be able to model those approaches in their own practice. This requires them to engage in ongoing learning in their own professional learning communities. It also means that the main measure of the effectiveness of professional learning should be its impact on teaching practice and student outcomes.
Collaborative relationships among community members

In professional learning communities focused on making ongoing improvements to student learning, educators need to be able to do more than share their ideas and support each other; they also need to collaborate to critically examine the impact that their ideas and practices are having on student outcomes. This means that they need to develop relationships that promote collaborative inquiry and the co-construction of shared knowledge about effective learning and teaching.

What the literature says

Collaborative professional relationships:

- break down cultures of isolation and provide opportunities for educators to learn from each other;

  
  To be sure, high quality instruction depends upon the competence and attitudes of each individual teacher. But in addition, teachers' individual knowledge, skills and dispositions must be put to use in an organized, collective enterprise. That is, social resources must be cultivated, and the desired vision for the social resources within a school can be summarized as professional community.

  King and Newmann, 2001, in Bolam, McMahon, Stoll et al., 2005, page 15

- foster reflection and inquiry around shared problems of practice, contributing to:

  the establishment of a school-wide culture that makes collaboration expected, inclusive, genuine, ongoing, and focused on critically examining practice to improve student outcomes.

  Seashore et al., 2003, quoted in Bolam et al., 2005, page 6

- are based on mutual trust and respect;

  Mutual respect and understanding are the fundamental requirements for this kind of culture. Teachers find help, support, and trust as a result of the development of warm relationships with each other. “Teachers tolerate (even encourage) debate, discussion and disagreement. They are comfortable sharing both their successes and their failures. They praise and recognise one another’s triumphs, and offer empathy and support for each other’s troubles”. (Wignall, 1992)

  Hord, 1997, page 4

- are based on a distributed model of leadership and expertise;

  In a professional learning community, administrators are committed to sharing decision making with staff and providing opportunities for teachers to serve as leaders ... Collective decision making results in increased morale, ownership, understanding about the direction and processes of change, shared responsibility for student learning, and a sense of professionalism, all of which help to sustain improvement efforts.

  Mid-continent Research for Education and Learning (McREL), 2003, page 1

- foster dynamic professional exchanges and learning conversations that help people to critically examine their beliefs and assumptions and to address and resolve difficult issues.

  In learning conversations people recognize the importance of treating different accounts of a problem as a resource for learning better ways of thinking about and resolving it. This means they are open to learning from others about the adequacy of their assumptions, beliefs, and values.

  Robinson and Lai, 2006, page 41

Implications for ISTEs

ISTEs need to experience collaborative working relationships in their own learning communities, both to support their own learning and to give them experience they can draw on in developing such relationships with teachers and school leaders. For ISTEs to develop collaborative relationships, they need to find ways of communicating that help all parties to better understand each other. Conversations between educators should foster positive relationships while maintaining a rigorous focus on the effect of teaching practice on learning.
Shared values and vision

The members of an effective professional learning community negotiate a shared vision that articulates their values and goals for improvement. Their fundamental focus is on student learning.

What the literature says

The members of an effective professional learning community:

• collaborate to develop a vision that clearly articulates the community’s purpose and that they try to enact in their everyday practice;

  *Sharing vision is not just agreeing with a good idea; it is a particular mental image of what is important to the individual and to an organisation. Staff are encouraged not only to be involved in the process of developing a shared vision, but to use that vision as a guidepost in decision-making about teaching and learning.*

  Hord, 1997, page 4

• periodically review their vision in light of experience;

  *Effective schools … allocate resources to make certain that the vision continues to reflect the school’s common values and goals for improvement. In addition, they periodically review the vision to determine if the standards it sets forth are ambitious yet attainable and if it continues to focus closely on the diverse needs of students served by the school (Eaker, DuFour, & Burnette, 2002).*

  Quoted in McREL, 2003, page 1

• share common ways of working that they have negotiated and agreed and that reflect their values and vision.

  *Professional groups, engaged in critical reflection about their work, work best when all subscribe to an agreed process. These processes, their underlying assumptions, and the manner in which they are applied we generally refer to as protocols.*

  Stevens and Stewart, 2005

Implications for ISTEs

Quality teaching and learning in any community requires a shared vision about what is to be achieved in practice. In reflecting on this, community members may decide that they need to change their practices or that they need to revisit the vision itself. ISTEs support professional learning communities to develop the dynamic and iterative processes needed to achieve consistency between their vision and their practice. At the same time, ISTES engage with such processes in their own communities.
Reflective and iterative inquiry

The members of an effective professional learning community engage in ongoing inquiry about serious educational issues, exploring data from a wide range of sources and examining it for its value as evidence on which to make decisions for practice. This process encourages reflective thinking and leads to deepened understandings that negate the protection of the status quo.

What the literature says

An effective professional learning community:

- learns through an ongoing cyclical process of critical inquiry. Communities become “cultures of inquiry” in which investigation and evidence drive improvement;

  [Toole and Seashore Louis (2002)] describe a culture of inquiry as “a school-wide culture that makes collaboration expected, inclusive, genuine, ongoing, and focused on critically examining practice to improve student outcomes” (p. 247). In their view, such collaborative communities, often referred to as “professional learning communities”, are not comfortable collaborations through which teachers merely share ideas but are opportunities for rigorous investigations of school wide teaching and learning.

  Robinson and Lai, 2006, page 198

- develops the ability to learn by collaboratively deconstructing, reconstructing, and co-constructing knowledge;

  [If the community is to be intellectually vigorous then members need a solid base of expert knowledge and skills and there needs to be a strong emphasis on the professionalisation of teachers’ work through increasing expert knowledge … Learning within PLCs involves active deconstruction of knowledge through reflection and analysis, and its reconstruction through action in a particular context, as well as co-construction through collaborative learning with peers.

  Bolam et al., 2005, page 11

- meets regularly to discuss and reflect critically on practice;

  Immense value was placed on teachers’ learning for improvement in PLCs, evidenced by a dedication to regular planning times … where teachers discussed strategies, shared ideas, planned and solved problems. Teachers responded positively to opportunities for self-analysis … to get continuously better at doing what was best for their students’ learning … Teachers found solutions by learning and working together towards a common goal, realising that learning and change take time and effort.

  Morrissey, 2000, page 3

- invites an educator in role as, for example, a critical friend, coach, mentor, or external expert to provide another lens on practice and to help scaffold the learning.

  The idea of critical friends is a powerful one because it contains an inherent tension. Friends bring a high degree of positive regard, are forgiving and are tolerant of failings. Critics are often conditional, negative, and intolerant of failure. Critical friends offer both support and critique in an open, honest appraisal (MacBeath, 1998). As Costa and Kallick (1995) describe it, a critical friend is “a trusted person who asks provocative questions, provides data to be examined through another lens, and offers critique of a person’s work, as a friend” (p. 154).

  Earl and Katz, 2002, page 1018

Implications for ISTEs

ISTEs play an important role as educational leaders who help to develop cultures of inquiry in the professional learning communities with which they work. Being an educational leader means stimulating and supporting people as they examine their practice in relationship to evidence about its impact on student learning. ISTEs need to model inquiry-based learning in their own practice, while also supporting schools to gather and make sense of their data and use it to challenge their assumptions and beliefs.
Participation in networks and partnerships

If our goal is to provide the best possible learning opportunities for all New Zealand students, it is not enough to focus on learning within individual professional learning communities. Members of professional learning communities need to contribute to a system-wide focus on shared learning and improvement. As Fullan (2005) argues, entire systems must be actively engaged in the reform of schooling and take collective responsibility for increasing the capacity for continuous improvement in student performance.

What the literature says

Effective professional learning communities understand the need for everyone to learn together, not only within but beyond their communities.

- They seek external expertise. In their synthesis of the features of professional learning and development that have had significant outcomes for diverse students, Timperley, Wilson, Barrar, and Fung (2007) found that deep learning almost always requires the engagement of external expertise. The need for external expertise is understandable ... because the substantive new learning involved in most core studies required teachers to learn new content and skills and to think about their existing practice in new ways. It is unlikely that any group of professionals would be able to manage this level of new learning without support and challenge from someone with expertise in the area. It is not sufficient simply to provide time and opportunity.

- They participate in systemic networks. A network increases the pool of ideas on which any member can draw and as one idea or practice is transferred, the inevitable process of adaptation and adjustment to different conditions is rich in potential for the practice to be incrementally improved by the recipient and then fed back to the donor in a virtuous circle of innovation and improvement. In other words, the networks extend and enlarge the communities of practice with enormous potential benefits.

Hargreaves, 2003, page 9

Implications for ISTE practitioners

Large-scale improvement requires educators at all levels of the education system to use the best knowledge and practices available in order to build their capacity to help bring about improved student learning outcomes. It follows that effective ISTE practice requires the creation of networks and partnerships with other professional learning communities in all parts of the education system to support reciprocal learning for all.

In professional communities writ large, the system as a whole adopts the agenda of fostering deep learning communities. In other words, schools and communities explicitly pursue the development of new cultures of professional learning; districts, regions, and schools establish infrastructures to support and mentor such development; and states or provinces commit themselves to policies and strategies for systemically addressing the evolution of professional learning cultures.

Fullan, 2005, page 3

If our goal is to provide the best possible learning opportunities for all New Zealand students, members of professional learning communities need to contribute to a system-wide focus on shared learning and improvement.
Commitment to sustainability and capacity building

If the routines and culture of a professional learning community are working properly, they should provide a self-renewal mechanism for the community. That is, they should build the capacity of the community to achieve ongoing improvements in both professional and student learning.

What the literature says

Research into sustainability is still in its early stages. Bolam et al. (2005) note that because leadership succession seems to be a factor in a professional learning community’s decline, much of this research is focusing on the nature of the leadership required to build capacity and sustain improvement. They cite findings from one longitudinal study:

A longitudinal study of change over time in Canada and the United States, from the perspective of staff who worked in eight secondary schools in the 1970s, 1980s and 1990s suggests that sustaining change requires: sustaining deep learning; involving a broad range of people in “chains of influence”; spreading improvements beyond individual schools; it being done on existing resources, not through special projects where the funding then dries up; nourishing and taking care of people, rather than burning them out; sharing responsibility; activist engagement to secure outside support; and developing capacity that enables “people to adapt to, prosper and learn from each other in their increasingly complex environment” (Hargreaves, 2004).

Timperley et al. (2007) found only seven studies that satisfied their criterion for sustainability. While there are similarities between their findings and those in the study cited above, for example, in the importance of leadership and organisational support, other key factors also seem to be the need for theoretical knowledge, inquiry skills, and the ability to self-regulate learning.

Features of professional learning and development that were associated with sustained student outcomes included a strong theoretical base that provided the foundation for principled decisions about practice, and the skills to collect relevant evidence and use it to inquire into the impact of teaching on student learning, particularly in relation to understanding students’ problematic thinking or achievement.

... The evidence related to sustainability is consistent with the conditions known to promote self-regulated learning for teachers. Self-regulated learners are able to answer three questions: “Where am I going?”, “How am I going?”, and “Where to next?” (Hattie and Timperley, 2007). Teachers with both inquiry skills and content knowledge, and who received support from their leaders, were consistently able to do this in terms of the impact of their teaching on student learning.

Implications for ISTE

Fullan (2005) describes the kind of professional learning community that ISTE need to develop and work within in order to create sustainability. He argues that the benefit of groups outside schools establishing their own learning communities is that it gives them understanding of the change process and the corresponding capacity building that needs to be done.
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