School Leadership and Student Outcomes: Identifying What Works and Why

Best Evidence Synthesis Iteration [BES]

Viviane Robinson, Margie Hohepa, and Claire Lloyd
The University of Auckland

Chapter 6

This report is one of a series of best evidence synthesis iterations (BESs) commissioned by the Ministry of Education. The Iterative Best Evidence Synthesis Programme is seeking to support collaborative knowledge building and use across policy, research, and practice in education. This series of syntheses draws together bodies of research evidence to explain what works and why to improve valued education outcomes and to make a bigger difference for the education of all our children and young people. Each synthesis celebrates the work of educators and the inquiry processes that enable educators and researchers to bring about sustainable improvements in education. Each is part of an iterative process that anticipates future research and development informing educational practice.

Earlier BESs have focused on effective teaching and professional learning in schools and on the impact of family and community influences on educational outcomes. This *School Leadership and Student Outcomes BES* will prove a crucial support for school leaders as they address our shared challenge of preparing all our children for the future.

The International Academy of Education has commissioned summaries of the recent BESs developed by the Ministry of Education. While the full reports provide the explanations and vignettes that are needed to support educational change, these short summaries will also be a convenient help for leaders. They will be available on the International Academy of Education website www.iaoed.org and on the UNESCO website http://unesdoc.unesco.org The first of these summaries to be published is:

> Timperley, H. (2008). *Teacher professional learning and development: Educational practices series 18*. International Academy of Education, International Bureau of Education & UNESCO. http://unesdoc.unesco.org/images/0017/001791/179161e.pdf

Further information is available at www.educationcounts.govt.nz/goto/BES, and feedback is welcome at best.evidence@minedu.govt.nz

Contents

Acknowledgments

We are particularly grateful to Dr Claire Sinnema for her expertise in document formatting and creating figures and charts. We would also like to thank Sandie Gusscott of UniServices for her management of the contract and her tireless support of the writers.

Finally, we would like to thank our families for their patience and support as we worked through all the challenges associated with this project.

Viviane Robinson
Margie Hohepa
Claire Lloyd

Nāu te rourou, nāku te rourou, ka ora te iwi.
Through each of our contributions the people will thrive.

6. Leading the improvement of teaching and learning

As discussed in Chapter 3, there is little New Zealand research that links school leadership with student outcomes. The question arises, therefore, as to whether leadership dimensions derived from an analysis of international evidence are applicable to the New Zealand context and, more particularly, to the Māori-medium context.

The dimensions were checked for relevance by comparing them with those that emerged from a second, independent analysis of evaluations of initiatives to improve teaching and learning in New Zealand schools. This time, the starting point was not theories of leadership, as in Chapter 4, but initiatives that have had a demonstrable impact on one or more valued student outcomes. Starting with this evidence, and using the process of backward mapping described below, we derived the leadership dimensions that supported teachers in their work of improving student achievement and well-being.

While these evaluation studies were not designed as studies of leadership, they include descriptions of the role played by leaders in the improvement process. From these descriptions, we derived six dimensions. Because New Zealand initiatives to improve teaching and learning typically involve partnerships between school leaders, researchers, professional developers, and Ministry officials, these dimensions reflect a widely distributed approach to the leadership of school improvement[216]. The evidence from which the dimensions are derived comes predominantly from primary schools. Although many of our findings will also be applicable to secondary schools, much more research is needed on the leadership of teaching and learning in this sector.

In the following sections, we briefly review the procedures used to identify the leadership dimensions associated with enhanced student outcomes. We then describe each of these dimensions and explain how they work. Both positive and negative illustrations are used to exemplify and discriminate the particular qualities that make these dimensions effective.

6.1 Research approach

Two sets of studies informed our analysis. The first set was selected from a recent Best Evidence Synthesis Iteration[217], which identified the attributes of teacher professional learning that has a positive impact on student outcomes[218]. From this synthesis, we identified 16 quantitative studies that rated medium to high in terms of methodological adequacy and medium to high in terms of impact on student outcomes (as measured by effect size)[219]. Fifteen of these studies measured academic outcomes, and one, social outcomes. Seven were conducted in primary schools, one in an intermediate school, and one in a secondary school. Seven involved a cross-sector analysis[220].

---

[216] See Annan, B. (2006). *A theory of schooling improvement: Connectivity and consistency to improve instructional practice.* Unpublished doctoral thesis, The University of Auckland.

[217] Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). *Teacher professional learning and development: Best evidence synthesis iteration (BES).* Wellington: Ministry of Education.

[218] Outcomes were defined as: greater academic achievement; enhanced personal identity, self-esteem, self-concept, or attitudes towards learning; improved interactions with and acceptance by peers and teachers; greater school attachment.

[219] An effect size between 0 and .20 was taken to mean a weak or non-existent impact; between .20 and .40 as a small but educationally significant impact; between .40 and .60 as a medium, educationally significant impact; and greater than .60 as a large, educationally significant impact. Where effect sizes were not provided by the authors of the individual studies, the BES advisors computed effect sizes from the data provided.

[220] One study did not report the sector involved.

A second set of quantitative studies, 15 in all, was drawn from published reports and unpublished theses[221] of research undertaken in New Zealand schools. These studies assessed the impact on student outcomes of a variety of initiatives, all focused on pedagogical practice. Sufficient information was provided for us to be confident that the design of the studies and the reporting of data met the BES guidelines. Eight of these studies related to Māori-medium contexts and seven to English-medium contexts. Thirteen were conducted in primary schools; one involved a cross-sector analysis[222].

Thirteen of the studies measured academic outcomes and one, both academic and social outcomes[223]. Effect sizes for the English-medium studies were either directly reported or obtained from other evaluations of the same initiatives. The eight Māori-medium studies did not provide effect sizes but reported outcomes as pre-/post-intervention gain scores. We judged the educational significance of these interventions for the targeted students and included only those studies that provided evidence of positive outcomes. In many cases, the evidence was weak and the changes, though positive, were not strong. We nevertheless included these studies to ensure that our leadership dimensions were derived from both Māori- and English-medium educational contexts.

After reading each study and taking detailed notes on every aspect of leadership mentioned, we did an analysis of key themes, initially identifying 23 categories of leadership. These categories were entered into an Excel™ spreadsheet, together with details of the studies and outcomes for students. An iterative checking process was then undertaken to ensure that the categories identified adequately represented the specific characteristics of leadership mentioned in each study, particularly the characteristics found in the studies situated in Māori-medium contexts.

Into the spreadsheet we added brief descriptions of the leadership practices included under the different categories, and identified exactly who the authors were referring to when they used the term 'leadership'. We then critiqued the entries under each category and merged categories with similar meanings. Categories with fewer than three entries were removed. As a result of this process, the initial 23 categories were merged into the six broad dimensions listed in Figure 16 and discussed in the remainder of this chapter. Additional studies were located that provided theoretical depth and rich descriptions of the practices captured by each dimension—in some instances, descriptions of contrasting negative cases.
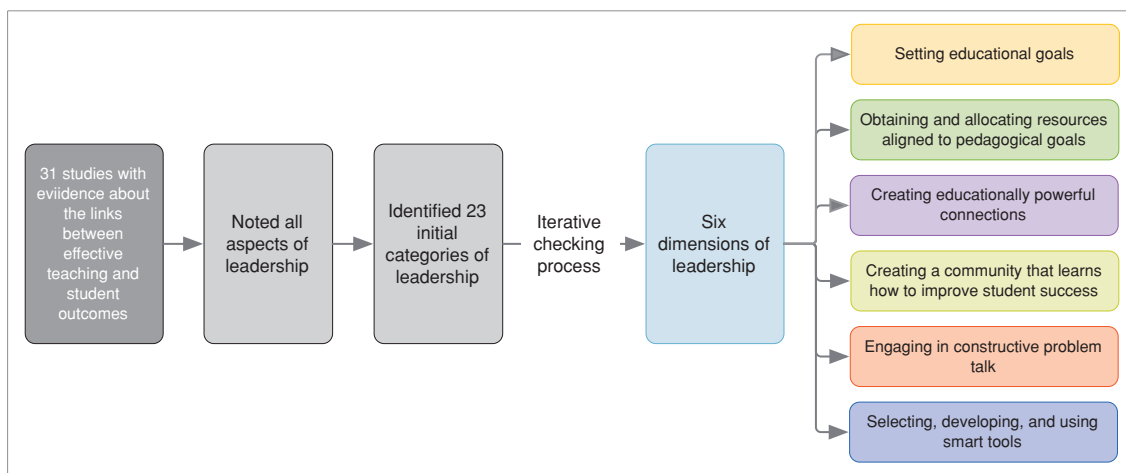
Figure 16. The strategy used to derive six leadership dimensions from New Zealand evidence

---

[221] The methodology used for selecting theses is described in Chapter 3.
[222] In one study, we were unable to identify the sector.
[223] In one study, we were unable to identify the outcomes being measured.

6.2 What is the role of leadership in developing effective teaching?

Each of the six leadership dimensions identified by our analysis is defined, illustrated, and explained in the following sections. Since we wish to avoid creating a leadership checklist, we have attended particularly to the principles and values that explain what makes the different dimensions powerful. In some cases, this has involved linking dimensions with relevant theory. Our discussion of goal setting, for example, includes both practical examples and a brief account of goal-setting theory. The findings of the *Teacher Professional Learning and Development BES* show that provision of underlying principles and theory, together with linked practical examples, is a feature of effective professional learning experiences[224].

Dimension A: Setting educational goals

Setting and communicating goals for teacher and student learning was one of the most obvious exercises of leadership reported by the 31 studies. In many of the improvement projects researched, external leadership set overarching objectives to be followed by all participants. Within these overarching objectives, however, there was usually scope for schools to formulate their own goals. For example, an objective of the national Literacy Leadership Project[225] was to increase the ability of school leaders to work with their staff in ways that improved the literacy of their lowest-performing students. Leaders were required to use an evidence-based analysis of student needs to set specific goals for improving some aspect of literacy. Progress towards the goal was to be monitored through the school's own action-research project. So, although policy makers, researchers, and programme developers were instrumental in setting the overall objectives in this and other initiatives, school leaders had an important role in setting goals that were tailored to the specific needs of their students.

From the studies, it emerges that leaders can set goals effectively if they:
- establish the importance of the selected goals;
- ensure that goals are clear;
- develop the capacity to set appropriate goals.

Leadership establishes the importance of the selected goals

Goals do not motivate unless they are seen to be important. They gain importance by being linked to wider philosophical and moral purposes. Articulating and gaining commitment to such purposes is part of what is meant by visionary leadership. Unlike the research on transformational leadership discussed in Chapter 4, none of the studies used in this analysis discussed or evaluated leadership vision. This is probably because moral and philosophical commitment can be deeply embedded in leadership practice and, unlike a leader's speech or writing, not easily recognised as visionary. Yet it is apparent in some of these studies that the personal commitment of leaders was central to establishing the importance of a goal. In some cases, it was a leader's driving moral or philosophical purpose that, along with relevant evidence, enabled them to recognise a discrepancy between current and desired achievement and led them to discuss this discrepancy with others. It then became their goal to reduce the discrepancy—not for compliance reasons but from a need to be true to themselves. The link between personal, moral, or philosophical commitment and goals is illustrated in Box 3. The context is a kura literacy programme led by the tumuaki in conjunction with an external

---

[224] Timperley, Wilson, Barrar, & Fung (2007), op. cit.

[225] For an evaluation of this initiative and schools' capacity to set goals based on evidence of student need, see Timperley, H. S., Parr, J., & Higginson, R. M. (2003). *Evaluation of the Literacy Leadership initiative: The enhancement programme 2001*. Wellington: Ministry of Education.
Timperley, H. S. (2005b). Instructional leadership challenges: The case of using student achievement information for instructional improvement. *Leadership and Policy in Schools, 4*, pp. 3–22.

researcher and the kura whānau. The goals of the literacy programme are encompassed by a wider vision held by Māori, to which the kura whānau is committed—a vision for the Māori language, cultural regeneration, and educational achievement.

> **Box 3. Establishing goal importance by making links to moral and philosophical commitments**
>
> The tumuaki and whānau leadership of a kura kaupapa Māori cared deeply about the fact that their year 8 students who were highly competent in Māori were struggling when they entered the bilingual programme at the local secondary school (the only option available). They believed that this was due in part to their failure to adequately prepare their students to confidently and competently meet the challenge of learning through the medium of English. The problem was important to them because their graduates were still part of the kura whānau and were therefore still their responsibility. The kura whānau were committed to the principle, enunciated in Te Aho Matua[226] and elsewhere, of competency in both Māori and English. This commitment led the kura whānau and tumuaki to collaborate with a literacy researcher in the delivery of a 10-week English-medium literacy programme. The explicit goal was to improve reading and writing in English while maintaining or improving Māori language and literacy. Post-intervention assessment showed that the gains made during the programme were being maintained one or two terms later. The inclusive, explicit discussion of the problem, combined with a whānau sense of collective responsibility, ensured that all those involved saw the goal as urgent and important[227].

Further evidence that it is important to link goals to wider moral and philosophical purposes comes from a follow-up evaluation of an early literacy intervention in seven South Auckland primary schools[228]. School leaders (principals and senior management teams) were asked why they joined this project. The three most successful schools (as measured by pre-/post-intervention gains in achievement) were distinguished from the others by their frank acknowledgment that dissatisfaction with current reading achievement was one of their reasons for participating. The principals who did not mention achievement said that they had joined the project either because of its fit with their current programme, or because any professional development would be helpful, or because it was sponsored by the Ministry of Education. It is likely that these reasons would have been less compelling for teachers than an open, principal-led discussion of literacy achievement, followed by the principal's explicit commitment to work with staff to raise literacy levels.

The value of linking goals to a compelling moral purpose is also seen in a South Island school's journey "from a deficit model of special education needs programming to an inclusive model of student learning support"[229]. The senior management team wanted to move from a special class model to one that was more inclusive and classroom-based. They were keen to do this because they had increasing numbers of moderate needs children and because they believed (in line with the National Administration Guidelines) that "meeting the needs of all students was a mandatory part of every teacher's job". This moral purpose was embodied in goals to enhance the reading achievement, parent–school relationships, and self-esteem of a pilot group of 26 students, drawn from every class in the school except new entrants.

Leaders give symbolic messages about what is important by what they choose to attend and how they participate. Leaders who not only attend, but also participate in the workshops and meetings associated with an initiative, signal their commitment to its goals and a determination

---

[226] Te Aho Matua is a philosophy specifically developed for kura kaupapa Māori that describes operational principles and principles for teaching and learning.

[227] This vignette is based on Berryman, M. A. (2001). *Toitū te whānau, toitū te iwi: A community approach to English transition*. Unpublished master's thesis, University of Waikato, Hamilton, New Zealand.

[228] Timperley, H. S., & Wiseman, J. (2003). *The sustainability of professional development in literacy: Part Two: School-based factors associated with high student achievement*. Wellington: Ministry of Education.

[229] Morris, C., & Katon, S. (2006). A torrent of change: Enhancing effective change in special education—one school's journey. *Kairaranga, 7*(Special Edition), pp. 28–32.

to support their staff to successfully implement it and achieve the desired outcomes[230]. Presence and visibility (being a 'seen face', kanohi kitea or kia kite a-kanohi) is an important aspect of Māori leadership. Researchers often noted, but without explaining why, that the active support and participation of leaders was an important characteristic of successful, sustainable interventions.

Leadership ensures that goals are clear

According to the considerable literature on goal setting[231], one of the requirements for effectiveness is that goals are clear and unambiguous. Teachers know that this is true when setting student learning outcomes—it is also true when setting goals for the improvement of teaching. Goals are clearer when they include a target and a timeframe (for example, 80% of all students will be at age-expected levels by the end of year 1).

The role of targets was investigated in connection with the Numeracy Development Project[232]. In 13 of the 19 schools involved in the longitudinal evaluation, at least 75% of teachers reported using achievement targets for numeracy. In these schools, with the exception of two year levels, fewer students than in the other six schools were working at the lower stages of the Number Framework.

No matter how often they are articulated by leadership, goals are not clear if they are not understood by those they are intended to influence. This is particularly important when those who set the goals are not those who have to achieve them. Box 4 describes a national literacy intervention in which the goals put in place by the national leadership were not successfully communicated at school level.

Box 4. The importance of checking whether goals are clear

One of the goals of the national Literacy Leadership Project (2000–03) was to give principals and literacy leaders the skills to work more effectively with teachers to raise the achievement of their lowest-performing students. Facilitators were asked to "work directly with the principal and literacy leader only with the aim of upskilling them sufficiently to work more effectively with their staff" (p. 238)[233]. The aim of enhancing learning-centred leadership was made explicit in the workshop materials. A project evaluation was conducted in 29 primary schools across the country, selected by the national facilitators as representative of varying levels of success. When the evaluators asked facilitators, principals, literacy leaders, and teachers to tell them whose learning needs were the focus of the project, only the facilitators consistently nominated school leadership. Principals and literacy leaders consistently saw the initiative directed at teacher and student learning, not their own. The evaluation did not provide a definitive explanation for this mismatch. One possibility is that the facilitators did not know how to tell school leaders that they were the focus. Another is that they spent so much time working with teachers rather than leaders that the original intention was overlooked. A third possibility is that school leaders did not study the rationale and purpose of the initiative so did not position themselves as learners alongside their teachers. The evaluation showed that the initiative made no difference to the reading achievement of students.

---

[230] Amongst other sources, see:
Absolum, M. (2004a). *Assess to Learn Project* (Project proposal submitted to the Ministry of Education). Auckland: Evaluation Associates.
Trinick, T. (2005). Te Poutama Tau: A case study of two schools. In *Findings from the New Zealand Numeracy Development Project 2004* (pp. 103–114). Wellington: Ministry of Education.

[231] See Latham and Locke for an accessible summary of this research and the discussion at the end of this section:
Latham, G. P., & Locke, E. A. (2006). Enhancing the benefits and overcoming the pitfalls of goal setting. *Organizational Dynamics, 35*(4), pp. 332–340.

[232] Thomas, G., & Tagg, A. (2005). Evidence for expectations: Findings from the numeracy project longitudinal study. In *Findings from the New Zealand Numeracy Development Project 2004*. Wellington: Ministry of Education.

[233] Timperley, H. S., & Parr, J. M. (2005). Theory competition and the process of change. *Journal of Educational Change, 6*, pp. 227–251.

Leadership develops the capacity to set appropriate goals

Setting appropriate goals involves more than learning how to specify targets that are objective and measurable. Goal setting—for both teacher and student learning—is part of a cycle of evidence-based assessment, analysis, and determination of next steps. As we will show in Chapter 8, to do this well, leaders need considerable knowledge of subject-specific assessment, curriculum progressions, and pedagogical strategies. It was a feature of successful projects that leaders checked, rather than assumed, teachers' capacity to set appropriate goals and, where needed, provided opportunities for them to learn how to link student data to next teaching steps[234].

In the early stages of some New Zealand initiatives, policy makers and programme developers have not adequately checked the capacity of the implementing agents to meet the objectives and have consequently underestimated the amount of learning and support that teachers and school leaders will need. In the Literacy Leadership Project, for example, few schools were able to complete the required evidence-based assessment, goal setting, and action-research project. The subsequent Literacy Professional Development Project[235] recognised the complexity of these tasks and the need for more expert support. As a consequence, its impact on both teacher and student learning has been much more significant.

Goal setting requires an appropriate level of difficulty to be established. If goals are seen to be too difficult or too easy, they will not be motivating. The perceived difficulty of a goal and the perceived capacity to meet it are inseparably linked, so what counts as difficult will change as capacity changes. Box 5 describes how one school leader worked with her staff to set progressively more challenging goals for student achievement.

Box 5. An assistant principal helps teachers set and achieve more challenging goals

The assistant principal in a low-decile, urban primary school worked with a university researcher to lift levels of reading achievement. Initially, the teachers rejected the use of national benchmarks, believing them to be unrealistic for their students. The author[236] writes:

"They indicated that they already knew that the students were reading below expectations for their age. Various comments alluded to the belief that national expectations were unrealistic for their students. For example, when the assistant principal indicated the expected reading level after six months at school, one teacher asked in an aside, 'Is that according to real life?'" (p. 10).

One year later, after learning to use classroom data to improve their teaching, the staff involved were setting national benchmarks as their goal and routinely plotting their students' reading data against them. One teacher explained, "I think you have got to have expectations and you have to have something to aim for. I guess it comes down to what the vision is, where we collectively want the kids to be as well" (p. 16).

---

234 Descriptions of such work are available in:
Absolum (2004a), op. cit.
Absolum, M. (2004b). *ATOL programme 2004* (report prepared for company purposes only). Auckland: Evaluation Associates Ltd.
Fung, I. Y. Y., Townsend, M. A. R., & Parr, J. M. (2004). *Teaching school children to think critically in language arts: How and why?* Paper presented at the British Educational Research Association Annual Conference (16–18 September), UMIST, Manchester, UK. Retrieved from: www.leeds.ac.uk/educol/documents/00003713.htm
Parr, J., Timperley, H., Reddish, P., Jesson, R., & Adams, R. (2006). *Literacy Professional Development Project: Identifying effective teaching and professional development practices for enhanced student learning.* Milestone 5 (Final report). Wellington: Learning Media.
Phillips, G., McNaughton, S., & MacDonald, S. (2001). *Picking up the pace: Effective literacy interventions for accelerated progress over the transition into decile one schools* (Final Report). Wellington, NZ: Ministry of Education. Retrieved from: www.minedu.govt.nz/web/document/document_page.cfm?id=6444
235 Parr, Timperley, Reddish, Jesson, & Adams (2006), op. cit.
236 Timperley, H. S. (2005b). Instructional leadership challenges: The case of using student achievement information for instructional improvement. *Leadership and Policy in Schools, 4*, pp. 3–22.

Explaining the power of goal setting

Goal setting is a powerful leadership tool, and since the studies discussed above were not designed as studies of leadership (let alone goal setting), it is important that we help readers understand how and why it is effective.

There is a long history of empirical research on goal setting, recently summarised in an easily accessible form by two of the leading theorists (see Figure 17). The following discussion is based on their recent paper[237].

Conditions required

· Capacity to meet goals

· Commitment to specific goals

· Specific and unambiguous

Processes involved

Goals:

· Create a discrepancy between current realities and desired future states

· Motivate persistent goal-relevant behaviour

· Focus attention and effort

Consequences

· Higher performance and learning

· Sense of purpose and priority

· Increased sense of efficacy

· Increased enjoyment of task

Figure 17. How does goal setting work?

Goal setting works by creating a discrepancy between the current situation and a desired future state. For people committed to a goal, this discrepancy is experienced as constructive discontent that motivates persistent, goal-relevant behaviour. Goals focus attention and lead to more determined and sustained effort than would otherwise be the case. For example, a teacher's goal is to have 80% of her students achieving at or above age-appropriate levels in reading comprehension by the end of the year. As only 50% do so at present, she is motivated to systematically record and review their performance and to seek more successful ways of teaching.

Goals are only motivating, however, if the three conditions listed in the left-hand box in Figure 17 are met:

1. Teachers, parents, or students feel they have the capacity to meet the goals: either they believe their current resources are sufficient for the purpose or they are confident they will be given the additional expertise and support they need.

2. People are committed to the goals. This requires first of all that they understand and value them. As long as this is the case, it does not matter whether they participate in the actual goal-setting process. New Zealand research on teacher professional development in literacy does, however, draw attention to the effectiveness of goals that are co-constructed and based on a joint analysis of problems[238]. This is probably because the shared process enhances teachers' understanding of what it will take to achieve the goals at the same time as it builds their capacity and confidence.

3. The goals are specific and unambiguous. Specificity makes it possible to assess progress and adjust one's practice accordingly. Self-regulation is impossible if the goal—and, therefore, progress towards the goal—is unclear.

Goal setting enhances performance and learning. It is also psychologically beneficial in that, by bringing clarity of purpose, it no longer seems that everything is equally important and

---

237 Latham & Locke (2006), op. cit.
238 Parr, Timperley, Reddish, Jesson, & Adams (2006), op. cit.

overwhelming. This sharpened focus and sense of purpose can lead to greater enjoyment of one's work and greater willingness to take on challenges.

There are, of course, limitations and pitfalls to be aware of. They are summarised in the following table, together with strategies for preventing or overcoming them:

Table 7. Goal setting: common problems and how to overcome them

Problem	Strategy
People lack the skills and knowledge to achieve the goal.	Set relevant learning rather than performance goals.
Individuals' goals may be in conflict with others' goals.	Set team or superordinate goals.
Failure to achieve goals is seen as a risk.	Encourage and reward learning from mistakes.
Successful goal attainment can reinforce old strategies that are inappropriate in a changing environment.	Invite robust critique and review of goals and strategies for reaching them.
Accountability for goal attainment can lead to biased and inaccurate reporting.	Check validity of a small sample of reports. Leaders model an ethical culture and show no tolerance for deviations.
Important outcomes that are not set as goals may be ignored.	Set more inclusive goals. Set goals for all critical outcomes. Inquire into goal interrelationships.

It is one thing to set good goals and gain commitment to them and another to successfully pursue them in the face of the constant distractions of other necessary work. The section in Chapter 2 on principals' use of time highlights this particular challenge confronting principals who want to take greater responsibility for leading teaching and learning. Practical advice about how to manage the distractions, together with the problem-solving and interpersonal skills required, will be found in Chapter 8[239].

Dimension B: Obtaining and allocating resources aligned to pedagogical goals

Leadership is exercised in obtaining and allocating material, intellectual, and human resources to meet pedagogical goals. Of all the functions that come under this dimension, the most important of all is appointment of teaching staff, since quality of teaching explains more of the variance in student achievement than any other system variable[240].

Leaders at all levels of the system play a vital role in working with teachers to identify and develop appropriate teaching resources and ensuring that these resources are readily available. For Māori-medium schools, finding resources that align pedagogically and philosophically with valued goals is a significant challenge as there are relatively fewer teaching and assessment resources available in te reo Māori[241].

---

[239] Practical advice about how to manage distractions in ways that do not undermine the pursuit of goals is also found in Levin, B. (2009) *How to change 5000 schools: A practical approach for leading change at every level*. Cambridge, MA: Harvard Education Press.

[240] Alton-Lee, A. (2004, June). *Impact of teaching and schools on variance in outcomes*. Retrieved October 6th, 2006, from www.minedu.govt.nz/web/downloadable/dl8910_v1/impact-of-teachers-and-schools-on-variance-in-outc.doc

[241] Rau, C. (2005). Literacy acquisition, assessment and achievement of year two tauira in total immersion in Māori programmes, *The International Journal of Bilingual Education and Bilingualism, 8*(5), pp. 404–432.

Resource availability and allocation not only impacts the quality of teaching, it has wider societal implications via its influence on school quality, which has been shown to have a remarkable impact on economic growth[242]. Yet simply increasing resources will not improve the quality of teaching and learning[243]: the challenge is to strategically align resources to pedagogical goals, not accumulate resources as an end in itself[244].

Besides obtaining and allocating the materials and information needed for improving teaching and learning, strategic alignment may also involve developing or recruiting the expertise to use these effectively. Such expertise might already exist within the school—in the staff or students, or in the community or kura whānau. When this is the case, leadership may involve identifying those with the particular expertise needed or selecting individuals for important roles. For example, the principal of a decile 2 school in Manukau City asked two teachers to share with their colleagues how they had successfully raised the achievement of five of their students with learning and behaviour difficulties. Over the course of three one-and-a-half-hour professional development sessions, these teachers explained how, supported by a university-based facilitator, they had used an action-research process to examine and then change their own practice in ways that led to significant improvements in the reading, writing, and behaviour of these previously hard-to-teach students. The principal reported:

> This exercise has reinforced a belief, long held by the senior management of this school, that sharing of expertise within our own learning community, by staff members who know and understand our students, is the most powerful tool in effecting change. From my observation of the two staff members involved in the project I noted an increased understanding of the value of cooperatively interchanging ideas and practice, an increased ability to clearly define the outcomes they required and a subsequent growing in confidence in their ability to move their students forward (p. 37)[245].

When expertise is not readily available, leadership seeks it out. This is illustrated in the vignette in Box 3. The tumuaki, on behalf of the kura whānau, sought the expertise of a researcher to help the kura better prepare graduates to cope with the academic English they would encounter at secondary school.

In the initiatives described in the 31 studies reviewed for this chapter, expertise often came into schools from outside in the form of project personnel, who assumed key leadership roles. As we examined how these external personnel and school-based leaders identified and obtained resources aligned to the purpose of improving teaching and learning, two points emerged:

Leaders who strive to identify and obtain resources aligned to pedagogical goals:
- use clear criteria that are aligned to pedagogical and philosophical purposes;
- ensure sustained funding for pedagogical priorities.

Leadership uses clear criteria that are aligned to pedagogical and philosophical purposes

Effective identification of material and human resources is not an ad hoc process. Rather, it is guided by already-established goals and purposes. These purposes shape the development of the criteria used to identify the necessary resources. Leadership ensures there is shared awareness and understanding of the purpose of the resources and of the criteria that will be used to identify or develop them. An example of clear identification of relevant expertise from within a school is found in Figure 22 on page 136. Teachers in the school disaggregated data so that they could see exactly which students—and, therefore, exactly which teachers—needed

[242] Hanushek, E. A. (2005). *Economic outcomes and school quality*. Paris: IIEP and Brussels: IAE.

[243] ibid.

[244] Bryk, A. S., Sebring, P. B., Kerbow, D., Rollow, S., & Easton, J. Q. (1998). *Charting Chicago school reform: Democratic localism as a lever for change*. Boulder: Westview Press.

[245] Hiranniah, N., & Mahoney, B. (2006). Within our circle of influence. *Kairaranga, 7*(Special Edition), pp. 33–38.

more help. The disaggregation also enabled them to identify one of their number who was particularly successful in raising the achievement of her students. As a result, colleagues observed her teaching, were coached by her, and actively sought her advice[246].

In this example, the teacher expert and her colleagues knew why she was selected and understood her resource person role. A contrasting study, of a project called Te Kauhua, highlights how important it is that staff are aware of the criteria for selection. Te Kauhua focused on helping teachers understand the types of teacher–student relationships that foster Māori achievement[247]. Over half the teacher-facilitators who had been seconded for two and a half years to clusters of participating schools raised the need for greater clarity about their roles and responsibilities—they were neither sure of their roles nor sure of why they had been appointed.

To meet specific goals, it may sometimes be necessary to identify and recruit individuals with the required expertise from outside the school. The importance of clear links between recruitment criteria and educational goals can be seen in the vignette in Box 6. The scenario in this case is a school that has been invited to send a Māori cultural group of 24 students to perform at an international cultural festival.

Box 6. Recruiting personnel who have the knowledge and qualities necessary for meeting educational goals

Preparation for the performance involved implementation of an intensive Māori culture group experience. This was combined with a carefully planned and implemented series of interventions and activities designed to improve the students' self-esteem and sense of agency, which, according to standardised test results, were low. The impacts of the experience on academic performance were also evaluated. The Pākehā deputy principal, who had been leading the cultural group, decided to appoint a kaiako and kaiarahi reo from a local marae to take over this role. The deputy principal helped ensure that the culture group's programme was culturally appropriate by recruiting skilled Māori personnel. These people had the knowledge and expertise to successfully prepare the group for their performance. They could also assist in developing cultural identity and by acting as role models. As they were not trained teachers, they were given some specific training in developing children's self-esteem and sense of agency.

Pre- and post-assessments of the children in the culture group showed that there were positive, statistically significant changes in students' self-esteem and sense of agency over the course of the intervention. There was also a small positive effect on academic achievement. Neither of these changes was observed in a comparison group.[248]

Picking up the Pace[249], an early literacy initiative, provides an example of how criteria for identifying and obtaining material resources can be driven by externally facilitated changes to current practice. Box 7 describes how these changes demanded new criteria for the allocation and use of resources.

[246] Timperley, H. S., & Wiseman, J. (2003). *The sustainability of professional development in literacy: Part 2. School-based factors associated with high student achievement*. Wellington: Ministry of Education. Retrieved from www.minedu.govt.nz/index.cfm?layout=document&documentid=8638&data=l

[247] Tuuta, M., Bradnam, L., Hynds, A., Higgins, J., & Broughton, R. (2004). *Evaluation of the Te Kauhua Māori mainstream pilot project*. Wellington: Ministry of Education.

[248] This vignette is drawn from Rubie, C. (1999). *The effect of a Māori culture group experience on children's self esteem, locus of control and academic performance*. Unpublished master's thesis, University of Auckland.

[249] Phillips, G., McNaughton, S., & MacDonald, S. (2001). *Picking up the pace: Effective literacy interventions for accelerated progress over the transition into decile one schools* (Final report). Wellington: Ministry of Education. Retrieved from www.minedu.govt.nz/web/document/document_page.cfm?id=6444

Box 7. Pedagogically aligning resources to changing practices

A New Zealand professional development research project in literacy teaching had shown how the traditional big book activity, involving a whole class, left low-progress children somewhat confused. In light of this finding and international research showing that effective teachers use a range of rich texts, Picking up the Pace facilitators worked with teachers to change their practice. Instead of reading big books with the whole class, they read a range of appropriate small books with small groups of students. Reading five small books (appropriate in terms of topic, text meaning, difficulty, vocabulary, etc.) every day as a part of a flexible, small-group Reading To programme, instead of one big book over several days, was found to be a more helpful practice. As the children read the different books, the teachers were able to observe the kinds of text selected and discern mismatches between text and reader perception. The junior school leadership had to respond to these changes, ensuring that suitable texts were available, that instructional reading happened with a small (rather than large) group, and that there were appropriate tasks and resources for the other groups of children.

Besides aligning pedagogically, resources need to align with philosophical purposes and teaching programmes. Trinick studied two kura that had participated in Te Poutama Tau in 2003 and shown gains in mathematical achievement[250]. This professional development programme for Māori-medium teachers of numeracy is based around what is known as the Number Framework. Developed specifically for the New Zealand context, the programme requires individual schools to opt in. The senior staff of the kura agreed that their success with Te Poutama Tau was partly because the teaching and learning philosophy behind it aligned well with the school's commitment to cooperative learning. Cooperative learning approaches also align well with the philosophy behind Te Aho Matua[251].

Timely availability is one aspect of resource alignment. Te reo Māori versions of key resource materials (such as the diagnostic interview and teacher booklets) were developed as part of the Te Poutama Tau programme but, as Christensen notes, facilitators were working with Māori-medium teachers well before these became available[252].

Notwithstanding the timeliness issue, Te Poutama Tau resources have helped Māori-medium teachers understand the stages by which students typically develop understanding of number, and this in turn has helped them cater more effectively for the individual learning needs of their students[253]. Te Poutama Tau represents a significant step forward in terms of aligning pedagogy and resources to Māori educational philosophy and aspirations.

In English-medium schools, the commitment of leaders is a major determinant of the priority given to purchasing or developing resources for Māori-medium teaching. In a study of three schools, Clark[254] found little commitment on the part of senior leadership to assessing and reporting the te reo Māori achievements of students from Māori-medium programmes. Māori-medium teachers from two of the schools described how they fitted bilingual outcomes into the English-medium report template as best they could. In one, teachers had to attach a separate te reo Māori report to the standard report. In these schools, resources for assessing and reporting were not aligned to important pedagogical and cultural goals.

---

[250] Trinick, T. (2005). Te Poutama Tau: A case study of two schools. In *Findings from the New Zealand Numeracy Development Project 2004*. Wellington: Ministry of Education, pp. 103–114.

[251] Te Aho Matua is a philosophy specifically developed for kura kaupapa Māori that describes principles for operation and teaching. It has a focus on cooperative learning.

[252] Christensen, I. (2003). *An evaluation of Te Poutama Tau 2002: Exploring issues in mathematics education.* Wellington: Ministry of Education.

[253] ibid.

[254] Clark, S. M. (2003). *Reporting to parents in Māori bilingual units.* Unpublished master's thesis, University of Auckland.

In an evaluation[255] of the use of commercially available literacy packages in English- and Māori-medium classrooms, teachers were asked a series of interview questions designed to find out how well they could match the packages with the needs of their students. The authors write:

> The conclusion with respect to obtaining a match between needs of students and features of the package is that this was often problematic from the outset. Not all schools, by any means, were clear about what the package they were selecting had to offer or how this related to the needs of their students. Schools were prepared to rate the package highly in terms of meeting needs of their students but were generally unable to specify the way in which the package helped them to cater for the needs of target groups (p. 35).

The evaluators' report includes a detailed, hypothetical case of how a deputy principal might lead a series of evidence-based discussions about the literacy learning needs of their students, selection of a resource to match those needs, and ongoing evaluation of its impact on student reading.

Leadership ensures sustained funding for pedagogical priorities

There is a conspicuous shortage of New Zealand research on how school leaders identify and obtain resources in the everyday business of leading a school. Most of the studies from which we have derived leadership dimensions involve improvement projects, but resources made available during the 'hothouse' phase of an intervention will not necessarily be available on an ongoing basis from regular school budgets[256]. For this reason, concern is often expressed during improvement projects that, to sustain new practices and gains in student outcomes, continued access to resources is required. Provision of these resources is a bottom line[257], but meeting it can be problematic when the extra funds associated with a project run out and continued work must be funded from the regular school budget[258].

The McDowall et al. study provides evidence about how school leadership might address concerns about the ongoing funding of programmes that are initially partly externally funded[259]. This study, described in Box 8, focused on decisions relating to Reading Recovery, an early intervention for students making limited progress in reading and writing after their first year at school.

Box 8. Ensuring that there is sufficient funding for pedagogically aligned resources

The number of Reading Recovery places available in a school is dependent on hours provided by the Ministry of Education specifically for the purpose and on what the school allocates from its operations grant and other discretionary funding. Schools are expected to at least match the hours provided by the Ministry, so the extent to which they meet the need for Reading Recovery places is partly dependent on their priorities for discretionary funding. In all but one of the case study schools, the school contribution was greater—sometimes considerably greater—than the hours provided by the Ministry. Schools can also use discretionary funding to cater for unexpected placements or to provide time for Reading Recovery teachers to carry out extra activities such as monitoring discontinued students. Some effective Reading Recovery schools have taken up this option. Their leaders realised that successful implementation of Reading Recovery necessitated adjustments to funding,

---

255 Parr, J., Aikman, M., Irving, E., & Glasswell, K. (2004). *An evaluation of the use and integration of readymade commercial literacy packages into classroom programmes* (Final report). Wellington: Ministry of Education.

256 McLaughlin, M. W., & Mitra, D. (2001). Theory-based change and change-based theory: Going deeper, going broader. *Journal of Educational Change, 2*(4), pp. 301–323.

257 ibid.

258 ibid.

259 McDowall, S., Boyd, S., Hodgen, E., & Vliet, T. V. (2005). *Reading Recovery in New Zealand: Uptake, implementation, and outcomes, especially in relation to Māori and Pasifika students.* Wellington: New Zealand Council for Educational Research.

often at the expense of other things. Leaders face a delicate juggling act when deciding how to use their school's discretionary funding[260].

Contestable funding is another possible avenue for leaders wanting to access ongoing material and human resources for priority areas, but there may be considerable opportunity costs associated with such funding. A report prepared for the Ministry of Education highlights principals' concerns:

Box 9. Opportunity costs in relation to compliance requirements associated with resourcing

Fifty school principals and board of trustees members from 29 schools were interviewed about their schools' experiences of compliance requirements. Fourteen principals said that they found the compliance and reporting associated with contestable resourcing onerous and time-consuming, particularly with respect to teacher and teacher aide hours and funding. Eight principals were concerned about the amount of time it took to prepare funding applications and to meet compliance and reporting requirements for successful applications. Principals and trustees also said they faced considerable human and other costs meeting compliance requirements such as those related to electrical safety (e.g., checking power cords[261]) and road safety (e.g., supervisor-to-student ratio when crossing roads)[262].

In New Zealand's largely self-managing environment, strategic resourcing is a key responsibility of school leadership, yet there are few resources to help school leaders learn how to use the resources they have to more effectively support the improvement of teaching and learning[263].

Dimension C: Creating educationally powerful connections

Leadership through the creation of educationally powerful connections designed to improve teaching and learning was apparent in many of the 31 studies in our analysis. Connections between individuals, organisations, and cultures can contribute to enhanced student achievement by ensuring a closer pedagogical and philosophical match between what happens at home and at school. Pedagogical match is also enhanced when schools provide continuity of content and teaching approach for students as they move from one programme or class to another.

While relationships are important in all the dimensions identified in this chapter, this is particularly the case when it comes to creating connections and continuity. Effective relationships both reflect and build shared understandings and goal commitments. They can also lead to greater knowledge of and respect for individual and cultural identities. In this discussion, however, our emphasis is adult relationships, collaborations, and partnerships that are focused on the achievement and well-being of students[264]. As Fullan notes, "unless the right things are being focused on, collaborative relationships *may end up being powerfully wrong*"[265].

Our analysis shows that leaders create educationally powerful connections when they:

- establish continuities between student identities and school practices;
- develop continuities and coherence across teaching programmes;
- ensure effective transitions across educational settings.

---

[260] ibid., pp. xv–xvi.

[261] Ministry of Education internal memo (12 March 2007), a summary of issues raised by principals and principal bodies regarding electrical testing in schools.

[262] Malone, K. (2006). *Project report: Reducing compliance; increasing trust*. A report prepared for Education Management Policy, Ministry of Education and Kingston Associates.

[263] A starting point for developing such New Zealand resources could be Karen Hawley Miles and Stephen Franks' forthcoming book, *The strategic school: Making the most of people, time and money*. Thousand Oaks, California: Corwin Press.

[264] Timperley, H., & Robinson, V. (2002). *Partnership: Focusing the relationship on the task of school improvement*. Wellington: New Zealand Council for Educational Research.

[265] Fullan, M. (2001). *Leading in a culture of change*. San Francisco: Jossey-Bass. p. 67.

Leadership establishes continuities between student identities and school practices

Te Kotahitanga[266] is an initiative to increase the achievement of Māori students in English-medium secondary schools. The major strategy involves building relationships between individuals and groups, establishing the kinds of connections and continuities that have been shown to make a difference to the outcomes of Māori students. Māori students can experience major discontinuities between the cultural practices encountered in the classroom and their culturally located identities[267]. Te Kotahitanga seeks to address this problem by developing learning–teaching relationships that recognise and affirm Māori students' identities. Leadership is needed from researchers and professional developers, principals, and boards of trustees (among others) to facilitate such relationships and promote a common vision of educational excellence for Māori. Bishop et al.[268] identify connectedness as fundamental. This requires "teachers who are committed to and inextricably connected to their students and the community" (p. 25), plus complementary school and home aspirations. Recent findings appear to indicate that Māori students whose maths teachers have undergone Te Kotahitanga training achieve more highly than those whose teachers have not[269]. Even more important is the evidence that, for the period 2005–06, the level 1 NCEA results of participating schools improved significantly more than those of a comparison group of schools[270].

Results from the National Education Monitoring Project (NEMP) also show that learning experiences that connect with their cultural knowledge give Māori students opportunities to achieve across a range of learning areas. For example, Māori achieve significantly better than Pākehā in tasks that involve Māori contexts[271].

Nakhid[272] provides a vivid example of the discontinuities that can occur for Pasifika students when teachers have not developed their knowledge, skills, and understandings and, for this reason, cannot positively mediate relationships between Pasifika students and their non-Pasifika peers. Two groups of Pasifika students involved in her doctoral research described what often happened when they asked questions about parts of lessons that they didn't understand:

Group 1 students

Researcher:	What makes you feel they [classmates] look down on you?
Sina:	We keep on asking questions and they just go 'Ugh'. I feel like slapping them.
Tavita:	It's true. You feel like standing up and bop them.
.....	
Researcher:	When they go 'Ugh', do the teachers do anything about that?
Sina:	No.
Elena:	No, they [the teachers] start laughing at us.

---

[266] Bishop, R., Berryman, M., Cavanagh, T., Teddy, L., & Clapham, S. (2006). *Te Kotahitanga phase 3: Whānaungatanga: Establishing a culturally responsive pedagogy of relations in mainstream secondary school classrooms.* Wellington: Ministry of Education Research Division and Poutama Pounamu Research and Development Centre.

[267] Such discontinuities conflict with the broad goal of education 'enabling Māori to live as Māori'. See Durie, M. (2001, February), *A framework for considering Māori educational advancement.* Opening Address, Hui Taumata Mātauranga, Turangi.

[268] Bishop, Berryman, Cavanagh, Teddy, & Clapham (2006), op. cit.

[269] ibid.

[270] Memo from NZQA Senior Statistical Analyst to Ministry of Education Chief Education Advisor 29 July, 2007.

[271] Crooks, T., & Flockton, L. (2006). *Social studies: Assessment results 2005.* National Education Monitoring Report. Dunedin: Educational Assessment Research Unit.

[272] Nakhid, C. (2003). Comparing Pasifika students' perceptions of their schooling with the perceptions of non-Pasifika teachers using the 'mediated dialogue' as a research methodology. *New Zealand Journal of Educational Studies, 38*(2), pp. 220–221.

Group 2 students

Researcher:	What do you do when the teachers laugh?
Ripeka:	Laugh with them. You laugh it off but you're really angry.
Mele:	Then it just makes you just forget about asking the question in the first place.
Ripeka:	And never again
Mele:	Yeah.
…..	
Mele:	And there's always a time when you ask the teacher, and the teacher like totally ignores you and then you turn around and ask someone else, someone who you think might know in the class, then you get in trouble for talking in the first place but they didn't answer your question.

Nakhid explains how experiences of this kind, which stem from disconnection between their Pasifika identities and school practices, disadvantage students by discouraging them from participating in the classroom. In their eyes, teachers condone the negative behaviour of their non-Pasifika classmates by not intervening or preventing it.

Leadership develops continuities and coherence across teaching programmes

A coherent teaching programme is guided by a common set of principles and key ideas. These drive strategies for teaching and assessment and inform policies and procedures (relating, for example, to staff recruitment, evaluation, and professional development) that impinge on the teaching programme. High-quality programmes have high-quality content and a high degree of coherence.

While none of the New Zealand studies attempted to measure programme coherence, there were many leadership activities that had an impact on coherence. For example, in some studies, teachers at a particular year level learned a common approach to teaching and assessing junior school reading[273] or writing[274]. One study showed that, by permitting staff to opt out of a common pedagogical approach, leaders may put student achievement at risk[275].

An investigation into the sustainability of the gains from an intensive professional development course on literacy acquisition shows the importance of continuity and coherence across a teaching programme. The professional development involved the literacy leaders and teachers of year 1 classes from seven schools. The two schools with the highest achievement in year 3 (schools F and G in Table 8) were the only schools where participating teachers attended regularly scheduled meetings at which benchmarked achievement data, disaggregated by level, were available for discussion[276]. In these two schools, the principal had explicitly assigned to the literacy leader responsibility for ensuring that implementation across classes was consistent.

---

[273] Phillips, G., McNaughton, S., & MacDonald, S. (2001). *Picking up the pace: Effective literacy interventions for accelerated progress over the transition into decile one schools* (Final report). Wellington: Ministry of Education. Retrieved from www.minedu.govt.nz/web/document/document_page.cfm?id=6444.

[274] Parr, J., Timperley, H., Reddish, P., Jesson, R., & Adams, R. (2006). *Literacy professional development project: Identifying effective teaching and professional development practices for enhanced student learning. Milestone 5 (Final Report)*. Wellington: Learning Media.

[275] Timperley, H. S. (2005a). Distributed leadership: Developing theory from practice. *Journal of Curriculum Studies, 37*(4), pp. 395–420.

[276] The Early Childhood Primary Link (ECPL) was developed and delivered by Dr Gwenneth Phillips of the Child Literacy Foundation.

Table 8. Analysis of meetings[277]

| School | Achievement data discussed | | | | Implementation discussed |
	Regularity of schedule	Length of meeting	Benchmarked achievement data for year level	Achievement data for class	
A	Not scheduled	N. A.	N. A.	N. A.	One meeting
B	Irregularly	1 hour	Yes	No	Irregularly
C	Not scheduled	N. A.	N. A.	N. A.	Irregularly (first year only)
D	One in year 2	1 hour	Yes	No	Not scheduled
E	Irregularly (second year only)	20–30 mins	Second year only	No	Irregularly (first year only)
F	Regularly (twice per term)	30 mins	Yes	Yes	Regularly (same meeting)
G	Regularly (once per term)	1 hour	Yes	Yes	Regularly (same meeting)

Leadership ensures effective transitions across educational settings

Leaders create educationally powerful connections by ensuring that learners are able to make effective transitions from one educational setting to another. An aim of the Picking up the Pace early literacy initiative was to promote continuity in literacy development between early childhood centres and primary schools. In this way, it was hoped to make better use of children's pre-school learning when they entered primary school. Early childhood teachers typically said they knew a little about the teaching of reading and writing at school, but the majority of primary teachers said they knew very little about reading and writing in early childhood centres. Both thought it would be useful to know more about children's development and about the teaching and learning that was going on in the other setting.

In this case, effective transitions were achieved in two ways. The first involved a focus on literacy and language activities in early childhood centres. The second involved changing primary school teachers' beliefs about literacy acquisition during the first year of school. A consequence of the programme was that teachers became more aware of the strengths children brought with them when they started school. One teacher explained:

> I realise that they actually know more about book knowledge than I was aware of before, like where a book starts and ends, all that sort of thing. I wasn't really focusing on that before, but now after doing the course, I can see that the kids come in with that knowledge already, you don't need to teach it.[278]

Another consequence was that the children made substantial gains in literacy by the end of the first year at school.

Effective transitions are promoted, not only by ensuring that teachers know more about learners and the teaching they have experienced, but also by using culturally valued practices. Box 10 illustrates how Te Poutama Tau leaders drew on culturally valued social processes to smooth the transition from a kōhanga reo to a Māori-medium school.

[277] Timperley, H. S., & Wiseman, J. (2003). *The sustainability of professional development in literacy: Part 2. School-based factors associated with high student achievement.* Wellington: Ministry of Education. Retrieved from www.minedu.govt.nz/index.cfm?layout=document&documentid=8638&data=l, p. 80.

[278] Phillips, McNaughton, & MacDonald (2001), op. cit., p. 118.

Box 10. Using culturally valued processes to support transitions

The principal and senior staff of a Māori-medium primary school helped prepare for the transition of children from the local kōhanga reo by visiting it. In this way, they became kanohi kitea ('seen faces'). Cultural processes were an important element in these visits— recognising and affirming the kōhanga reo and school's shared commitment and contribution to Māori language and culture. During the visits, features of the school and classroom life were discussed with staff and parents, and they were given an introduction to Te Poutama Tau (the Numeracy Project).

Positive effects on children's learning were indicated:

"The principal thought that this had positive outcomes, with a number of kōhanga graduates entering the kura beyond the emergent stage of the Number Framework" (p. 82)[279].

Chapter 7 complements these findings derived from the backward mapping of educationally powerful connections by focusing on school–home connections that have the largest effects on student achievement.

Dimension D: Creating a community that learns how to improve student success

Whether initiated by researchers and developers from outside, or by the school's own leadership, many of the interventions described in these 31 studies involved groups of teachers meeting regularly to review and improve their teaching. In doing so, they developed a shared language and a shared set of experiences relating to their endeavours. These regular meetings also provided mutual support during what could be a tough change process.

There is nothing new about teachers working in groups: staff, syndicate, and departmental meetings are a standard feature of school life. If, however, they are to provide benefit for students as well as support for teachers, they need to be characterised by particular qualities. The qualities that emerged from our reading of the New Zealand studies are similar to those identified by Timperley et al. in their recent synthesis of evidence on the impact of professional learning and development on students[280].

> Collaborative opportunities for professional learning are most likely to deliver benefit for students when they are characterised by:
> - an intensive focus on the relationship between teaching and learning;
> - collective responsibility and accountability for student achievement and well-being.

Leadership focuses on the relationship between teaching and learning

In the research reviewed in chapters 4 and 5, a strong academic focus distinguished high-achieving schools from low-achieving schools with similar student background characteristics. The New Zealand research[281] confirms this finding and provides rich descriptions of how an academic focus can deliver benefits for students. It shows that strong academic focus is not about excessive emphasis on test results or pressure on teachers and/or students to raise scores unaided. It is much more about in-depth, collaborative analysis of the relationship between how teachers teach and what students learn.

---

[279] Trinick, T. (2005). Te Poutama Tau: A case study of two schools. In *Findings from the New Zealand Numeracy Development Project 2004,* (pp. 103–114). Wellington: Ministry of Education.

[280] Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). *Teacher professional learning and development: Best Evidence Synthesis Iteration (BES).* Wellington: Ministry of Education.

[281] Timperley, H. S. (2005b). Instructional leadership challenges: The case of using student achievement information for instructional improvement. *Leadership and Policy in Schools, 4*, pp. 3–22.
Parr, Timperley, Reddish, Jesson, & Adams (2006), op. cit.

The importance of focusing on the teaching–learning relationship was demonstrated in a follow-up study of literacy professional development in seven Auckland primary schools. The study found a correlation between the content of professional discussions on reading and whether students were (or were not) reading at age-appropriate levels. Careful coding of these discussions indicated that teacher and student learning both benefited when teachers talked with each other about how they taught particular lessons and what it was that their students understood or achieved as a result. Such talk was more productive than that which focused on teaching without considering its impact on students[282]. In the two schools where student reading achievement was highest, the proportion of meeting time devoted to discussing the problems of specific students and how to address them was substantially higher than in the other five.

This difference in teacher talk was probably attributable to leadership. Box 11 describes how a literacy leader in one of the schools with high student gains shifted the focus of teachers' discussion from student backgrounds to the impact of their own teaching.

Box 11. Moving the focus from outside to inside the classroom[283]

The literacy leadership in the five schools with lower achievement in reading differed in a number of ways from the literacy leadership in the two higher-achieving schools. One difference was focus on the teaching–learning relationship. In the lower-achieving schools, literacy leaders had difficulty getting teachers to focus on their own practice instead of the students' home backgrounds. One literacy leader expressed her frustration in this way:

Literacy leader: That discussion—about no lunches and all that sort of thing and I do remember trying to cut that off because I think we're past that. We've been through all that blame sort of thing.

Researcher: What stopped you from saying something like that?

Literacy leader: Probably because I sympathise with how they feel because it shows things that are a reality for some children and I want to kind of say 'yes' and acknowledge that we've got to move on from there … There is a group of teachers that are like that and it's almost like 'Well that's where they're at, at the moment.' I'm hoping that people will come to a natural conclusion of getting past that.

When, in year 3 of the project, she began to focus more on identifying and targeting failing students, she no longer allowed herself to be so influenced by the teachers.

Literacy leader: While I still try to sympathise with the problems the teachers are having, I know that if we want to raise achievement we have to get past all that. Since we changed focus, it never comes up about blaming kids and homes. The teachers are now focused on what they can do.

Changing the norms and content of meetings so that they give greater priority to the teaching–learning relationship can pose leaders a considerable challenge. When evaluating the national Literacy Professional Development Project (LPDP), the researchers asked the participating principals, literacy leaders, and teachers in six Auckland and Northland schools to indicate on a 1–6 scale how strongly they agreed with the statement: 'Meetings at this school really help me teach those students I find most difficult to teach.' They did this three times: prior to the start of the professional development and following years one and two. As can be seen from Table 9, prior to the professional development, there was a general belief that the meetings did not help teachers with their most difficult-to-teach students. By the end of year one, the meetings were viewed as much more useful. This perception continued through year two.

---

[282] Timperley (2005a), op. cit.
[283] Based on Timperley (2005b), op. cit.

Table 9. 'Meetings help me teach those I find most difficult to teach'[284]

	Prior to PD		End of year one		End of year two	
	Mean	Range	Mean	Range	Mean	Range
Principals	2.6	2–3	4.8	4.5–5	5	5
Literacy leaders	2.7	1–4	4.6	4–6	4.8	4–5
Teachers	2.6	1–5	4.0	1–6	4.4	2–6
1 = Disagree, 6 = Agree						

One is left to speculate why, though the ratings improved greatly, they fell short of a strong teacher consensus that the meetings were really helpful. A possibility is that they were still dominated by discussion of classroom issues and resource organisation, not the impact of teaching. The authors note:

> While it is important to address organisational issues, because good management is fundamental to a well-run school, only one of the analysed meetings exhibited the qualities of professional learning communities that are associated with improving student outcomes. These meetings focus on the teaching–learning–outcomes links (p. 235)[285].

A greater shift in teacher talk would require leaders with a stronger calling to be leaders of teacher learning rather than facilitators and organisers of collegial discussion. As the authors note, "Participation and valuing of all teachers' contributions was given greater weight in most meetings than focused analysis of the teaching–learning relationship" (p. 235)[286].

It is indicative of a focus on the teaching–learning relationship that leaders use student impact as the touchstone for evaluating what works. The principals of schools that made most progress in the Picking up the Pace intervention were more likely than the principals of other schools to use evidence of student achievement to justify participation—and to judge progress. The principals of schools that made less progress were more likely to use teacher reaction as the criterion[287]. The power of principal decision making is illustrated in Box 12, which describes what happened when a new principal arrived at a high-progress school.

Box 12. When a principal's decision making is not based on student outcomes

Of the seven schools evaluated, School A had sustained the highest levels of achievement across the three years of the literacy programme. However, at the end of the third year, a new principal questioned the effectiveness of the literacy leader. The principal explained her concern like this:

"An effective teacher doesn't slavishly follow one programme, like … [the literacy leader] is doing. She should go to lots of different courses, then develop a programme to meet the needs of the children she is teaching. It should be a combination of many programmes. I have tried to get her to think about other ways of teaching, but she won't listen. She keeps saying she wants to do just this programme."

The principal used her belief in a mix of approaches, rather than impact on students, as her criterion for programme effectiveness. School A was the only school of the seven in which reading scores declined significantly between years two and three of the project. While the literacy leader was acutely aware of the decline, the principal was not, which raises

---

[284] Parr, Timperley, Reddish, Jesson, & Adams (2006), op. cit., p. 229.

[285] ibid.

[286] ibid.

[287] Timperley, H. S., & Wiseman, J. (2003). *The sustainability of professional development in literacy: Part 2. School-based factors associated with high student achievement*. Wellington: Ministry of Education. Retrieved from www.minedu.govt.nz/index.cfm?layout=document&documentid=8638&data=l

questions about the quality of their conversations. The literacy leader placed the blame at the door of the new principal:

> "She keeps taking away our literacy [instructional] time. This term we've lost a third of our literacy time because she has organised other things [school events]. She doesn't respect it like … [the previous principal] did."

When the researcher followed up, the principal denied the accusation and there was no opportunity to verify what had led her to change the programme.

Leadership promotes collective responsibility and accountability for student achievement and well-being

A second quality associated with effective professional communities is that members collectively accept responsibility and accountability for student achievement and well-being. Timperley et al.[288] note the following about the relationship between professional community and teacher and student learning:

> Nearly every core study that described school-based professional communities reported greater collaboration among teachers and more collective responsibility for students. The focus on promoting student learning was, however, sometimes more implicit than explicit. Without such a focus, collaboration can become a sharing of 'war stories' instead of a means for improving the learning of students (p. 205).

If a professional community is to benefit students, not just teachers, it must foster teacher responsibility for student learning and experience. Some authors define collective responsibility as the extent to which a group of teachers takes responsibility for the success or failure of its own teaching[289]. The implication is that teachers have confidence in their ability to help all their students succeed—not just those who are more able and/or motivated. Statements from a scale that has been used to measure collective teacher responsibility are reproduced in Box 13.

Box 13. Statements from a scale designed to measure collective teacher responsibility

1. If a child doesn't learn something the first time, teachers will try another way.
2. Teachers in this school are skilled in various methods of teaching.
3. Teachers here are well prepared to teach the subjects they are assigned to teach.
4. Teachers in this school really believe every child can learn.
5. If a child doesn't want to learn, teachers here give up. (reverse scored)
6. Teachers here fail to reach some students because of poor teaching methods. (reverse scored)
7. Teachers here don't have the skills needed to produce meaningful student learning. (reverse scored)[290]

Other authors argue that collective responsibility is not just the sum of individual teachers' responsibility for their own students but also responsibility for all students in the school. Newmann says it is "a sense of responsibility, not only for one's own actions and students, but also for the actions of colleagues and other students in the school"[291]. While efficacy and responsibility are often thought of as characteristics of individual teachers, they can also be

---

[288] Timperley, Wilson, Barrar, & Fung (2007), op. cit.

[289] Lee, V. E., & Smith, J. B. (1996). Collective responsibility for learning and its effects on gains in achievement for early secondary school students. *American Journal of Education, 104*(2), pp. 103–147.

[290] These items are from a 21-item scale found in Goddard, R. D., Hoy, W. K., & Hoy, A. (2000). Collective teacher efficacy: Its meaning, measure, and impact on student achievement. *American Educational Research Journal, 37*(2), pp. 479–507. p. 504.

[291] Newmann, F. (1994). *School-wide professional community: Issues in restructuring schools* (Issue Report No. 6). Madison,WI: Center on Organization and Restructuring of Schools, University of Wisconsin, p. 2.

characteristics of the normative environment of the whole school, a department, or a group of staff. There is an interaction between individual and collective responsibility because the responsibility that individual teachers feel is either attenuated or enhanced by the collective beliefs of their colleagues. Newmann describes the interaction as follows: "The assurance that one's colleagues share responsibility for all students helps to sustain each teacher's commitment"[292].

Increased collective responsibility and accountability for students implies a reduction in teacher autonomy. In several studies, teachers largely accepted this loss because with it came increased social and practical support for overcoming problems that were important to them. The social support was derived from the awareness that others were experiencing similar difficulties or had done so in the past. Teachers who had formerly struggled on their own now had the help of colleagues who understood what they were up against and who cared about succeeding. With shared goals, a shared professional development curriculum, and a shared language, colleagues could offer relevant and timely assistance. When teachers learn together, they move easily between the roles of observer/observed, coach/coached, and teacher/learner, depending on the distribution of expertise relevant to the task in hand. Such transitions are made easier by a shared professional development curriculum and leaders' expectations that teachers will help one another achieve common goals. The following quote is from a teacher in the Picking up the Pace initiative. New to her school, she experienced the support within her team and expectations that she would reflect on her own practice as novel sources of professional learning:

> As a team, we look at ourselves far more I think here, because I mean I have experience of teaching in junior levels at the other schools. We did look at the children's data, but we never looked at ourselves. This time we had to look at the way we were doing things and we were supporting each other. If I have problems with a particular child in my reading group, I can ask a colleague to have a look at what I'm doing or take a running record and we can have a look together at the processes the child uses (p. 93)[293].

In schools where teacher autonomy and private classroom practice are the norm, the development of collective responsibility can pose a considerable challenge for leaders. Several studies refer to the role of leadership in deprivatising teacher practice so that it can more readily be discussed and observed. A lead teacher in the Numeracy Project described[294] how school leadership encouraged "teachers not to lock themselves in their own classrooms. Here we have an open door policy where with good teaching practice we get teachers … to go into those rooms and actually observe. That's where they are going to pick up their good teaching practice" (p. 55).

Similarly, in a South Auckland literacy project, the external programme developer and facilitator talked directly to teachers about the need for a team approach. They discussed the role of the team in developing a common language, clarifying issues, supporting and sharing, and minimising the difficulties that could undermine the school's efforts[295].

Leaders can strengthen the sense of collective responsibility by the ways in which they organise activities and expect their teachers to work together. In Box 14, the literacy leader embeds expectations of collective responsibility in her handling of this discussion of under-achieving students[296].

---

[292] ibid., p. 2.

[293] Timperley & Wiseman (2003), op. cit.

[294] Higgins, J. (2004). *An evaluation of the Advanced Numeracy Project*. Wellington: Ministry of Education.

[295] Phillips, G., McNaughton, S., & MacDonald, S. (2001). *Picking up the pace: Effective literacy interventions for accelerated progress over the transition into decile one schools* (Final report). Wellington: Ministry of Education. Retrieved from www.minedu.govt.nz/web/document/document_page.cfm?id=6444.

[296] Timperley & Wiseman (2003), op. cit., p. 87.

Box 14. Communicating an expectation of collective responsibility

A literacy leader in one of the more successful Picking up the Pace schools established norms of collective responsibility not by explicitly discussing teamwork but by communicating the expectation that it would happen. The following dialogue took place during a systematic discussion of every child who had been identified as reading books that were below the level of difficulty expected for their age.

Teacher:	I think those two are finding it hard with the level I had them on last time because they were on Level 9 so I put them down to Level 6 or lower than 6. Just up and down on those levels because I don't know what to do with them now. I'm having trouble with …
Literacy leader:	So you are asking for help?
Teacher:	Yes.
Literacy leader:	Do you want someone to observe you taking the book, or do you want to observe somebody [teaching], or do you want someone to look at the reading strategies in the whole process?
Teacher:	Maybe how I can help these two children with their book …
Literacy leader:	OK, so we need some help for you. Be thinking, team, about the kind of help that we may be able to offer.

The importance and power of collective responsibility

Leaders who are used to allowing teachers considerable autonomy and treating the classroom as a semi-private domain may question our emphasis on collective responsibility for student achievement and well-being. There are, however, good reasons for developing a sense of collective responsibility.

Firstly, reducing disparities in achievement requires teachers to teach differently. Figuring out what works better is a complex business, and teachers will often find they need to supplement their existing knowledge and expertise. Those who work together to solve teaching problems have more resources available to them than those who work alone.

Secondly, what a student learns in one class depends partly on what they have learned in others. Te Kotahitanga (see page 117) seeks to improve educational outcomes for Māori students in English-medium secondary schools by showing teachers how to develop relationships that recognise and affirm the identities of Māori students. Early evaluations suggest that Māori students are discriminating between teachers who have had Te Kotahitanga training and those who have not. It appears that they are becoming more critical of the latter, showing themselves to be "discerning consumers of education"[297]. Interviews reveal that students' encounters with Te Kotahitanga teachers are typically more positive than their encounters with other staff.

> Like in [another] class none of us get along with the teacher and none of us seem to be passing our tests. (School 7: group 1, 2005)
>
> There is no one that teaches like her that's why. (School 10: group 3, 2005)
>
> Yeah true, that's the one, 'cos it's dumb just passing in one class and failing in all the others. (School 4: group 2, 2005)[298]

Te Kotahitanga findings show that when students believe teachers are not giving the very best of themselves they tend to reciprocate by, for example, not regularly attending their classes and

---

[297] Bishop, R., Berryman, M., Cavanagh, T., Teddy, L., & Clapham, S. (2006). *Te Kotahitanga phase 3: Whanaungatanga: Establishing a culturally responsive pedagogy of relations in mainstream secondary school classrooms.* Wellington: Ministry of Education Research Division, Māori Education Research Institute, and Poutama Pounamu Research and Development Centre, p. 170.

[298] ibid., p. 171.

not making any real effort when they do. By accepting collective responsibility for students across all their classes, teachers can ensure that Māori students experience effective teaching in all learning areas, not just some.

Thirdly, collective responsibility provides an unobtrusive yet powerful form of professional accountability. Describing the qualities of effective professional communities, Kruse et al.[299] state that a strong collective focus on student learning is not enforced by rules, but by mutually felt obligations to standards of instruction and learning: "Instead of obeying bureaucratic rules, faculty members act according to professional behaviour and duty, which have been shown to be far stronger social control mechanisms" (p. 4).

How leaders foster collective responsibility

Increase teacher interaction by providing regular opportunities for discussion focused on the teaching–achievement relationship.

Inform discussion of the teaching–achievement relationship with relevant experience.

Use problem solving cycle of analysis, action, and evaluation to address teaching problems.

Ensure relevant expertise is available to increase probability of success.

Expect group members to be mutually accountable.

Increased collective teacher responsibility

Consequences for teachers and teaching

Teachers receive social support so less teacher stress and burnout.

More effective teaching of under-performing students

Increased internal accountability

Greater teacher effort and persistence

Better coordinated teaching

Schools that have higher collective teacher responsibility but are otherwise similar have **higher achievement levels** and **more equitable achievement levels**.

Figure 18. How does collective responsibility work?

Leaders need to know not only why collective responsibility is important but also how they can foster it. Goddard et al.[300] describe four sources of collective teacher efficacy and responsibility. Of these, the most important is mastery, which is achieved only after overcoming difficulties through persistence and effort. In other words, the more skilled teachers become at meeting teaching challenges, the more they accept personal responsibility for the success of their students. The authors conclude that school leaders can build mastery through well-designed professional development and action-research projects. Fortunately, we now know a great deal about the kind of teacher learning opportunities that increase teacher success with underachieving or alienated students. Some of these are listed in the left-hand column of Figure 18, which explains how leaders can foster collective responsibility for student achievement and well-being, and the positive benefits this brings for both teachers and students.

The most powerful way to increase collective responsibility for student learning is by increasing teachers' success with the students they find most difficult. The left-hand column in the figure

---

[299] Kruse, S., Louis, K. S., & Bryk, A. (1994). Building professional communities in schools. In *Issues in restructuring schools*. Issue report no. 6. Wisconsin-Madison: Center on Organization and Restructuring of Schools.

[300] Goddard, R. D., Hoy, W. K., & Hoy, A. (2000). Collective teacher efficacy: Its meaning, measure, and impact on student achievement. *American Educational Research Journal, 37*(2), pp. 479–507.

identifies five conditions that foster such success. The first and last of these have already been discussed. The remaining three reflect findings from the *Teacher Professional Learning and Development BES*[301]. The benefits of collective responsibility are summarised in the last two columns of the figure[302]. When teachers take collective responsibility for all students, teacher stress and burnout should be reduced because problems are shared and more help is available. When teachers work collectively to solve teaching problems, the differing points of view and greater expertise available should produce more effective solutions.

Two studies in particular have established the benefit for students of being in a school where the level of collective teacher responsibility is high. Both studies were conducted in the US: one in primary and one in secondary schools. The secondary school study hypothesised that where teachers took more responsibility for the results of their teaching, students would learn more—and that the effect would be apparent even after between-school differences in students and community had been accounted for. Over the two-year life of the study, the authors tested the relationship between level of collective teacher responsibility for student learning and student achievement in maths, reading, science, and history. The authors concluded, "Schools with a high level of collective responsibility for learning are those where students learn more in all subjects"[303]. Just as significant was the finding that such schools had a more even pattern of achievement across their students. In other words, high-responsibility secondary schools are "not only more effective but more equalising environments for students' learning where the learning of lower-socio-economic status students is similar to that of their higher-socio-economic status counterparts"[304].

The primary school study[305] came to very similar conclusions: once adjustments had been made for student and community characteristics, level of collective teacher responsibility explained from half to two-thirds of the variance in between-school achievement.
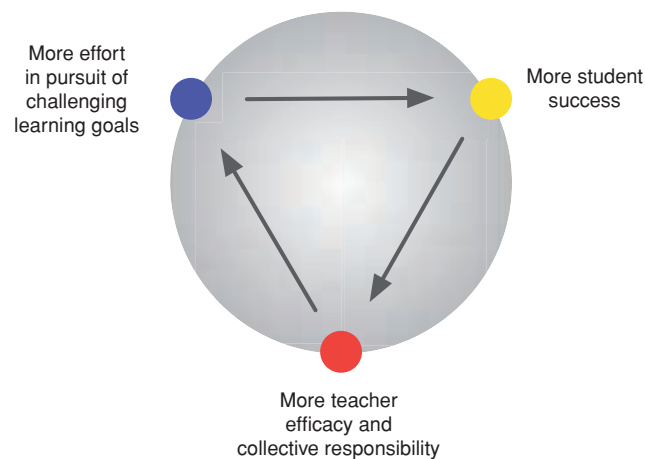
Figure 19. How collective responsibility creates a virtuous circle

By promoting effective teacher learning and establishing a culture of collective responsibility, leaders can turn a vicious cycle of teacher and student failure into a virtuous circle of mutually reinforcing success. Figure 19 shows how increased student success leads to greater teacher efficacy and collective responsibility, which inspires teachers to greater effort and persistence.

---

[301] Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). *Teacher professional learning and development: Best evidence synthesis iteration (BES)*. Wellington: Ministry of Education.

[302] The consequences for teachers are derived from theoretical discussions of collective teacher efficacy rather than from empirical evidence. The consequences for students, however, are derived from two empirical studies:
Lee, V. E., & Smith, J. B. (1996). Collective responsibility for learning and its effects on gains in achievement for early secondary school students. *American Journal of Education, 104*(2), pp. 103–147.
Goddard, Hoy, & Hoy (2000), op. cit.

[303] Lee & Smith (1996), op. cit., p. 127.

[304] ibid., p. 129.

[305] Goddard, Hoy, & Hoy (2000), op. cit.

Teachers are willing to accept new challenges, which helps students achieve new levels of success.

Dimension E: Engaging in constructive problem talk

In order to build communities that learn, leaders may need to challenge and change well-established aspects of teacher culture. The evidence from New Zealand initiatives shows that leaders who engage in constructive problem talk are better able to help teachers make changes that benefit their students than those who avoid problem talk or who blame and invite defensive reactions. We have called this dimension 'Engaging in constructive problem talk' because it is about the ability to name, describe, and analyse problems in ways that reveal possibilities for change. Leaders who engage in constructive problem talk describe problems in ways that invite ownership and commitment. They are also able to respectfully examine the contribution that they and others might be making to the problem situation.

Our use of 'engage' in this context is significant because it signals that leaders need the ability to inquire into the theories behind the practices they wish to change. These theories, known as theories of action[306], describe the links between what people do, the beliefs and values that explain their actions, and the intended and unintended consequences. Theories of action are powerful determinants of current practice—indeed, teachers are unlikely to make changes that conflict with their current theories unless coerced to do so[307]. Leaders who engage with their colleagues' theories show them respect when they take the trouble to learn why they act as they do before recommending something different.

> To engage in constructive problem talk, leaders must be able to:
> * engage teachers' theories of action.

Leadership engages teachers' theories of action

Theories of action are powerful because they explain teachers' actions and act as filters through which change messages are interpreted[308]. If teachers believe their current practices are effective for teaching reading, for example, this belief will shape how they evaluate messages about alternative approaches. The research evidence shows the importance of engaging teachers' theories when the learning agenda is complex and/or challenges teachers' existing practice[309]. Once their beliefs have been made explicit, teachers can evaluate their worth in relation to the proposed alternative theory of action.

It is important to recognise, however, that this does not mean that leaders must personally inquire into the beliefs of everyone that they wish to influence. If this were the case, the notion of theory engagement would gain little purchase in such contexts as large schools, large-scale change, and policy development and implementation. Theory engagement requires in-depth understanding of the factors that sustain current practice and the challenges involved in changing it. This understanding may be gained directly by involving appropriate staff or more indirectly from research that reveals the relevant theories of action[310].

---

[306] Argyris, C., & Schön, D. (1974). *Theory in practice: Increasing professional effectiveness*. San Francisco, CA: Jossey-Bass.

[307] Robinson, V. M. J. (1993). *Problem-based methodology: Research for the improvement of practice*. Oxford: Pergamon Press.

[308] For international examples of the power of teachers' theories of action, see:
Coburn, C. E. (2001). Collective sensemaking about reading: How teachers mediate reading policy in their professional communities. *Educational Evaluation and Policy Analysis, 23*, pp. 145–170.
Spillane, J. P., Reiser, B. J., & Reimer, T. (2002). Policy implementation and cognition: Reframing and refocusing implementation research. *Review of Educational Research, 72*, pp. 387–431.

[309] Timperley, Wilson, Barrar, & Fung (2007), op. cit.

[310] For a more detailed account of theoretical engagement, see:
Robinson, V. M. J., & Walker, J. C. (1999). Theoretical privilege and researchers' contribution to educational change. In J. S. Gaffney & B. J. Askew (Eds.), *Stirring the waters: The influence of Marie Clay* (pp. 239–259). Portsmouth, NH: Heinemann.

Our advocacy of theory engagement as an important element in any major change process is based on the evidence we found in the New Zealand research: there are positive consequences for both staff relationships and student outcomes. For more on the leadership skills involved, see Chapter 8.

The upper model in Figure 20 treats engagement as a dialogue between two different theories of action. The objective is to make both the leader's theories and the teachers' theories explicit so that the participants can examine their relative merits and agree whether change is desirable. The dialogue may go through a number of iterations before agreement is reached about the relative merits of the teachers' current practice and the leader's proposed alternative and whether change is warranted.

The lower model shows an alternative change strategy, one that bypasses teachers' current theories of action. In this model, leaders focus only on their proposed alternative, persuading others of its merits and providing opportunities for them to learn the new practice. As shown in the diagram, the outcomes of such a strategy are not necessarily negative. Where there is little incompatibility between theories, teachers will often adopt the change agenda, elaborating or adapting their existing theory as necessary. But if there is incompatibility and this is not made explicit and worked through, the result is likely to be either compliance or resistance.
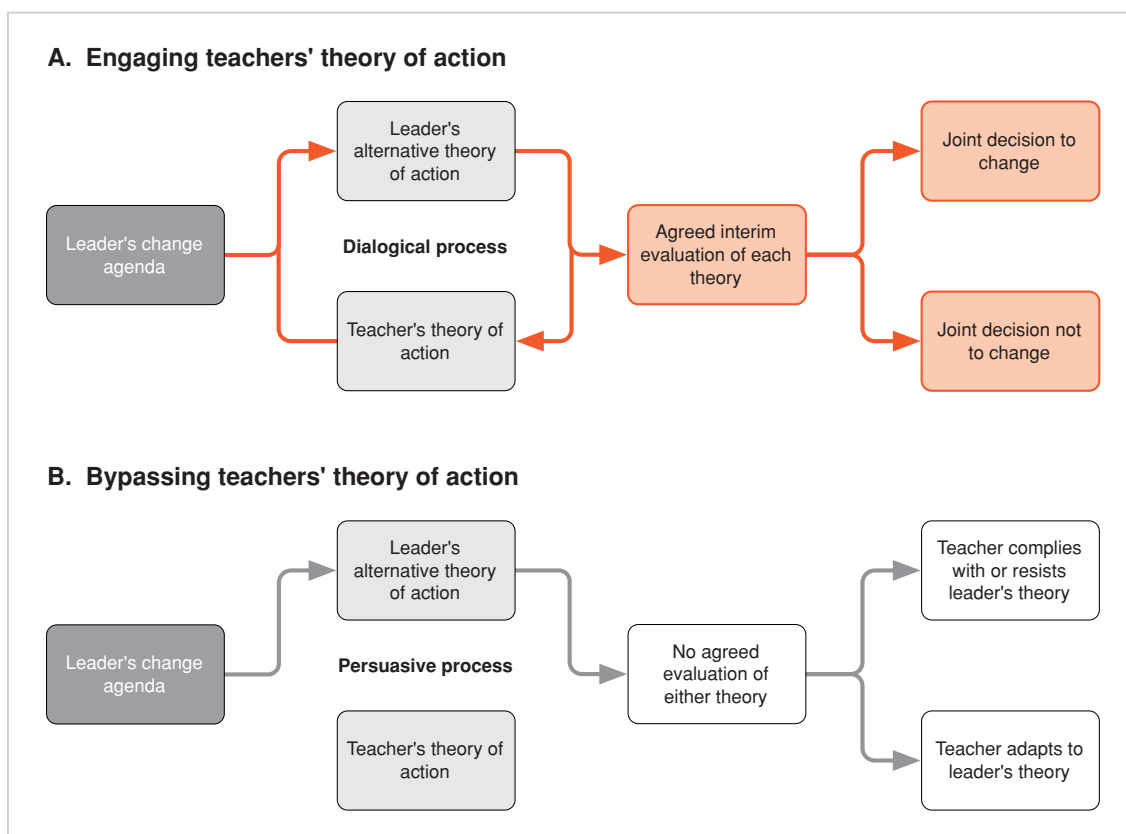
Figure 20. Two leadership responses to teachers' theories of action

In the remainder of this section, we provide examples of these alternative change strategies, drawn from the New Zealand evidence. The first (see Figure 21), which shows the power of engaging teachers' theories of action, is from a rural, decile 5 school involved in the national Literacy Professional Development Project (LPDP)[311]. The facilitator who worked with this school was explicit about her desire to teach the principal and literacy leaders the skills and knowledge they would need to continue the learning beyond the end of the project. The starting

---

[311] Parr, J., Timperley, H., Reddish, P., Jesson, R., & Adams, R. (2006). *Literacy Professional Development Project: Identifying effective teaching and professional development practices for enhanced student learning. Milestone 5* (Final report). Wellington: Learning Media, Chapter 8.

point was to introduce a process by which teachers could evaluate the way they taught writing; this ensured that everyone could discuss what, if anything, needed to change and why.
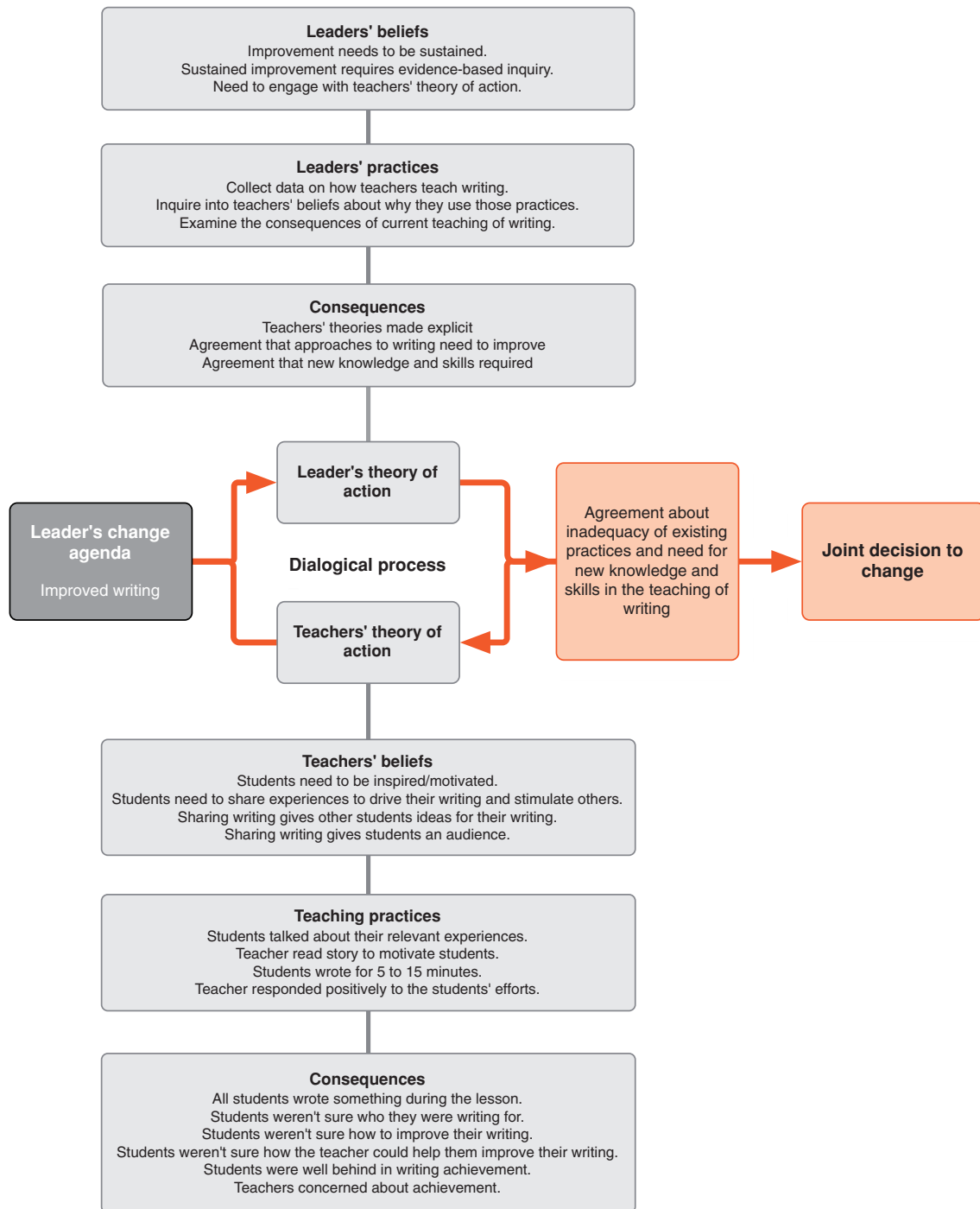
Figure 21. Teachers' theories of action for the teaching of writing

With the assistance of the university-based formative evaluators, the facilitator used a three-stage process for investigating the teachers' current theories on teaching writing. First, three teachers of years 2–6 were observed teaching a 45-minute lesson. (Prior to this, each had completed a form asking them to describe the aims of the lesson and how it fitted the current unit.) Second, a brief summary of the observations was posted in the staffroom.

In the attached box, the teachers were invited to describe the beliefs that had led them to teach the lesson in the way they had[312]. In essence, their descriptions showed that they believed the teaching of writing was primarily a motivational exercise. As a result, they spent considerably more time on motivating the students than on teaching them how to write or letting them write (Figure 21). Third, the consequences—intended and unintended—of the teachers' beliefs and practices were traced. An assessment of their writing showed that the students were well behind national norms. Several good writers and several poor writers from each class were interviewed. This revealed that they had limited understanding of lesson aims or success criteria, so they did not know how to regulate and improve their own performance.

The teachers had little difficulty agreeing that they needed to change their teaching practice because the analysis had exposed the unintended, negative consequences of their current theories. They could see how their beliefs and teaching practices were failing to achieve what they themselves wanted for their students. The alternative theory of action proposed by the facilitator was critical in helping the three teachers deliver more effective lessons. After they had learned more about writing and how to teach it, the teachers were able to formulate and communicate more precise learning intentions and success criteria, align their illustrations and explanations to the success criteria, and give their students feedback that was more focused. Just four months later, a repeat asTTle writing assessment showed that students at all levels had made significant gains. Moreover, both teachers and students reported much greater enjoyment from writing.

The next example illustrates the bypass strategy which, as we have explained, is less effective than engagement when an alternative theory of action is proposed that is incompatible with teachers' theories in some significant way. This example is drawn from the national Literacy Leadership (LL) initiative, which preceded the LPDP discussed in the first example[313]. The evaluation of the LL project revealed a considerable mismatch between the leaders' (policy makers') and teachers' theories of action[314]. Unlike the subsequent LPDP, the designers of the LL and the developers who took it into schools bypassed rather than engaged these theoretical differences.

The evaluators investigated these theoretical differences, interviewing all 19 national facilitators and a sample of staff from the most, somewhat, and least successful schools they had worked with: 28 principals, 28 literacy leaders, and 53 teachers. The evaluators asked them questions about their understanding of the purposes of the intervention, and about its implementation. Those interviewed were also presented with a scenario that tested their knowledge of the conditions that promote teacher learning about literacy. Official documents and resource materials developed for the LL initiative provided evidence of the policy makers' theory of action.

Table 10 compares these theories across three areas: the who and what of the change, the knowledge and skills required, and the desired outcomes and success criteria. Row 1 of the table shows that policy makers and practitioners had quite different understandings about who was the focus of the policy. Policy makers and facilitators were clear that the objective was to train principals and literacy leaders so they could work more effectively with their own staff, but none of the principals or literacy leaders saw themselves as the focus of the training. A similar mismatch is apparent in row 2: how change could be achieved. Policy makers and facilitators saw evidence-informed analysis of the impact of teaching as the catalyst, while practitioners believed the key was collaborative reflection on their teaching. Row 3 shows that there was also a significant difference in how the two groups understood the intended outcomes and the criteria by which success would be judged.

---

[312] For a much more detailed discussion of methodology and methods for inquiry into and revising theories of action, see Robinson, V. M. J., & Lai, M. K. (2006). *Practitioner research for educators: A guide to improving classrooms and schools*. Thousand Oaks, CA: Corwin Press.

[313] For an account of the Literacy Leadership initiative see Ministry of Education (2000). *Literacy leadership in New Zealand schools*. Wellington: Learning Media.

[314] Timperley, H. S., & Parr, J. M. (2005). Theory competition and the process of change. *Journal of Educational Change, 6*, pp. 227–251.

Table 10. Policy makers' and practitioners' theories about the purpose of the Literacy Leadership initiative

Aspect of theory	Theory of policy makers (Ministry of Education)	Theory of practitioners (Principals, literacy leaders, and teachers)
Who and what is the focus of the policy?	Principals and literacy leaders are the focus of the policy. Leaders need to become more data-based and learning-centred.	The focus of the policy is teachers and their students.
What is needed to achieve the change?	Principals and literacy leaders need to develop skills in collecting, analysing, and using student achievement information through participating in action-research projects.	No new leadership skills are required. Teachers need more opportunities to collaboratively reflect on their teaching.
What are the desired outcomes and success criteria?	Leaders are more outcomes-focused in their efforts to help staff improve teaching and learning. Improved student achievement in literacy.	Teachers become more focused on teaching and collaboration.[315]

The literacy leaders' change strategy was to bypass rather than engage these theoretical differences. By doing so, they contributed to the failure of the three-year project to achieve either of its two goals: there was no change in mean reading level or word recognition scores for year 1 students and there was little evidence that literacy leadership had become learning centred. This latter failure was due in part to the fact that the 19 national facilitators had not communicated the goal to the very people who were meant to be doing the learning—the principals and literacy leaders.

The problem with the theoretical differences summarised in Table 10 is not that they existed but that they were never explicitly identified and addressed during the three years of the project. The evaluators provide no direct evidence to explain why, but they suggest that the facilitators may not have been aware of the significance of the differences or known how to address them. Policy leadership was also lacking in that assumptions made about the capacity of schools to implement new policy were not properly tested.

Dimension F: Selecting, developing, and using smart tools

When people think of leadership, they typically visualise face-to-face interaction. Leadership, however, is not only an interpersonal activity. It is also exercised in impersonal ways as leaders shape the situations in which people learn how to do their jobs[316]. One of the most powerful means for doing this—observed in a number of the studies reviewed for this chapter—is to develop or introduce tools and associated routines that assist teacher learning.

Spillane defines tools as "externalised representations of ideas that people use in their practice"[317]. The use of the word 'ideas' captures the fact that tools incorporate useful knowledge that can help teachers improve their practice in relation to a specific task. The asTTle assessment tools, for example, incorporate a great deal of knowledge about developmental progressions. It is not necessary, therefore, for every New Zealand teacher to be a psychometric specialist: much of the knowledge they need to reliably and validly assess their students and determine

---

[315] The table is adapted from Timperley & Parr (2005), ibid., p. 239.

[316] Spillane, J. P., Reiser, B. J., & Reimer, T. (2002). Policy implementation and cognition: Reframing and refocusing implementation research. *Review of Educational Research, 72*, pp. 387–431.

[317] Spillane, J. P. (2006). *Distributed leadership.* San Francisco, CA: Jossey-Bass. p. 18.

next teaching steps is built into this formative assessment tool. It shapes their practice by helping them match their teaching to the learning needs of their students.

'Tool' is a concept that can cover everything from whiteboards to classroom furniture to software for tracking assessment data and attendance, to policy documents and report forms. In this section, however, we limit ourselves to tools for which we have some direct or indirect evidence showing how they can assist in improving teaching and learning.

The tools and associated routines that shape the work of teachers originate at different levels of the education system. School leaders may either develop their own tools or import them ready-made from other schools, researchers, suppliers, or policy makers. They may also inherit tools and associated routines from previous administrations[318]. Tools developed at one level of the system are often intended to shape those developed at another. In New Zealand's self-managing system, national policy often provides space for schools to develop their own policy within a broad national framework.

For leaders, it is not just a matter of selecting or developing tools but of ensuring that any tools they introduce—together with the associated routines—assist the users to achieve the intended purposes. We call tools that meet this criterion smart tools. For example, if the purpose of formal reporting is to give parents accurate information about their child's progress and to do so in a manner that strengthens the teacher–parent–child partnership, then reports should have certain qualities. The information they contain should be accurate and benchmarked so parents can interpret it. They should provide feedback on social and academic outcomes that parents care about. There is evidence that many of the portfolios and traditional-style reports that go home to parents lack some of these qualities[319]. The distinction between tools and smart tools is critical because, as we shall see, there have been instances where teachers have aligned their activities to tools that lacked the qualities needed to help them achieve the intended purposes.

It follows from our definition that the qualities that make a tool smart vary, depending on the task. For example, a good report form and a good school policy on reporting will have quite different qualities because they serve different purposes. They will nevertheless share two characteristics: both will incorporate valid theories of the tasks for which they were designed and both will be well designed.

> Smart tools:
> - incorporate sound theories;
> - are well-designed.

Leadership selects tools that incorporate sound theories

Tools are not just forms, policies, or software: each incorporates a theory about how the purpose in hand can best be accomplished. For example, the purpose of the Numeracy Project is to "improve student performance in mathematics through improving the professional capability of teachers"[320]. Two tools have been designed to further this purpose. The first is the Number Framework, which sets out the progressions students go through as they gain understanding of number; the second is the Numeracy Project Assessment Tool (NuMPA), which teachers use

---

[318] For an introduction to tools and their role in distributed leadership, see Spillane, J. (2006). *Distributed leadership*. San Francisco, CA: Jossey-Bass.

[319] Evidence about how New Zealand primary schools report to parents is found in:
Robinson, V. M. J., & Timperley, H. S. (2000). The link between accountability and improvement: The case of reporting to parents. *Peabody Journal of Education, 75*(4), pp. 66–89 and in:
Timperley, H. S., & Robinson, V. M. J. (2004). O le Tala ia Lita—Lita's Story: The challenge of reporting achievement to parents. *New Zealand Journal of Educational Studies, 39*, pp. 91–112. Some more recent evidence on portfolio reporting is found in:
Thomas, P. J. (2003). *Reporting student achievement through portfolios: Teacher practice and parental reaction.* University of Auckland.

[320] Ministry of Education (2004). *Book 1: The Number Framework*. Wellington: Author. p. 1.

to assess where students are on the Framework. Both tools incorporate a theory of the nature of mathematics, the development of mathematical understanding, and mathematical pedagogy. A tool is only as good as the theory it incorporates. For this reason, leaders need to check the validity of the theories incorporated in tools that shape how teachers teach.

A tool that is smart for the teaching of one group of students may not turn out to be smart when used with another group. For example, a theory of language progression that is valid for teaching reading in English-medium classrooms may not be valid for Māori-medium classrooms. Smart tools for Māori-medium classes will recognise that teaching and learning is taking place in the context of language regeneration: students (and teachers too) bring with them very different levels of skill in te reo Māori and very different learning experiences. To assist teachers, Rau et al.[321] have developed He Ara Angitu, a tool for assessing the reading achievement of Māori-medium students in their first 18 months at school. This tool accounts for differences in language development, making it easier to develop clear profiles and realistic expectations.

Tools such as asTTle and He Ara Angitu need considerable investment in research and development before they are deemed fit for the purpose. The theoretical and practical knowledge built into them has been subject to extensive scrutiny by both practitioners and researchers[322]. Tools that are purpose-built by schools don't need high levels of research and development, but leaders still need to ask if they incorporate valid theories. For example, when developing a new checklist for classroom observations, it is important to consider how effectively it captures teaching practices that evidence-based research has shown to impact positively on student outcomes. If the theory incorporated in a tool has low validity, then it will not help teachers achieve the intended purpose, regardless of how conscientiously they use it.

Generally speaking, the tools used in successful teacher-learning projects are valid because they reflect the evidence about how teachers learn to improve student achievement. These tools have two features that stand out: they define levels of good practice and they structure how data relating to teacher skill, knowledge, and performance are collected and evaluated. For example, as part of the Assess to Learn (AToL) project, Absolum[323] developed a four-by-six matrix that defines excellence in formative assessment in terms of six competencies, each with four levels of expertise (standards). By defining and incorporating standards, tools translate abstract purposes/goals into concrete explanations/illustrations of what is required.

Table 11. A smart tool for formative assessment

Competency 5: Active reflection[324]	
Stage 1	**Stage 4**
Teacher reflection occurs independently of students, can be divorced from good assessment information about outcomes or process, and often centres on surface features of the lesson or enjoyment. Teacher regularly asks students to share work at the end of a lesson and discussion often centres on surface features.	Both teachers and students routinely reflect, and talk reflectively, about what is intended to be learnt, where they have got to, and where they will go next. They also routinely reflect about the learning process. This may often be seen as a formal plenary session, or a learning diary or peer reflection, or student conference.

---

[321] Rau, C., Whiu, I., Thomson, H., Glynn, T., and Milroy, W. (2001). *He Ara Angitu: A description of success in reading for five-year-old Māori-medium students*. Wellington: Ministry of Education.

[322] Higgins, J. (with Parsons, R., & Hyland, M). (2002). The numeracy development project: Policy to practice. In I. Livingstone (Ed.), *New Zealand Annual Review of Education, 12*.

[323] Absolum (2004b). *ATOL programme 2004* (Report prepared for company purposes only). Auckland: Evaluation Associates.

[324] Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). *Teacher professional learning and development: Best evidence synthesis iteration*. Wellington: Ministry of Education. From Case 4: Using assessment to build teaching capability.

Table 11 shows the least- and most-advanced standards used to assess Absolum's fifth competency, active reflection. Teachers can use Absolum's matrix tool to see exactly what is meant by formative assessment—and what is involved in becoming more expert.

The Numeracy Project's Number Framework also describes a developmental progression, but this tool was designed in the first place to promote teacher learning. Teachers greatly value it because it brings structure to their understanding of how students develop number sense and learn to reason mathematically:

> Facilitator: When we present them with the Framework it is without doubt the most powerful [time]. They get this enormous sense of knowing that they are going to know where the students are, they are going to know where they have been and where to take them next … they have never had that—knowing where from and where to (p. 49)[325].

When evaluative tools do not come with well-defined standards, users are likely to struggle to make intelligent use of the information they offer. A study of parent responses to student portfolios found that, in the absence of benchmarks, some parents could not tell how well their child was doing at school. For these parents, the portfolio was not a smart tool because it lacked the very information they needed to effectively use it[326].

A tool developed for the Te Kotahitanga programme, PSIRPEG, incorporates standards designed to help teachers implement the pedagogy they have learned in professional development. Teachers focus on *planning* that uses *strategies* for more effective teaching and learning *interactions*, which in turn develop into caring and learning relationships, reinforcing teachers' *positioning* or capability to bring about positive changes in Māori students' educational *experiences*, thus promoting the *goal* of raising their achievement[327].

The power of tools that enable staff to evaluate their own and their students' performance against explicit standards is well illustrated by the wedge graph used in connection with year 1 literacy. This tool was developed by an independent professional developer as part of her work with an early literacy initiative (AUSAD) in Mangere and Otara schools[328]. See Figure 22 for a sample graph.

The graph plots the reading levels of the children in three year 1 classes against the number of weeks they have been at school. The angled lines that form the wedge represent the upper and lower boundaries of expected achievement, given the number of weeks the children have been enrolled at school. It is immediately clear from the graph which students are reading above, at, or below the expected level. The graph is a smart tool because it has features that can promote discussion of the teaching–achievement relationship—one of the characteristics of professional communities that are focused on enhancing student success. Those features include: recording the achievement of each child (not just class mean), providing benchmarks that enable ready interpretation of achievement, and identifying each child's teacher. As discussed in Box 15, Timperley et al.[329] found that the graph, routinely used by the junior school teachers in their regular meetings, gave focus and urgency to the goal of raising their students' reading achievement.

[325] Higgins, J. (2004). An evaluation of the Advanced Numeracy Project 2003. Wellington: Ministry of Education.
[326] Thomas, P. (2003), op. cit.
[327] Bishop, R., Berryman, M., Cavanagh, T., Teddy, L., & Clapham, S. (2006). *Te Kotahitanga phase 3: Whānaungatanga: Establishing a culturally responsive pedagogy of relations in mainstream secondary school classrooms.* Wellington: Ministry of Education Research Division and Poutama Pounamu Research and Development Centre. p. 49.
[328] Timperley, H., Smith, L., Parr, J., Portway, J., Mirams, S., Clark, S., et al. (2004). *Analysis and use of student achievement data (AUSAD)* (Final evaluation report prepared for the Ministry of Education). Wellington: Ministry of Education.
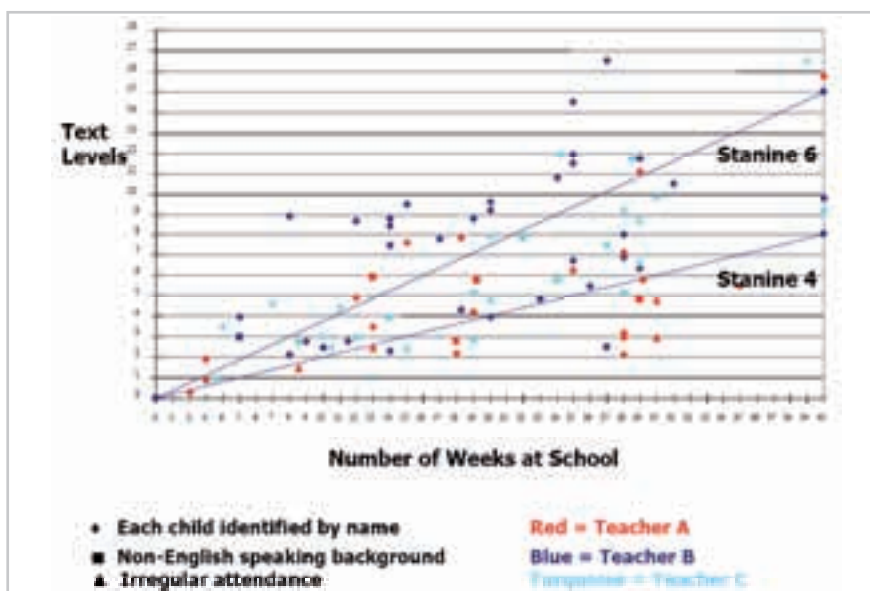[329] ibid.

Figure 22. Year 1 reading graph

Box 15. The wedge graph: a smart tool

When interviewed about the wedge graph, teachers told researchers about four ways in which it helped them improve their teaching.

1. One interviewer challenged a teacher to explain how marks on a graph could help her teaching:

Interviewer: They're only marks on a chart. Those little crosses—they don't tell you how to teach.

Teacher: The teacher knows the children, so you're basically linking the graph and what you know about your children. Do you know what I mean? It will be different for you because you're looking at it from a different angle: you're looking at it as crosses. But for me as a teacher and my class, I'm linking the crosses to children. Although L's at red, I know he's going to be moving faster than the other two in the group …

2. The graph helped teachers preserve information about individuals while putting it in the context of other children and age-related benchmarks:

Teacher: We had always graphed the children individually, but this [the wedge graph] was a matter of actually seeing it in front of you and then tallying it up together as a syndicate and then tying it all in together. I think that was a really good push because we could see where the children were actually achieving every five weeks. If we found they were underachieving then we could all get together and discuss what's happening and how we can improve. Whereas if we hadn't plotted them on the wedge graph we would have no way of knowing in relation to all the others in the syndicate how they were doing …

3. The graph was a powerful aid to memory, storing a lot of complex information in a single, simple visual representation:

Teacher: One of the surprises when we first started looking at the graph was how long some of the children had been at school. I think in your room, you don't focus on that really. They're just your class and you sort of forget, 'Well, hey, this one has been here quite a long time.'

4. The tool had valuable routines associated with its use. The junior school leadership used the graph at regular, structured meetings where teachers learned to take collective

responsibility for improving student achievement. The very regularity of these discussions helped keep teachers' efforts sharply focused:

Teacher: Well I keep saying the word focus … If you don't have that focus, well then another five weeks goes by and things can crop up, like you can do some folk dancing and a marvellous unit on this, and we did this and this. Now we know that every five weeks we are doing the wedge graph, and you don't let reading go. You let other things go, but you don't let that go … I would like to think accountability was intrinsic, but it used to be getting through the day, keeping the room tidy, having a quiet class. At the end of the day, we would go out of the classroom not necessarily thinking 'What have I done today that has helped them to learn to read?' You would go home with a warm fuzzy feeling. 'Oh that was a good day. Maybe I will do some more of that tomorrow.' I think the focus has come right back to 'What have I done today and who is moving and who isn't moving and why aren't they moving?' That is what you are taking home in your head.

In summary, the wedge graph was a smart tool because it incorporated a sound theory about the conditions conducive to teacher learning. By identifying who was teaching who, it enabled teachers to focus on the teaching–learning relationship and to locate expertise. By incorporating standards for student achievement, it enabled teachers to evaluate progress. It was not, however, the tool itself that created teacher learning and student improvement; it was how the tool was integrated into routine professional learning with a focus on improving specific student outcomes.

The above are examples of tools that incorporate theories that are consistent with the best evidence about how to achieve the intended purpose. By way of contrast, we now describe a tool that incorporates a questionable theory: the national policy on teacher appraisal. This tool has powerfully shaped the appraisal policies and practices of our schools[330].

Table 12. The theory implicit in national and teacher appraisal policies and processes

	National appraisal policy	School-based appraisal policies[331]
Appraisal goals	The stated goal is to improve the quality of teaching and therefore learning[332].	70% of the purpose statements in school appraisal policies referred to the improvement of teaching. 15% referred to student learning.
Strategies for achieving appraisal goals	Evaluate teachers against performance expectations including national professional standards and role responsibilities. Professional standards include 24 performance indicators. Indicators describe preferred aspects of teaching style. None of the performance indicators requires inquiry into the teaching–achievement relationship[333].	Schools included an average of 46 performance indicators in their policies. Only 3% of indicators promoted inquiry into student learning. 1 in 11 teachers reported discussing student learning in their appraisals. 4.5% of teachers' appraisal goals were about student learning. The great majority of topics discussed during appraisal were about aspects of teaching that were not connected to student learning and achievement.

[330] The material summarised here is developed more fully in Case 1: Leading teacher appraisal.

[331] The material in the right-hand column of Table 12 is based on Sinnema, C. & Robinson, V. M. J. (2007). The leadership of teaching and learning: Implications for teacher evaluation. *Leadership and Policy in Schools, 6*(4), pp. 1–25.

[332] Ministry of Education (1997). Performance management systems: PMS1: Performance appraisal. *The Education Gazette* (10 February supplement).

[333] Ministry of Education (1998). *Teacher performance management: Primary school teachers, primary school deputy/assistant principals: A resource for boards of trustees, principals, and teachers*. Wellington: Author.

Consequences of appraisal policy	Policy encourages schools to monitor what teachers are doing rather than what students are experiencing and learning. The theory of appraisal incorporated in the policy assumes that if teachers perform in certain ways, then students will inevitably benefit.	Schools' appraisal policies and procedures are aligned with the theory in the national policy. School leaders do not use appraisal as an opportunity to inquire into and strengthen the impact of teaching on student learning.

Table 12 shows how closely a sample of 17 Auckland primary schools followed the national policy guidelines when crafting their own policies and procedures. Although closely aligned, neither national nor school policies are likely to achieve their intended goal because they incorporate a faulty theory of effective teaching—one that is based on conformity to a particular teaching style, not on evidence-based and situated inquiry into the impact of teaching on student learning.

Leadership selects tools that are well designed

We turn now from the theories (implicit or explicit) that are incorporated in tools to the design of tools. Smart tools are designed in ways that make them easy to understand and use. The wedge graph discussed earlier has design features that teachers value. For example, they can see at a glance how long each year 1 child has been at school; this information is of critical importance when organising reading programmes.

Another New Zealand study[334] focuses on the national social studies curriculum and provides even richer insights into how tool design helps or hinders teacher learning and practice. In discussions of curriculum implementation, it is routine to ascribe faulty implementation to resourcing issues or the capacity of those responsible[335]. This study suggests that there may be another explanation: the design of the curriculum. By curriculum design, the author means the "way in which [curriculum elements, including purposes, intended learning outcomes, and recommended teaching and assessment approaches] are arranged and expressed in formal written policy statements of learning intentions mandated by central government" (p. 13)[336]. The study uses design criteria derived from sense-making and cognitive load theory to argue that the 1997 national social studies curriculum document has many features that make it difficult to understand and use.

Research on sense making shows that how teachers interpret policy documents is strongly influenced by their prior understandings and by the norms and understandings that prevail in their current work environment[337]. New policies need to connect with (rather than bypass) existing understandings and theories, making explicit the ways in which the new policy is similar to and different from the old. This is why it is important, when formulating policy, not only to gain stakeholder agreement with the proposed policy but also to inquire repeatedly and thoroughly whether it is understood. The proposed policy can then be revised in ways that increase the chances both of acceptance and faithful implementation.

---

[334] Aitken, G. (2005). *Curriculum design in New Zealand social studies: Learning from the past.* Unpublished doctoral thesis, University of Auckland. p. 13.

[335] Coburn, C. E. (2001). Collective sensemaking about reading: How teachers mediate reading policy in their professional communities. *Educational Evaluation and Policy Analysis, 23*, pp. 145–170.
McLaughlin, M. W., & Mitra, D. (2001). Theory-based change and change-based theory: Going deeper, going broader. *Journal of Educational Change, 2*(4), pp. 301–323.

[336] ibid.

[337] For the key ideas on sense making in relation to policy, see:
Spillane, J. P., Reiser, B. J., & Reimer, T. (2002). Policy implementation and cognition: Reframing and refocusing implementation research. *Review of Educational Research, 72*, pp. 387–431.
Spillane, J. P. (2004). *Standards deviation: How schools misunderstand education policy.* Cambridge, MA: Harvard University Press.

Cognitive load theory[338], the second theoretical underpinning of a smart tool, describes how the limits of working memory are challenged by the amount and complexity of information present in any given task. It also offers research-based suggestions for reducing cognitive load by the ways tasks are presented. This chapter is not the place to elaborate these two theories, but Table 13 gives one example of what they offer in the way of criteria for smart tool design and how these criteria can be used to evaluate the design of a policy.

Table 13. Some criteria for the design of smart tools, and their application to the 1997 social studies curriculum

Design criteria	Rationale for criteria	Application to 1997 social studies curriculum[339]
Clearly explains the rationale for change.	Draws attention to the underlying purposes to counteract the tendency to attend only to surface features of policy.	The national curriculum includes 44 separate statements with no integrative discussion, leaving it up to implementing agents to work out the central purpose.
Acknowledges the existing understandings of implementing agents and integrates them into the new document.	Helps teachers make links to prior understandings and reduces perceptions that the change may be disruptive and overly demanding.	There is no acknowledgment in the document itself of the substantial shift from progression by topic to progression by specified learning outcomes and of what this might mean for teachers. (This shift is, however, acknowledged in subsequent handbooks.)
Incorporates misconception alerts.	Counters possible over-assimilation by indicating how the new policy differs from prior or taken-for-granted understandings; indicates what the policy both is and is not.	The difference between the previous focus on people and the new focus on society was neither made explicit nor explained.
Abstract principles are clearly connected to spatially contiguous detail and examples.	Embeds principles in details that teachers are most likely to attend to.	Examples illustrating how the achievement objectives might be met were removed from document in its draft stage due to political pressures.
The document is logically structured around a clear and unambiguous purpose.	Settling on a clear purpose makes the development process more difficult but is essential for coherence and reducing the cognitive load involved in trying to implement disparate and potentially contradictory elements.	Internal contradictions in design; for example, the attempt to develop progressions within the three learning processes rather than through integration with progressively more difficult content.

---

[338] Key references on cognitive load theory are:
Mayer, R. & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational Psychologist, 38*(1), pp. 43–52.
Paas, F., Renkl, A., & Sweller, J. (2003). Cognitive load theory and instructional design: Recent developments. *Educational Psychologist, 38*(1), pp. 1–4.

[339] These are illustrative examples only. For a more complete evaluation of the 1997 curriculum see Aitken (2005), op. cit, chapters 4–6. The social studies curriculum has now been revised and forms part of *The New Zealand Curriculum* (2007). Ministry of Education: Wellington.

| Maximises internal coherence and minimises complexity. | Working memory poses severe limits on teachers' ability to understand and integrate multiple, interacting elements of a policy. Complexity is reduced by fewer elements and by giving examples of how competing elements might be integrated. | A complexity analysis shows that, to faithfully implement the curriculum, teachers teaching the concept 'national identity' need to consider[340]:

3 learning processes (including 12 component processes);

2 levels of achievement;

6 perspective statements;

7 essential learning statements;

4 disciplines;

11 concepts;

3 indicators of achievement. |
| The document supports understanding through the use of charts and diagrams that are aligned with, and make explicit connections to, the text. | Clarifies meaning through alternative (visual as well as verbal) forms of representation. | Three diagrams are used to represent the relationships between the various curriculum elements. These diagrams are misaligned in that they include different content, present it in different orders, and suggest different relationships[341]. |

Given the power of tools to shape the practice of the nation's teachers, critical questions arise about the processes by which they are developed and validated at national and school level. These questions, which require research, include:

1. What research-and-development expertise and investment is required to develop an effective tool of a particular type?
2. How can that expertise be made available to developers of tools?
3. Given the answers to 1 and 2 above, whose responsibility is it to lead the development of tools?

6.3 Summary

In this chapter, we examined two groups of research studies set in New Zealand schools for evidence of how leadership can contribute to improved student outcomes. Using a backward mapping strategy, we identified six leadership dimensions. Four of these share similarities with the dimensions already identified using our forward mapping strategy (see Chapter 5). These four focus on the roles leaders play in goal setting, resourcing, teacher learning, and problem talk. Goal setting was a function that had particular significance for Māori-medium schools, where it was important that goals were linked to the wider purposes of language and cultural regeneration.

As can be seen from Figure 23, two additional dimensions emerged from this body of research. The first was the role that leaders play in creating educationally powerful connections. Such connections facilitate continuities for students: between their identities and school practices, across different parts of the teaching programme, and between educational settings. While effective relationships are fundamental to all the dimensions discussed in this chapter, they are particularly vital when it comes to developing educationally powerfully connections.

The other additional dimension relates to the selection, development, and use of smart tools. Smart tools promote teacher learning about how to promote student learning. They incorporate

---

[340] Aitken (2005), op. cit., fig. 14, p. 151.
[341] ibid., pp. 131–133.

valid theories concerning the activity they are intended to support and are designed in ways that make them easy to understand and use.
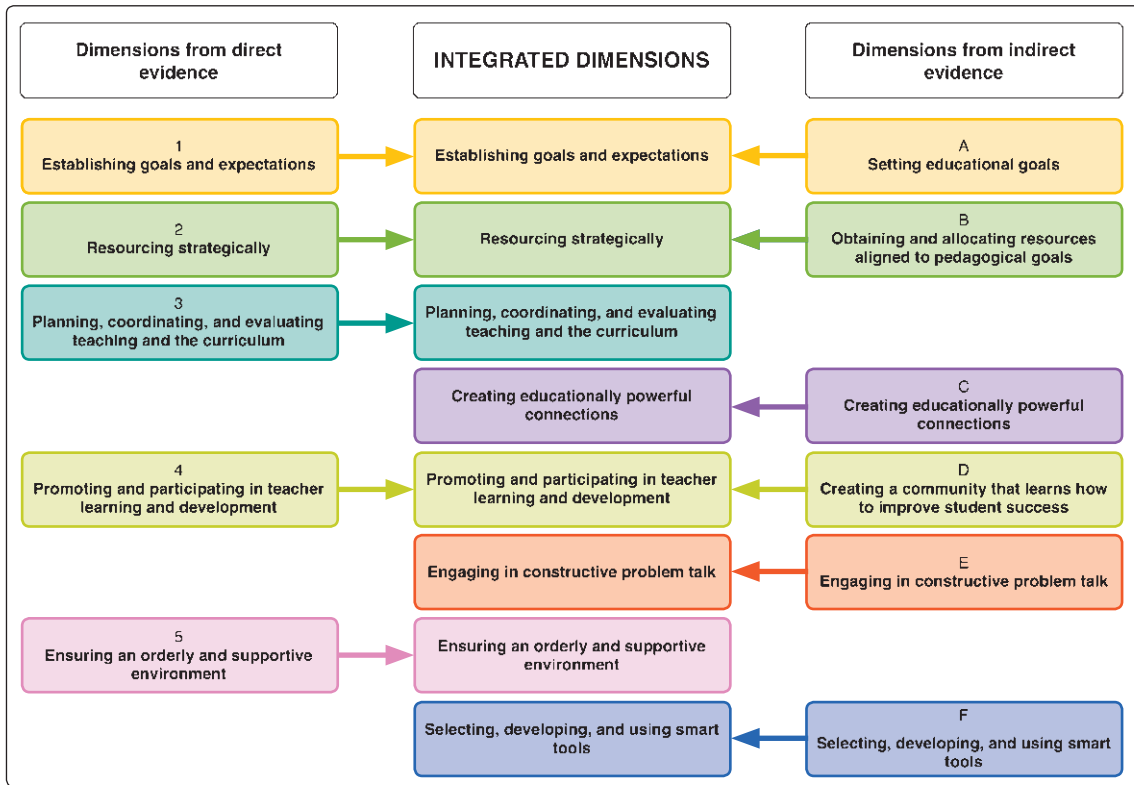
Figure 23. An integration of the dimensions from direct and indirect evidence

The dimensions discussed in this chapter should not be viewed as a checklist but as aspects of the leadership landscape. All should be kept constantly in view but, at any given time, the focus is likely to be on particular ones as specific problems or conditions are encountered and must be dealt with.

References

Note: All Best Evidence Synthesis Programme publications can be accessed at www.educationcounts.govt.nz/goto/BES

Abdi, A. (2003). *Enhancing educational access for the Somali community through positive school management and parental involvement.* Unpublished master's dissertation, Hamilton, University of Waikato.

Absolum, M. (2004a). *Assess to Learn Project* (Project proposal submitted to the Ministry of Education). Auckland: Evaluation Associates.

Absolum, M. (2004b). *ATOL programme 2004* (Report prepared for company purposes only). Auckland: Evaluation Associates Ltd.

Absolum, M. (2006). *Clarity in the classroom.* Auckland: Hodder Education.

Aitken, G. (2005). *Curriculum design in New Zealand social studies: Learning from the past.* Unpublished doctoral thesis, University of Auckland.

Aitken, G., & Sinnema, C. (2008). *Effective pedagogy in social sciences/tikanga ā iwi: Best evidence synthesis iteration.* Wellington: Ministry of Education.

Alig-Mielcarek, J. M., & Hoy, W. K. (2005). Instructional leadership: Its nature, meaning, and influence. In C. G. Miskel & W. K. Hoy (Eds.), *Educational leadership and reform* (pp. 29–52). Greenwich, CT: Information Publishing Age.

Alton-Lee, A. (2001). *Making a difference? A role/requiem for classroom research.* Unterrichts Wissenschaft, 3, pp. 197–212.

Alton-Lee, A. (2003). *Quality teaching for diverse students in schooling: Best evidence synthesis iteration.* Wellington: Ministry of Education.

Alton-Lee, A. (2004). *Guidelines for generating a best evidence synthesis iteration 2004.* Wellington: Ministry of Education.

Alton-Lee, A. (2004, June). *Impact of teaching and schools on variance in outcomes.* Retrieved October 6th, 2006, from www.minedu.govt.nz/web/downloadable/dl8910_v1/impact-of-teachers-and-schools-on-variancein-outc.doc

Alton-Lee, A. (2007). The Iterative Best Evidence Synthesis Programme: Collaborative knowledge building and use across research, policy and practice in education. In *CERI Evidence in education: Linking research and policy.* Paris: OECD. http://213.253.134.43/oecd/pdfs/browseit/9607081E.PDF

Alton-Lee, A. G., McBride, T., Greenslade, M., & Nuthall, G. A. (1997). *Gendered discourses in social studies: Intermediate students' learning and participation during studies of Antarctic work and survival focused on women: Understanding Learning and Teaching Project 3.* Wellington: Ministry of Education.

Alton-Lee, A. G., & Nuthall, G. A. (1990). Pupil experiences and pupil learning in the elementary classroom: An illustration of a generative methodology. *Teaching and Teacher Education: An International Journal of Research and Studies, 6*, pp. 27–46.

Alton-Lee, A., & Nuthall, G. (1998). *Inclusive instructional design: Theoretical principles emerging from the Understanding Learning and Teaching Project* (Report to the Ministry of Education). Wellington: Ministry of Education.

Alton-Lee, A. G., Nuthall, G.A., & Patrick, J. (1999). Reframing classroom research: A lesson from the private world of children. In Ethan Mintz & John T. Yun (Eds.), *The complex world of teaching: Perspectives from theory and practice.* Cambridge, MA: Harvard Educational Review.

Alton-Lee, A., & Praat, A. (2001). *Questioning gender: Snapshots from 'Explaining and addressing gender differences in the New Zealand compulsory school sector'.* Wellington: Ministry of Education

Andrews, R., & Soder, R. (1987). Principal leadership and student achievement. *Educational Leadership, 44*(6), pp. 9–11.

Annan, B. (2006). *A theory of schooling improvement: Connectivity and consistency to improve instructional practice.* Unpublished doctoral thesis, University of Auckland.

Annan, B., Lai, M. K., & Robinson, V. (2003). Teacher talk to improve teaching practices. *SET: Research Information for Teachers, 1*, pp. 31–35.

Anthony, G., & Walshaw, M. (2007). *Effective pedagogy in mathematics/pāngarau: Best evidence synthesis iteration.* Wellington: Ministry of Education.

Argyris, C. (1983). *Reasoning, learning, and action: Individual and organizational.* San Francisco, CA: Jossey-Bass.

Argyris, C. (1990). *Overcoming organizational defenses: Facilitating organizational learning.* Boston: Allyn and Bacon.

Argyris, C. (1991). Teaching smart people how to learn. *Harvard Business Review, 69*(3), pp. 99–109.

Argyris, C. (1993). Education for leading learning. *Organizational Dynamics, 21*(3), pp. 5–17.

Argyris, C., & Schön, D. (1974). *Theory in practice: Increasing professional effectiveness.* San Francisco, CA: Jossey-Bass.

Bamburg, J. D., & Andrews, R. L. (1991). School goals, principals and achievement. *School Effectiveness and School Improvement, 2*(3), pp. 175–191.

Barnett, K., McCormick, J., & Conners, R. (2001). Transformational leadership in schools: Panacea, placebo or problem? *Journal of Educational Administration, 39*(1), pp. 24–46.

Bass, B. M. (1985). *Leadership and performance beyond expectations.* New York, NY: Free Press.

Bell, L., Bolam, R., & Cubillo, L. (2003). *A systematic review of the impact of school headteachers and principals on student outcomes.* London: EPPI-Centre, Social Science Research Unit, Institute of Education.

Benseman, J., & Sutton, A. (2005). *Summative evaluation of the Manukau Family Literacy Project (2004).* Wellington: City of Manukau Education Trust (COMET).

Benton, R. (1986). Now fades the glimmering: Research in classrooms in New Zealand. *Set: Research Information for Teachers, 2*(12).

Berryman, M. A. (2001). *Toitū te whānau, toitū te iwi: A community approach to English transition.* Unpublished master's thesis, University of Waikato, Hamilton.

Berryman, M. (2007). *Repositioning within discourses of self-determination.* Unpublished doctoral dissertation, University of Waikato, Hamilton. http://adt.waikato.ac.nz/public/adt-uow20080429.133202/

Berryman, M., & Glynn, T. (2003). *Transition from Māori to English: A community approach.* Wellington: New Zealand Council for Educational Research.

Biddulph, F., Biddulph, J., & Biddulph, C. (2003). *The complexity of community and family influences on children's achievement in New Zealand: Best evidence synthesis iteration.* Wellington: Ministry of Education.

Biddulph, J. (2004). *Reading Together: A workshop leader's handbook.* Hamilton: The Biddulph Group. www.readingtogether.net.nz

Biddulph, L. J. (1983). *A group programme to train parents of children with reading difficulties to tutor their children at home.* Unpublished master's research report, University of Canterbury, Christchurch.

Biddulph, J., & Allott, J. (2006). Reading Together: A programme which enables parents to help their children with reading at home — Overview. *Reading Forum NZ, 21*(3), pp. 20–27.

Biddulph, L. J., & Tuck, B. (1983). *Assisting parents to help their children with reading at home.* Paper presented to the annual NZARE conference, Wellington.

Bishop, R., & Berryman, M. (2006). *Culture speaks: Cultural relationships and classroom learning.* Wellington: Huia Publishers.

Bishop, R., Berryman, M., Cavanagh, T., Teddy, L., & Clapham, S. (2006). *Te Kotahitanga phase 3: Whanaungatanga: Establishing a culturally responsive pedagogy of relations in mainstream secondary school classrooms.* Wellington: Ministry of Education Research Division, Māori Education Research Institute, and Poutama Pounamu Research and Development Centre.

Bishop, R., Berryman, M., Cavanagh, T., Teddy, L., & O'Sullivan, D. (2007). *The experiences of year 4 and 5 Māori students in primary school classrooms* (Report to the Ministry of Education). Māori Education Research, University of Waikato, Poutama Pounamu Research and Development Centre, Ministry of Education.

Boethel, M. (2003). *Diversity: School, family, community connections.* Austin, TX: Southwest Educational Development Laboratory, National Center for Family & Community Connections with Schools. Retrieved March 11, 2008, from www.sedl.org/connections

Bossert, S. T., Dwyer, D. C., Rowan, B., & Lee, G. V. (1982). The instructional management role of the principal. *Educational Administration Quarterly, 18*(3), pp. 34–64.

Brewer, D. J. (1993). Principals and student outcomes: Evidence from US high schools. *Economics of Education Review, 12*(4), pp. 281–292.

Bridges, E. M. (1986). *The incompetent teacher* (Stanford Series on Education and Public Policy). Lewes: Falmer Press.

Brown D. J., & Keeping, L. M. (2005). Elaborating the construct of transformational leadership: The role of affect. *Leadership Quarterly, 16*(2), pp. 245–272.

Bryk, A. S., & Schneider, B. L. (2002). *Trust in schools: A core resource for improvement.* New York: Russell Sage Foundation.

Bryk, A. S., Sebring, P. B., Kerbow, D., Rollow, S., & Easton, J. Q. (1998). *Charting Chicago school reform: Democratic localism as a lever for change.* Boulder, CO: Westview Press.

Burns, J. M. (1978). *Leadership.* New York: Harper & Row.

Camburn, E., Rowan, B., & Taylor, J. E. (2003). Distributed leadership in schools: The case of elementary schools adopting comprehensive school reform models. *Educational Evaluation and Policy Analysis, 25*, pp. 347–373.

Cardno, C. (2007). Leadership learning—the praxis of dilemma management. *International Studies in Educational Administration, 35*(2), pp. 33–50.

Cardno, C., & Piggot-Irvine, E. (1997). *Effective performance appraisal: Integrating accountability and development in staff appraisal.* Auckland: Longman.

Carkeek, L., Davies, L., & Irwin, K. (1994). *What happens to Māori girls at school?* (Final report). Wellington: Ministry of Education.

Caygill, R. (2008). *Science: Trends in year 5 science achievement 1994 to 2006: New Zealand results from three cycles of the Trends in International Mathematics and Science Study (TIMSS).* Wellington: Ministry of Education.

Cazden, C. (1990). Differential treatment in New Zealand: Reflections on research in minority education. *Teaching and Teacher Education, 6*(4), pp. 291–303.

Chamberlain, G., Chamberlain, M., & Walker, M. (2001). *Trends in year 5 students' mathematics and science achievement: Results from a New Zealand Study based on the Third International Mathematics and Science Study*. Wellington: Ministry of Education.

Chamberlain, M. (2007). *Reading literacy in New Zealand: An overview of New Zealand's results from the Progress in International Reading Literacy Study (PIRLS) 2005/2006*. Wellington: Ministry of Education.

Chamberlain, M. (2008). *PIRLS 2005/2006 in New Zealand: An overview of national findings from the second cycle of the Progress in International Reading Literacy Study (PIRLS)*. Wellington: Ministry of Education.

Chamberlain, M., & Caygill, R. (2002). *The school and classroom context for year 9 students' mathematics and science achievement: Results from New Zealand's participation in the repeat of the Third International Mathematics & Science Study*. Wellington: Ministry of Education.

Cheng, Y. C. (1994). Principals' leadership as a critical factor for school performance: Evidence from multi-levels of primary schools. *School Effectiveness and School Improvement, 5*(3), pp. 299–317.

Christensen, I. (2003). *An evaluation of Te Poutama Tau 2002: Exploring issues in mathematics education*. Wellington: Ministry of Education.

Church, R. J. (2003). *The definition, diagnosis and treatment of children and youth with severe behaviour difficulties* (Report to the Ministry of Education). Christchurch: Education Department, University of Canterbury.

Clark, S. M. (2003). *Reporting to parents in Māori bilingual units*. Unpublished master's thesis, University of Auckland.

Clay, M. (1985). Engaging with the school system: A study of interactions in New Zealand classrooms. *New Zealand Journal of Educational Studies, 20*(1), pp. 20–38.

Clay, M. M. (1993). *An observation survey of early literacy achievement*. Auckland: Heinemann Education.

Clinton, J., & Hattie, J. (2009). *Student's perceptions of parental involvement: Relations with liking, efficacy and achievement*. Manuscript submitted for publication.

Clinton, J. M., Hattie, J. A., & Dixon, R. (2005). *Evaluation of the Flaxmere Project: When families learn the language of schools*. Wellington: Ministry of Education.

Coburn, C. E. (2001). Collective sensemaking about reading: How teachers mediate reading policy in their professional communities. *Educational Evaluation and Policy Analysis, 23*, pp. 145–170.

Cooper, H. (2007). *The battle over homework: Common ground for administrators, teachers and parents* (3rd ed.). Thousand Oaks, CA: Corwin Press.

Cooper, H., Lindsay, J., & Nye, B. (2000). Homework in the home: How student, family and parenting-style differences relate to the homework process. *Contemporary Educational Psychology, 25*, pp. 464–487.

Cooper, H., Robinson, J. C., & Patall, E. A. (2006). Does homework improve academic achievement? A synthesis of research. *Review of Educational Research, 76*(1), pp. 1–62.

Crooks, T. & Flockton, L. (2005). *Reading and speaking: Assessment results 2004* (National Education Monitoring Report). Dunedin: Educational Assessment Research Unit.

Crooks, T. & Flockton, L. (2006). *Social studies: Assessment results 2005* (National Education Monitoring Report). Dunedin: Educational Assessment Research Unit.

Cuban, L. (1990). Reforming again, again and again. *Educational Researcher*, 19, pp. 3–13.

Department of Education (1988). *Tomorrow's Schools: The reform of education administration in New Zealand*. Wellington: Government Printer.

Desjardine, R., & Schuller, T. (2007). *Understanding the social outcomes of learning*. Paris: Centre for Educational Research and Innovation, OECD. See also www.oecd.org/edu/socialoutcomes/symposium

Deslandes, R., Royer, E., Turcotte, D., & Bertrand, R. (1997). School achievement at the secondary level: Influence of parenting style and parent involvement in schooling. *McGill Journal of Education, 32*, pp. 191–207.

Dimmock, C., & Walker, A. (2005). *Educational leadership: Culture and diversity*. Thousand Oaks, CA: Russell Sage Foundation.

Durie, M. (2001, February). *A framework for considering Māori educational advancement*. Opening Address, Hui Taumata Mātauranga, Turangi.

Durie, M. (2001, November). *The Hui Taumata Mātauranga: Progress and platforms for Māori advancement*. Address to Hui Taumata Tuarua, Turangi/Taupo.

Durie, M. (2006, April). *Māori Education 2026*. Paper presented at Post-Primary Teachers' Association conference, Wellington.

Earl, L., & Katz, S. (2002). Leading schools in a data-rich world. In K. Leithwood & P. Hallinger (Eds.), *Second international handbook of leadership and administration* (pp. 1003–1022). Dordrecht: Kluwer Academic.

Eberts, R. W., & Stone, J. A. (1986). Student achievement in public schools: Do principals make a difference? *Economics of Education Review, 7*(3), pp. 291–299.

Edmonds, R. (1979). Effective schools for the urban poor. *Educational Leadership, 37*, pp. 15–24.

Education Review Office (2007). *School governance: An overview*. Wellington: Author. www.ero.govt.nz

Education Review Office (2008). *Annual report for year ending 30 June 2008*. Wellington: Government Printer.

Elley, W. (2005). On the remarkable stability of student achievement standards over time. New Zealand *Journal of Educational Studies, 40*(1), pp. 3—24.

Elmore, R. F. (2004). *School reform from the inside out: Policy, practice, and performance*. Cambridge, MA: Harvard Education Press.

Epstein, J. L. (2001). *School, family, and community partnerships: Preparing educators and improving schools*. Boulder, CO: Westview Press.

Epstein, J. L., Simon, B. S., & Salinas, K. C. (1997). *Involving parents in homework in the middle grades*. Retrieved March 11, 2008, from www.pdkintl.org/research/rbulletins/resbul18.htm

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review, 13*, pp. 1—22.

Fay, B. (1987). *Critical social science: Liberation and its limits*. Cambridge, UK: Polity.

Fitzgerald, T. (2003). Interrogating orthodox voices: Gender ethnicity and educational leadership. School *Leadership and Management, 23*(4), pp. 431—444.

Fitz-Gibbon, C. T. (1996). *Monitoring education: Indicators, quality and effectiveness*. London: Cassell.

Fitz-Gibbon, C. T., & Tymms, P. (2002). Technical and ethical issues in indicator systems: Doing things right and doing wrong things. *Education Policy Analysis Archives, 10*(6). Retrieved from http://epaa.asu.edu/epaa/v10n16/

Friedkin, N. E., & Slater, M. R. (1994). School leadership and performance: A social network approach. *Sociology of Education, 67*(2), pp. 139—157.

Fullan, M. (2001). *Leading in a culture of change*. San Fransisco, CA: Jossey-Bass.

Fullan, M., Hill, P., & Crevola, C. (2006). *Breakthrough*. Thousand Oaks, CA: Corwin Press.

Fung, I. Y. Y., Townsend, M. A. R., & Parr, J. M. (2004). *Teaching school children to think critically in language arts: How and why?* Paper presented at the British Educational Research Association annual conference (16—18 September), UMIST, Manchester, UK. Retrieved from www.leeds.ac.uk/educol/documents/00003713.htm

Garden, R. (Ed.). (1997). *Mathematics and science performance in middle primary school. Results from New Zealand's participation in the Third International Mathematics and Science Study*. Wellington: Ministry of Education.

Georgiou, S. N. (1999). Parental attributions as predictors of involvement and influences on child achievement. *British Journal of Educational Psychology, 69*, pp. 409—429.

Glass, G. V., McGaw, B., & Smith, M. L. (1981). *Meta-analysis in social research*. Newbury Park, CA: Sage Publications.

Glynn, T. (1994). *Tatari tautoko tauawhi: A bicultural journey: Development and evaluation of tutoring procedures for children learning to read in Māori*. Dunedin: Education Department, University of Otago.

Glynn, T., & Berryman, M. (2003). *A community elder's role in improving reading and writing for Māori students*. In R. Barnard & T. Glynn (Eds.), Bilingual children's language and literacy development. Clevedon, UK: Multilingual Matters.

Glynn, T., & McNaughton, S. (1985). The Mangere home and school remedial reading procedures: Continuing research on their effectiveness. *New Zealand Journal of Psychology, 14*, pp. 66—77.

Glynn, T., McNaughton, S., Robinson, V., & Quinn, (1979). *Remedial reading at home: Helping you to help your child*. Wellington: New Zealand Council for Educational Research.

Goddard, R. D., Hoy, W. K., & Hoy, A. (2000). Collective teacher efficacy: Its meaning, measure, and impact on student achievement. *American Educational Research Journal, 37*(2), pp. 479—507.

Goldring, E. B., & Pasternak, R. (1994). Principals' coordinating strategies and school effectiveness. *School Effectiveness and School Improvement, 5*(3), pp. 237—251.

Goldstein, J. (2003). Making sense of distributed leadership: The case of peer assistance and review. *Educational Evaluation and Policy Analysis, 25*(4), pp. 397—421.

Gorinski, R. (2005). *Pacific Islands School Community Parent Liaison Project case study*. Wellington: Ministry of Education.

Griffith, J. (1997). Linkages of school structural and socioenvironmental characteristics to parental satisfaction with public education and student academic achievement. *Journal of Applied Social Psychology, 27*, pp. 156—186.

Griffith, J. (2004). Relation of principal transformational leadership to school staff job satisfaction, staff turnover, and school performance. *Journal of Educational Administration, 42*(3), pp. 333—356.

Gronn, P. (2000). Distributed properties: A new architecture for leadership. *Educational Management and Administration, 28*(3), pp. 317—338.

Haahr, J., Nielsen, T., Hansen, M., & Jackobsen, S. (2005). *Explaining student performance: Evidence from the international PISA, TIMSS and PIRLS surveys* (Report prepared for the European Commission's Directorate-General for Education and Culture). Århus: Danish Technological Institute.

Hackman, J. R., & Wageman, R. (2007). Asking the right questions about leadership: Discussion and conclusions. *American Psychologist, 62*(1), pp. 43—47.

Hallinger, P. (2005). Instructional leadership and the school principal: A passing fancy that refuses to fade away. *Leadership and Policy in Schools, 4*(3), pp. 221–239.

Hallinger, P., Bickman, L., & Davis, K. (1996). School context, principal leadership, and student reading achievement. *Elementary School Journal, 96*(5), pp. 527–549.

Hallinger, P., & Heck, R. H. (1998). Exploring the principal's contribution to school effectiveness: 1980–1995. *School Effectiveness and School Improvement, 9*(2), pp. 157–191.

Halverson, R., Kelley, C., & Kimball, S. (2004). Implementing teacher evaluation systems: How principals make sense of complex artifacts to shape local instructional practice. In W. K. Hoy & C. G. Miskel (Eds.), *Educational administration, policy and reform: Research and measurement* (pp. 153–188). Greenwich, CT: Information Age Publishing, Inc.

Hamilton, R., Anderson, A., Frater-Mathieson, K., Loewen, S., & Moore, D. (2000). *Literature review: Interventions for refugee children in New Zealand schools: Models, methods and best practice* (Report prepared for the Ministry of Education). Auckland: University of Auckland.

Hanushek, E. A. (2005). *Economic outcomes and school quality.* Paris: IIEP and Brussels: IAE.

Hanushek, E., & Woessman, L. (2008). The role of cognitive skills in economic development. *Journal of Economic Literature, 46*(3), pp. 607–668.

Harker, R. (2006, July). *Ethnicity and school achievement in New Zealand: Some data to supplement the Biddulph et al. (2003) best evidence synthesis* (Report prepared for the Iterative Best Evidence Synthesis Programme). Wellington: Ministry of Education.

Harker, R., Nash, R., Johnstone, P. E., & Hattie, J. (2001). *Secondary analysis: Scoping project.* Wellington: Ministry of Education.

Harris, A. (2005). Leading or misleading? Distributed leadership and school improvement. *Journal of Curriculum Studies, 37*(3), pp. 255–265.

Hattie, J. (1992). Measuring the effects of schooling. *Australian Journal of Education, 36*(1), pp. 5–13.

Hattie, J. (1999, April). *Influences on student learning.* Inaugural lecture, University of Auckland.

Hattie, J. (2003, October). *Teachers make a difference: What is the research evidence?* Paper presented at the Australian Council for Educational Research Annual Conference on Building Teacher Quality, Melbourne.

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement.* London and New York: Routledge.

Heck, R. H. (1992). Principals' instructional leadership and school performance: Implications for policy development. *Educational Evaluation and Policy Analysis, 14*(1), pp. 21–34.

Heck, R. H. (2000). Examining the impact of school quality on school outcomes and improvement: A value-added approach. *Educational Administration Quarterly, 36*(4), pp. 513–552.

Heck, R. H., Larsen, T. J., & Marcoulides, G. A. (1990). Instructional leadership and school achievement: Validation of a causal model. *Educational Administration Quarterly, 26*(2), pp. 94–125.

Heck, R. H., & Marcoulides, G. A. (1996). School culture and performance: Testing the invariance of an organizational model. *School Effectiveness and School Improvement, 7*(1), pp. 76–95.

Heck, R. H., Marcoulides, G. A., & Lang, P. (1991). Principal instructional leadership and school achievement: The application of discriminant techniques. *School Effectiveness and School Improvement, 2*(2), pp. 115–135.

Hedges, L., & Olkin, I. (1985). *Statistical methods for meta-analysis.* New York: Academic Press.

Henderson, A. T., & Mapp, K. L. (2002). *A new wave of evidence: The impact of school, family, and community connections on student achievement.* Austin, TX: Southwest Educational Development Laboratory.

Higgins, J. (with Parsons, R., & Hyland, M). (2002). The numeracy development project: Policy to practice. In I. Livingstone (Ed.), *New Zealand Annual Review of Education, 12.*

Higgins, J. (2004). *An evaluation of the Advanced Numeracy Project 2003.* Wellington: Ministry of Education.

Hodgen, E., & Wylie, C. (2005). *Stress and wellbeing among New Zealand principals.* (Report to the New Zealand Principals' Federation). Wellington: New Zealand Council for Educational Research.

Hohepa, M. K. (2000). Issues in the production of written Māori text. In J. Soler & J. Smith (Eds) *Literacy Practices: Yesterday and Today.* Auckland: Pearson International, pp. 58–72.

Hohepa, M. K. (2006). Biliterate practices in the home: Supporting indigenous language regeneration. *Journal of Language, Identity, and Education, 5*(4), pp. 293–301.

Hohepa, M., & Robinson, V. (2008). Māori and educational leadership: Tū rangatira. *AlterNative: An International Journal of Indigenous Scholarship, 4*(2), pp. 20–38.

Hohepa, P. (1999). My musket, my missionary, and my mana. In A. Calder, J. Lamb, and B. Orr (Eds.), *Voyages and beaches: Pacific encounters, 1769–1840.* Honolulu: University of Hawai'i Press.

Hoy, W. K., Tarter, J. C., & Bliss, J. R. (1990). Organisational climate, school health, and effectiveness: A comparative analysis. *Educational Administration Quarterly, 26*(3), pp. 260–279.

Hutchins, E. (1995). *Cognition in the wild.* Cambridge, MA: MIT Press.

Jeynes, W. H. (2005). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Education, 40*, pp. 237–269.

Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement. *Urban Education, 42*, pp. 82–110.

Jowett, B. (Trans.). (1968). *Plato: The republic, book III*. New York: Airmont.

Kerbrow, D. (1996). Patterns of student mobility and local school reform. *Journal of Education for Students Placed at Risk, 1*, pp. 147–170.

Kessler-Sklar, S. L., & Baker, A. J. L. (2000). School district parent involvement policies and programs. *Elementary School Journal, 101*, pp. 101–118.

Kochanek, J. R. (2005). *Building trust for better schools: Research-based practices*. Thousand Oaks, CA: Corwin Press.

Kruse, S., Louis, K. S., & Bryk, A. (1994). *Building professional communities in schools*. In *Issues in restructuring schools* (Issue report no. 6, pp. 3–6). Wisconsin-Madison: Center on Organization and Restructuring of Schools.

Kyriakides, L. (2005). Evaluating school policy on parents working with their children in class. *Journal of Educational Research, 98*, pp. 281–300.

Latham, G. P., & Locke, E. A. (2006). Enhancing the benefits and overcoming the pitfalls of goal setting. *Organizational Dynamics, 35*(4), pp. 332–340.

Lawrence, S. M., & Daniel Tatum, B. (1997). Teachers in transition: The impact of antiracist professional development on classroom practice. *Teachers College Record, 99*(1), pp. 162–178.

Lee, V. E., & Smith, J. B. (1996). Collective responsibility for learning and its effects on gains in achievement for early secondary school students. *American Journal of Education, 104*(2), pp. 103–147.

Leithwood, K. (1994). Leadership for school restructuring. *Educational Administration Quarterly, 30*(4), pp. 498–518.

Leithwood, K., & Jantzi, D. (1999). Transformational school leadership effects: A replication. *School Effectiveness and School Improvement, 10*(4), pp. 451–479.

Leithwood, K., & Jantzi, D. (2000). Principal and teacher leadership effects: A replication. *School Leadership and Management, 20*(4), pp. 415–434.

Leithwood, K., & Jantzi, D. (2005). A review of transformational school leadership research 1996–2005. *Leadership and Policy in Schools, 4*(3), pp. 177–199.

Leithwood, K., & Jantzi, D. (2006). Transformational school leadership for large-scale reform: Effects on students, teachers, and their classroom practices. *School Effectiveness and School Improvement, 17*(2), pp. 201–227.

Leithwood, K., Seashore Louis, K., Anderson, S., & Wahlstrom, K. (2004, September). *How leadership influences student learning*. Retrieved June 11, 2005, from www.wallacefoundation.org/NR/rdonlyres/E3BCCFA5-A88B-45D3-8E27-B973732283C9/0/ReviewofResearchLearningFromLeadership.pdf

Leithwood, K., & Steinbach, R. (1995). *Expert problem solving: Evidence from school and district leaders*. Albany, NY: State University of New York Press.

Leithwood, K., Tomlinson, D., & Genge, M. (1996). Transformational school leadership. In K. Leithwood, J. Chapman, D. Corson, P. Hallinger, & A. Hart (Eds.), *International handbook of educational leadership and administration* (pp. 785–840). Dordrecht: Kluwer Academic.

Leitner, D. (1994). Do principals affect student outcomes? *School Effectiveness and School Improvement, 5*(3), pp. 219–238.

Levin, H. (2008). The economic payoff to investing in educational justice. 2008 AERA Distinguished Lecture. *Educational Researcher, 38*(1), pp. 5–20.

Levin, B. (2009). *How to change 5000 schools: A practical approach for leading change at every level*. Cambridge, MA: Harvard Education Press.

Lipka, J., & Adam, S. (2006, February). *Mathematics in a cultural context: Salmon fishing—Investigations into probability*. Paper presented at the Third International Conference on Ethnomathematics, Auckland.

Lipka, J., & Adams, B. (2004). *Culturally based math education as a way to improve Alaska Native students' math performance* (Working Paper No. 20). Ohio University, Athens, OH: Appalachian Collaborative Center for Learning, Assessment and Instruction in Mathematics Research Initiative. (ERIC Document Reproduction Service No. ED346082).

Maden, M. (Ed.). (2001). *Success against the odds, five years on: Revisiting effective schools in disadvantaged areas*. London: Routledge Falmer.

Madraiwiwi, J. (2005, July). Remarks to the Pacific Regional Workshop on Leadership Development Dinner, Tradewinds Convention Centre, Lami.

Malone, K. (2006). *Project report: Reducing compliance; increasing trust*. Report prepared for Education Management Policy, Ministry of Education and Kingston Associates.

Marks, H. M., & Printy, S. M. (2003). Principal leadership and school performance: An integration of transformational and instructional leadership. *Educational Administration Quarterly, 39*(3), pp. 370–397.

Martin, J. (2001). *Talking to the chair: An exploration of the role of the board of trustees chairperson in small rural schools*. Unpublished doctoral dissertation, University of Waikato, Hamilton.

Martin, M., Mullis, I., & Foy, P. (2008). *TIMSS 2007 international science report: Findings from IEA's Trends in International Mathematics and Science Study at the fourth and eighth grades*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College. http://timssandpirls.bc.edu

Martin, M. O., Mullis, I. V. S., Gonzalez, E. J., & Chrostowski, S. J. (2004). *Findings from IEA's Trends in International Mathematics and Science Study at the fourth and eighth grades*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Martin, M. O., Mullis, I. V. S., Gonzalez, E. J., Smith, T. A., & Kelly, D. L. (1999). *School contexts for learning and instruction in IEA's Third International Mathematics and Science Study*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Marzano, R., Pickering, D., & Pollock, J. (2001). *Classroom instruction that works: Research-based strategies for increasing student achievement*. Alexandria, VA: Association for Supervision and Curriculum Development.

Marzano, R. J., Waters, T., & McNulty, B. (2005). *School leadership that works: From research to results*. Alexandria, VA: ASCD and McREL.

Mau, W. (1997). Parental influence on the high school students' academic achievement: A comparison of Asian immigrants, Asian Americans, and White Americans. *Psychology in the Schools, 34*, pp. 267–277.

May, S., & Wagemaker, H. (1993). Factors influencing reading achievement. In H. Wagemaker (Ed.), *Achievement in reading literacy: New Zealand's performance in a national and international context* (pp. 166–183). Wellington: Research Section, Ministry of Education.

Mayer, R. & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational Psychologist, 38*(1), pp. 43–52.

McDowall, S., & Boyd, S. (2005). *Messages about reading: What do parents and teachers hear, share and do, and need when engaging in literacy partnerships?* Wellington: New Zealand Council for Educational Research.

McDowall, S., Boyd, S., Hodgen, E., & Vliet, T. V. (2005). *Reading Recovery in New Zealand: Uptake, implementation, and outcomes, especially in relation to Māori and Pasifika students*. Wellington: New Zealand Council for Educational Research.

McDowell, S., Cameron, M., & Dingle, R. with Gilmore, A., & MacGibbon, L. (2007). *Evaluation of the Literacy Professional Development Programme*. Wellington: Ministry of Education.

McKinsey & Company (April, 2009). *The economic impact of the achievement gap in America's schools: Summary of findings*. www.mckinsey.com/clientservice/socialsector/achievement_gap_report.pdf

McLaughlin, M.W., & Mitra, D. (2001). Theory-based change and change-based theory: Going deeper, going broader. *Journal of Educational Change, 2*(4), pp. 301–323.

McNaughton, S. (2002). *Meeting of minds*. Wellington: Learning Media.

McNaughton, S., Glynn, T., & Robinson, V. M. (1981). *Parents as remedial reading tutors*. Wellington: New Zealand Council for Educational Research.

McNaughton, S., Glynn, T., & Robinson, V. (1987). *Pause, prompt and praise: Effective remedial reading tutoring*. Birmingham: Positive Products.

McNeight, C. (1998). *"Wow! These sorts of things are similar to our culture!" Becoming culturally inclusive within the senior secondary school curriculum*. Unpublished postgraduate action-research report, Victoria University, Wellington.

Mead, L. T. (1996). *Ngā aho o te kākahu mātauranga: The multiple layers of struggle by Māori in education*. Unpublished doctoral thesis, University of Auckland.

Meindl, J. R. (1998). The romance of leadership as follower centric theory. In F. Dansereau & F. Yammarino (Eds.), *Leadership: The multiple-level approaches* (pp. 285–298). Stamford, CT: JAI Press.

Mercado, C. I. (2001). The learner: 'race,' 'ethnicity,' and linguistic difference. In V. Richardson (Ed.), *The handbook of research on teaching* (4th ed.). Washington DC: American Educational Research Association.

Miles, K. H., & Franks, S. (Forthcoming). *The strategic school: Making the most of people, time and money*. Thousand Oaks, California: Corwin Press.

Millward, P., Neal, R., Kofoed, W., Parr, J., Kuin Lai, M., & Robinson, V. (2001). Schools' learning journeys: Evaluating a literacy intervention at Dawson Road Primary School. *Set: Research Information for Teachers, 2*, pp. 39–42.

Ministry of Education (1997). Performance Management Systems: PMS1: Performance Appraisal. *The Education Gazette* (10 February supplement).

Ministry of Education (1998). *Teacher performance management: Primary school teachers, primary school deputy/ assistant principals: A resource for boards of trustees, principals, and teachers*. Wellington: Author.

Ministry of Education (2000). *Literacy leadership in New Zealand Schools*. Wellington: Learning Media.

Ministry of Education (2004). *Book 1: The Number Framework*. Wellington: Author.

Ministry of Education (2006a). *The New Zealand curriculum: Draft for consultation 2006*. Wellington: Learning Media.

Ministry of Education (2007). *Improving school leadership: Country background report for New Zealand*. www.oecd.org/dataoecd/37/43/38740175.pdf

Ministry of Education (2007a). *The New Zealand curriculum*. Wellington: Author.

Ministry of Education (2007b). *Ka Hikitia: Draft Māori Education Strategy*. Wellington: Author.

Ministry of Education (2007c). *Kiwi leadership for principals: Informing principals' professional learning*. Wellington: Author.

Ministry of Education (2008). *Ka Hikitia—Managing for success/Māori Education Strategy 2008–2012*. http://kahikitia.minedu.govt.nz

Ministry of Education (2008). *Pasifika Education Plan 2008–2012*. Wellington: Author. www.minedu.govt.nz/educationSectors/PasifikaEducation/PolicyAndStrategy/PasifikaEducationPlan.aspx

Ministry of Social Development (2008). *The social report/Te pūrongo oranga tangata 2008*. Wellington: Author. www.socialreport.msd.govt.nz/health/suicide.html

Moore, P. (2006). *Evidence based policy report. Iterative Best Evidence Synthesis Programme*. Wellington: Ministry of Education. www.educationcounts.govt.nz/goto/BES

Morris, C., & Katon, S. (2006). A torrent of change: Enhancing effective change in special education—one school's journey. *Kairaranga, 7*(Special Edition), pp. 28–32.

Mulford, W., Silins, H., & Leithwood, K. (2004). *Educational leadership for organisational learning and improved student outcomes*. Dordrecht: Kluwer Academic.

Mullis, I. V. S., Martin, M. O., Gonzalez, E. J., & Kennedy, A. M. (2003). *PIRLS 2001 international report: IAE's study of reading literacy achievement in primary schools*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Mullis, I., Martin, M., & Foy, P. (2008). *TIMSS 2007 international mathematics report: Findings from IEA's Trends in International Mathematics and Science Study at the fourth and eighth grades*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Mullis, I. V. S., Martin, M. O., & Foy, P. (2008). *TIMSS 2007 international science report: Findings from IEA's Trends in International Mathematics and Science Study at the fourth and eighth grades*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Mullis, I. V. S., Martin, M. O., Gonzalez, E. J., & Chrostowski, S. J. (2004). *International science report: Findings from IEA's Trends in International Mathematics and Science Study at the fourth and eighth grades*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Mullis, I. V. S., Martin, M. O., Gonzalez, E. J., Gregory, K. D., Garden, R. A., O'Connor, K. M., Chrostowski, S. J., & Smith, T. A. (2000). *TIMSS 1999 International Mathematics Report: Findings from IAE's repeat of the Third International Mathematics and Science Study at the eighth grade*. Boston College: International Association for the Evaluation of Educational Achievement.

Mullis, I., Martin, M., Kennedy, A., & Foy, P. (2007). *PIRLS 2006 Progress in International Reading Literacy Study in Primary Schools in 40 countries*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Nakhid, C. (2003). Comparing Pasifika students' perceptions of their schooling with the perceptions of non-Pasifika teachers using the 'mediated dialogue' as a research methodology. *New Zealand Journal of Educational Studies, 38*(2), pp. 220–221.

Nelson, B. S., & Sassi, A. (2000). Shifting approaches to supervision: The case of mathematics supervision. *Educational Administration Quarterly, 36*(4), pp. 553–584.

Nelson, B. S., & Sassi, A. (2005). *The effective principal: Instructional leadership for high quality learning*. Columbia, NY: Teachers College Press.

Nepe, T. M. (1991). *E hao nei e tēnei reanga te Toi Huarewa Tupuna: Kaupapa Māori, An educational intervention system*. Unpublished masters thesis, University of Auckland.

Newmann, F. (1994). *School-wide professional community: Issues in restructuring schools* (Issue Report No. 6). Madison, WI: Center on Organization and Restructuring of Schools, University of Wisconsin.

Nuthall, G. A. (2004). Relating classroom teaching to student learning: A critical analysis of why research has failed to bridge the theory—practice gap. *Harvard Educational Review, 74(3)*.

Nuthall, G. (2007). *The hidden lives of learners*. Wellington: New Zealand Council for Educational Research.

OECD (2001). *Knowledge and skills for life: First results from the OECD Programme for International Student Assessment (PISA) 2000*. Paris: Author.

OECD (2003). *Learning for tomorrow's world: First results from PISA 2003*.

OECD (2007). *PISA 2006: Science competencies for tomorrow's world, Volume 1 Analysis*. Programme for International Student Assessment. Paris: Author.

OECD (2008). *Education at a glance: OECD Indicators 2008*. Paris: Author.

Ogawa, R. T., & Bossert, S. T. (1995). Leadership as an organizational quality. *Educational Administration Quarterly, 31*(2), pp. 224–243.

Ogawa, R. T., & Hart, A. (1985). The effect of principals on the instructional performance of schools. *Journal of Educational Administration, 23*(1), pp. 59–72.

O'Hare, N. (2001, June 2). Homework hell. *Listener*, p. 18.

O'Neill, J. (2001). *Shards of teacher and curriculum development in four New Zealand secondary schools*. Unpublished doctoral thesis, Massey University, Palmerston North. http://nzcer.org.nz/NZETbasic.php

O'Sullivan, G. (2001). *Technology education and industry links: An exploratory case study*. Unpublished master's thesis, Massey University, Palmerston North.

Paas ,F., Renkl, A., & Sweller, J. (2003). Cognitive load theory and instructional design: Recent developments. *Educational Psychologist, 38*(1), pp. 1—4.

Pajak, E., & Arrington, A. (2004). Empowering a profession: Rethinking the roles of administrative evaluation and instructional supervision in improving teacher quality. In M. A. Smylie & D. Miretzky (Eds.), *Developing the teacher workforce (103rd yearbook of the National Society for the Study of Education*, pp. 228—253). Chicago: National Society for the Study of Education.

Parr, J., Aikman, M., Irving, E., & Glasswell, K. (2004). *An evaluation of the use and integration of readymade commercial literacy packages into classroom programmes* (Final report). Wellington: Ministry of Education.

Parr, J., Timperley, H., Reddish, P., Jesson, R., & Adams, R. (2006). *Literacy Professional Development Project: Identifying effective teaching and professional development practices for enhanced student learning. Milestone 5* (Final report). Wellington: Learning Media.

Pawson, R. (2002). Evidence-based policy: The promise of realist synthesis. *Evaluation, 8*(3), pp. 340—358.

Phillips, G., McNaughton, S., & MacDonald, S. (2001). *Picking up the pace: Effective literacy interventions for accelerated progress over the transition into decile one schools* (Final report). Wellington: Ministry of Education. Retrieved from www.minedu.govt.nz/web/document/document_page.cfm?id=6444

Postlethwaite, N., & Ross, K. (1992). *Effective schools in reading: Implications for educational planners*. Hamburg: IEA.

Pounder, D. G., Ogawa, R. T., & Adams, E. A. (1995). Leadership as an organization-wide phenomena: Its impact on school performance. *Educational Administration Quarterly, 31*(4), pp. 564—588.

Prestine, N. A., & Nelson, B. S. (2005). How can educational leaders support and promote teaching and learning? In W. A. Firestone & C. Riehl (Eds.), *A new agenda: Directions for research on educational leadership* (pp. 46—60). New York: Teachers College Press.

Ranson, S., Farrell, C., Peim, N., & Smith, P. (2005). *Does governance matter for school improvement? School Effectiveness and School Improvement, 16*(3), pp. 305—325.

Rau, C. (2005). Literacy acquisition, assessment and achievement of year two tauira in total immersion in Māori programmes. *International Journal of Bilingual Education and Bilingualism, 8*(5), pp. 404—432.

Rau, C. (2008). Assessment in indigenous language programmes. In E. Shohamy & H. Hornberger (Eds.), *Encyclopedia of Language and Education,* (2nd ed., Vol. 7), Language Testing and Assessment. (pp. 319—330). New York: Springer Science+Business Media LLC.

Rau, C., Whiu, I., Thomson, H., Glynn, T., and Milroy, W. (2001). *He Ara Angitu: A description of success in reading for five-year old Māori-medium students*. Wellington: Ministry of Education.

Rice, D., Delagrardelle, M., Buckton, M., Jons, C., Lueders, W., Vens, M., Joyce, B., Wolf, J., & Weatherby, J. (2000). *The Lighthouse Inquiry: School board/superintendent team behaviours in school districts with extreme behaviours in student achievement.* (ERIC Document Reproduction Service No. ED453172)

Robinson, V. M. J. (1993). *Problem-based methodology: Research for the improvement of practice*. Oxford: Pergamon Press.

Robinson, V. M. J. (2001). Embedding leadership in task performance. In K. Wong & C. Evers (Eds.), *Leadership for quality schooling: International perspectives* (pp. 90—102). London: Falmer.

Robinson, V. M. J. (2006). Putting education back into educational leadership. *Leading & Managing, 12*(1), pp. 62—75.

Robinson, V. M. J. (2007, 11 October). *School leadership and student outcomes: Identifying what works and why*. Paper presented at the Joint Conference of the Australian Council of Educational Leaders and the Association for Supervision and Curriculum Development, Sydney. www.educationcounts.govt.nz/publications/series/2515/13723

Robinson, V. M. J. (2008). Forging the links between distributed leadership and student outcomes. *Journal of Educational Administration, 46*(2), pp. 241—256.

Robinson, V. M. J., & Lai, M. K. (2006). *Practitioner research for educators: A guide to improving classrooms and schools*. Thousand Oaks, CA: Corwin Press.

Robinson, V. M. J., Lloyd, C., & Rowe, K. (2008). The impact of leadership on student outcomes: An analysis of the differential effects of leadership types. *Educational Administration Quarterly (44)*5, pp. 635—674.

Robinson, V., Phillips, G., & Timperley, H. (2002). Using achievement data for school-based curriculum review: A bridge too far? *Leadership and Policy in Schools, 1*(1), pp 3—29.

Robinson, V. M. J., & Timperley, H. S. (2000). The link between accountability and improvement: The case of reporting to parents. *Peabody Journal of Education, 75*(4), pp. 66—89.

Robinson, V. M. J., & Walker, J. C. (1999). Theoretical privilege and researchers' contribution to educational change. In J. S. Gaffney & B. J. Askew (Eds.), *Stirring the waters: The influence of Marie Clay* (pp. 239—259). Portsmouth, NH: Heinemann.

Robinson, V. M. J., & Ward, L. (2005). Lay governance of New Zealand's schools: An educational, democratic or managerialist activity? *Journal of Educational Administration, 43*(2), pp. 170–186.

Robinson, V. M. J., Ward, L., & Timperley, H. (2003). The difficulties of school governance: A layperson's job? *Educational Management & Administration, 31*, pp. 263–281.

Rosenzweig, C. (2000). *A meta-analysis of parenting and school success: The role of parents in promoting students' academic performance*. Unpublished doctoral dissertation, Hofstra University, New York.

Rubie, C. (1999). *The effect of a Māori culture group experience on children's self esteem, locus of control and academic performance*. Unpublished master's thesis, University of Auckland.

Rumberger, R. W., Larson, K. A., Ream, R. K., & Palardy, G. J. (1999). *The educational consequences of mobility for California students and schools*. Berkeley: Policy Analysis for California Education, University of California.

Sanga, K. & Walker, K. (2005). *Apem Moa: Solomon Islands leadership*. Wellington: Institute for Research and Development in Māori and Pacific Education, Victoria University.

Sarason, S. B. (1990). *The predictable failure of educational reform*. San Francisco: Jossey-Bass.

Schagen, S., & Wylie, C. (2008). *School resources, culture and connections*. Wellington: New Zealand Council for Educational Research.

Scheurich, J. J. (1998). Highly successful and loving, public elementary schools populated mainly by low-SES children of color: Core beliefs and cultural characteristics. *Urban Education, 33*(4), pp. 451–491.

Schulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*(1), pp. 1–22.

Sharples, P. (1989). Kura kaupapa Māori: Recommendations for policy proposals for the establishment of kura kaupapa Māori. *Access, 8*(1), pp. 28–36.

Sharples, P. (2007, July). *The welfare of the children ensures the future strength of the people*. Keynote presentation at the 44th Annual Conference and AGM of Te Tari Puna Ora o Aotearoa / New Zealand Childcare Association, Paihia.

Sheldon, S. B., & Epstein, J. (2005). Involvement counts: Family and community partnerships and mathematics achievement. *Journal of Educational Research, 98*, pp. 196–206.

Silins, H., & Mulford, B. (2002). Leadership and school results. In K. Leithwood & P. Hallinger (Eds.), *The second international handbook of educational leadership and administration* (pp. 561–612). Norwell, MA: Kluwer Academic.

Simon, B. (2000). *Predictors of high school and family partnerships and influence of partnerships on student success*. Unpublished doctoral dissertation, Johns Hopkins University, Baltimore.

Sinnema, C. E. L. (2005). *Teacher appraisal: Missed opportunities for learning*. Unpublished doctoral thesis, University of Auckland.

Sinnema, C., & Robinson, V. M. J. (2007). The leadership of teaching and learning: Implications for teacher evaluation. *Leadership and Policy in Schools, 6*(4), pp. 1–25, 319–343.

Siskin, L. S., & Little, J. W. (1995). *The subjects in question: Departmental organization and the high school*. New York: Teachers College Press.

Skerrett White, M. (2003). *Kia mate rā anō a tama-nui-te-rā: Reversing language shift in kōhanga reo*. Unpublished doctoral thesis, University of Waikato, Hamilton.

Smith, G. (1995). Whakaoho whānau: New formations of whānau as an innovative intervention into Māori cultural and educational crises. *He Pukenga Kōrero: A Journal of Māori Studies, 1*(1), pp. 18–36.

Smith, G. H. (1997). *The development of kaupapa Māori: Theory and praxis*. Unpublished doctoral thesis, University of Auckland.

Smylie, M. A., & Bennett, A. (2005). What do we know about developing school leaders? A look at existing research and next steps for new study. In W. A. Firestone & C. Riehl (Eds.), *A new agenda for research in educational leadership* (pp. 138–155). New York: Teachers College Press.

Spillane, J. P. (2004). *Standards deviation: How schools misunderstand education policy*. Cambridge, MA: Harvard University Press.

Spillane, J. P. (2006). *Distributed leadership*. San Francisco, CA: Jossey-Bass.

Spillane, J. P., Reiser, B. J., & Reimer, T. (2002). Policy implementation and cognition: Reframing and refocusing implementation research. *Review of Educational Research, 72*, pp. 387–431.

Spillane, J. P., & Seashore Louis, K. (2002). School improvement process and practices: Professional learning for building instructional capacity. In J. Murphy (Ed.), *The educational leadership challenge: Redefining leadership for the 21st century* (pp. 83–104). Chicago: University of Chicago Press.

St George, A. (1983). Teacher expectations and perceptions of Polynesian and Pakeha pupils and the relation of classroom behaviour and school achievement. *British Journal of Educational Psychology, 53*, pp. 48–59.

Statistics New Zealand (2008). *National ethnic population projections: 2006–2026*. Wellington: Author. www.stats.govt.nz

Stein, M. K., & Nelson, B. S. (2003). Leadership content knowledge. *Educational Evaluation and Policy Analysis, 25*, pp. 423–448.

Sternberg, R. J. (2005). A model of educational leadership: Wisdom, intelligence, and creativity, synthesised. *International Journal of Leadership in Education, 8*(4), pp. 347–364.

Sua-Hawkins, A., & Mafile'o, T. (2004). What is cultural leadership? *Social Work Now, 29*, pp. 10–16.

Taskforce to Review Education Administration (1988). *Administering for excellence. Effective administration in education. Report of the Taskforce to Review Education Administration.* Wellington: Government Printer.

Te Tāhuhu o te Mātauranga / Ministry of Education (1999). *A report of workload issues for Māori secondary school teachers.* Wellington: Author.

Thomas, D. (1984). (Ed.). Patterns of social behaviour: New Zealand and the South Pacific. *Psychology Research Series, No. 17.* Hamilton: University of Waikato.

Thomas, G., & Tagg, A. (2005). Evidence for expectations: Findings from the numeracy project longitudinal study. In *Findings from the New Zealand Numeracy Development Project 2004* (pp. 21–34). Wellington: Ministry of Education.

Thomas, P. J. (2003). *Reporting student achievement through portfolios: Teacher practice and parental reaction.* University of Auckland.

Timperley, H. S. (2005a). Distributed leadership: Developing theory from practice. *Journal of Curriculum Studies, 37*(4), pp. 395–420.

Timperley, H. S. (2005b). Instructional leadership challenges: The case of using student achievement information for instructional improvement. *Leadership and Policy in Schools, 4*(1), pp. 3–22.

Timperley, H. S., & Parr, J. M. (2005). Theory competition and the process of change. *Journal of Educational Change, 6*, pp. 227–251.

Timperley, H. S., Parr, J., & Higginson, R. M. (2003). *Evaluation of the Literacy Leadership initiative: The enhancement programme 2001.* Wellington: Ministry of Education.

Timperley, H., & Robinson, V. (2002). *Partnership: Focusing the relationship on the task of school improvement.* Wellington: New Zealand Council for Educational Research.

Timperley, H. S., & Robinson, V. M. J. (2004). O le tala ia Lita—Lita's story: The challenge of reporting achievement to parents. *New Zealand Journal of Educational Studies, 39*, pp. 91–112.

Timperley, H., Smith, L., Parr, J., Portway, J., Mirams, S., Clark, S., Allen, M., and Page, J. (2004). *Analysis and use of student achievement data (AUSAD)* (Final evaluation report prepared for the Ministry of Education). Wellington: Ministry of Education.

Timperley, H. S., & Wiseman, J. (2003). *The sustainability of professional development in literacy: Part 2. School-based factors associated with high student achievement.* Wellington: Ministry of Education. Retrieved from www.minedu. govt.nz/index.cfm?layout=document&documentid=8638&data=l.

Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). *Teacher professional learning and development: Best evidence synthesis iteration.* Wellington: Ministry of Education.

Trinick, T. (2005). Te Poutama Tau: A case study of two schools. In *Findings from the New Zealand Numeracy Development Project 2004* (pp. 103–114). Wellington: Ministry of Education.

Tschannen-Moran, M., & Hoy, W. K. (2000). A multidisciplinary analysis of the nature, meaning, and measurement of trust. *Review of Educational Research, 70*(4), pp. 547–593.

Tuck, B., Horgan, L., Franich, C., & Wards, M. (2007). *School leadership in a school–home partnership: Reading Together at St Joseph's School Otahuhu* (Report prepared for the Iterative Best Evidence Synthesis Programme, Pasifika Schooling Improvement and St Joseph's School). Wellington: Ministry of Education.

Tuck, B., Horgan., L., Franich, C., & Wards, M. (2007). *Reading together at St Joseph's primary school: School leadership in a school–home partnership.* Unpublished manuscript.

Tuuta, M., Bradnam, L., Hynds, A., Higgins, J., & Broughton, R. (2004). *Evaluation of the Te Kauhua Māori mainstream pilot project.* Wellington: Ministry of Education.

Van de Grift, W., & Houtveen, A. A. M. (1999). Educational leadership and pupil achievement in primary education. *School Effectiveness and School Improvement, 10*(4), pp. 373–389.

Van Voorhis, F. L. (2001). Interactive science homework: An experiment in home and school connections. *NASSP Bulletin, 85*, pp. 20–32.

Van Voorhis, F. L. (2003). Interactive homework in middle school: Effects on family involvement and students' science achievement. *Journal of Educational Research, 96*, pp. 323–339.

Van Voorhis, F. L. (2007, April). *Can math be more meaningful? Longitudinal effects of family involvement on student homework.* Paper presented at the annual meeting of the American Educational Research Association, Chicago.

Villas-Boas, A. (1998). The effects of parental involvement on student achievement in Portugal and Luxembourg. *Childhood Education, 74*, pp. 367–371.

Walberg, H. (2004). In G. Cawelti (Ed.) *Handbook of research on improving student achievement (3rd ed.).* Arlington, VA: Education Research Service.

Walker, R. (2006). Māori conceptions of leadership and self deteremination. In R. Miller & M. Mintrom (Eds.), *Political Leadership in New Zealand.* Auckland: Auckland University Press.

Wang, H., & Harkess, C. (2007). *Senior secondary students' achievement at Māori-medium schools: 2004–2006 fact sheets*. www.educationcounts.govt.nz/publications/maori_education/14593

Weick, K. (1995). *Sense-making in organizations*. Thousand Oaks, CA: Russell Sage Foundation.

Wellisch, J. B., MacQueen, A. H., Carriere, R. A., & Duck, G. A. (1978). School management and organization in successful schools (ESAA In-Depth Study Schools). *Sociology of Education, 51*(3), pp. 211–226.

Williams, N. (2002). *The conversation lives: Investigating practices and approaches in the teaching and assessment of te reo Māori*. Unpublished master's thesis, University of Auckland.

Wilms, D. (2007). *Variance within and among classrooms and schools: The case of New Zealand* (Report prepared to inform the Educational Leadership BES). University of New Brunswick, Canada: Canadian Research Institute for Social Policy (CRISP).

Witziers, B., Bosker, R. J., & Krüger, M. L. (2003). Educational leadership and student achievement: The elusive search for an association. *Educational Administration Quarterly, 39*(3), pp. 398–425.

Wright, N. (2002). *Stories from the inside: A narrative analysis investigating the professional lives of three New Zealand secondary heads of English departments*. Unpublished doctoral thesis, University of Waikato, Hamilton.

Wylie, C. (2007). *School governance in New Zealand: How is it working?* Wellington: New Zealand Council for Educational Research.

Wylie, C., & Arago-Kemp, V. (2004). *Whaia te iti Kahurangi: NZCER evaluation (Final report)*. Wellington: Te Rūnanga o Ngāti Porou & the Ministry of Education.

Wylie, C., & Smith, L. (1995). *Junior School Study. Learning to learn: Children's progress through the first 3 years of school*. Wellington: New Zealand Council for Educational Research.

Yukl, G. (1994). *Leadership in Organizations (3rd ed.)*. Englewood Cliffs, NJ: Prentice-Hall.

Glossary of Māori terms

Ako	Teaching and learning, understood as a single, reciprocal process
Hapū	Sub-tribe
Hui	Meeting, gathering, usually with a specific kaupapa
Iwi	People, nation, tribe
Kaiako	Teacher, instructor
Kanohi ki te kanohi	Face to face
Kaumātua	Elder, old man or woman, adult
Kaupapa	Purpose, agenda
Koro	Male elder, old man, grandfather
Kuia	Female elder, old woman, grandmother
Kura	School
Kura kaupapa Māori	Māori-medium school with an identifiable philosophical base (e.g., Te Aho Matua)
Kura whānau	The support network of families and extended families associated with a school
Ngāti	Prefix denoting tribe
Pākehā	New Zealand-born non-Māori, especially those of European descent
Pāngarau	Mathematics
Pānui	Reading
Pōwhiri	Formal welcome or opening ceremony
Taonga	Prized possession, treasure, inheritance
Te Aho Matua	Literally, the central thread; the philosophical statement that guides the operations of many kura
Te Kotahitanga	A professional development intervention for non-Māori teachers of Māori in English-medium schools. For a description of this intervention, see Case 7 (Establishing a culturally responsive pedagogy of relations) in Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007), *Teacher Professional Learning and Development Best Evidence Synthesis*. See also the Te Kotahitanga website: http://edlinked.soe.waikato.ac.nz/departments/index.php?dept_id=20
Te reo Māori	The Māori language
Te reo Māori me ōna tikanga	Māori language and customs
Tikanga	The usual and accepted procedure or way of doing things; protocol
Tuhituhi	Writing
Tumuaki	Principal, head teacher, leader
Whakapapa	Ancestry, genealogy
Whānau	Family, to be understood in a much more encompassing sense than the nuclear family; network of mutual supports and obligations
Whanaungatanga	Sense of kinship, family, belonging

Mo ngā tamariki, kia rua ngā reo. Ko te reo o ngā mātua tīpuna tuatahi, ko te reo o tauiwi tuarua. Kia ōrite te pakari o ia reo, kia tu tangata ai ngā tamariki i roto i te ao Māori, i roto hoki i te ao o tauiwi.

I runga i tēnei whakaaro, kia tere pakari ai te reo o ngā tamariki, me whakahaere ngā mahi katoa o te kura i roto i te reo Māori. Tae atu ki te hunga kuhu mai ki roto i te kura, me kōrero Māori katoa, i ngā wā katoa.

Kura kaupapa Māori, therefore:

- respect all languages;
- expect full competency in Māori and English for the children of the kura;
- affirm that total immersion most rapidly develops language competence and assert that the language of the kura be, for the most part, exclusively Māori.

Te Aho Matua o ngā Kura Kaupapa Māori.
English interpretation by Dr Kāterina Te Heikōkō Mataira