PART I

The Need for Practitioner Research
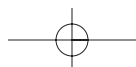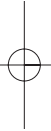
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Educators as Researchers

Michelle[1] made it. She beat the odds.

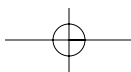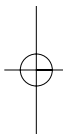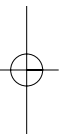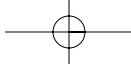Two years ago, Michelle was a typical child in a poor urban community of primarily ethnic minorities. She was about two years behind the average New Zealand student in reading, and while she made a year's worth of progress every year, she could not catch up to the other students in her age group. Last year, Michelle made 18 months' progress in reading. This year she made sufficient progress to achieve above the national expectations for children of her age.

Michelle was not the only one. In 2002, the average student in Michelle's school was about two years behind the national average for students of a similar age. Two years later, the average student in Michelle's school was less than a year behind the average student. In addition, increasing numbers of schools in her community were helping their students to make similar gains in reading achievement (McNaughton, Lai, MacDonald, & Farry, 2004).

So, how have these improvements been achieved? A key factor has been the active involvement of teachers and school leaders in ongoing school research—that is, practitioners as researchers inquiring into their practices with the aim of making sustainable improvements in teaching and learning in their schools.

And that is the purpose of this book—to help you, as teachers and school leaders, to improve the practices for which you are responsible by

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1. Not her real name.

conducting research that is of immediate relevance to your problems and questions, and is sufficiently rigorous to yield trustworthy information.

There are three important elements to this purpose. First, the goal is to help teachers *conduct* research rather than just consume the research of others. Teachers usually treat research as something that is done by outsiders who come into their workplace with an idea of what to study and then collect data, analyze it, and write a report. The school then decides whether or not to use the research. In this traditional model, those who produce research and those who use the research are two different groups of people, doing very different jobs.

If you think about researchers and practitioners as different groups, you reinforce the idea that teachers react to the research of others rather than generate it themselves. If you think about "researcher" and "practitioner" as different *roles*, however, then you can see how these roles overlap, and how teachers can be both.

The first goal of this book, then, is to show you how to develop your research skills so you can add the role of researcher to your repertoire. While much can be learned from the research of others, we argue that there are also considerable advantages in learning how to become producers of research rather than just consumers. Becoming a producer of research can mean working alone, such as when a teacher decides to systematically observe how a child plays with other children. It can also mean working with groups of other teachers or partnering with external researchers and professional developers when there is a need for additional resources or specialist expertise. Whether teachers work alone or with others, adding the role of researcher to their repertoires will help them become better teachers.

The second goal is to help you do research that is *relevant* to your problems and questions. Teachers are often skeptical of the relevance of others' research to their own settings because of the highly contextual nature of practice. They wonder whether a particular research study will be useful in their classrooms, where the students may be quite different from those involved in the original study. They want to know whether the research takes into account the complexities of what *they* are up against in *their* particular settings. Many teachers believe that published research makes a limited contribution to the understanding and improvement of educational practice because it bypasses rather than engages with these complexities. This book presents an approach to doing research that takes seriously the complexity and particularity of practice.

Our third goal is to help you do research that not only speaks to practice but is also sufficiently *rigorous* to provide a trustworthy basis for making decisions about how and what to teach. This is an ethical and professional matter, because the decisions of teachers and administrators affect the lives of children. These decisions need to be based on quality information rather than unchecked impressions.

In this book, then, we present a methodological framework for conducting research that is relevant to your work, is rigorous, and is

respectful of those whose practice is being studied. We show how this framework can be applied to the various phases involved in carrying out research that has the power to improve practice.

TEACHERS AS RESEARCHERS

While it would be unrealistic to expect teachers to pursue substantial research in the course of their full-time work, we believe there are good reasons why a research role should become a more important part of teachers' professional lives. Perhaps the most compelling reason lies in the nature of good teaching. Good teaching is reflective, based on high-quality information, and constantly improving. It is these very qualities that provide the significant common ground between the roles of teacher and researcher. The following two scenarios illustrate what we mean by this common ground.

Story A: Low Reading Scores

Lisa, an assistant principal of an elementary school, is concerned about the low reading scores of the children in the first-grade classes. Her teachers have told her for years that when the children come to school they are not ready to begin learning because they lack the necessary prereading and social skills.

How do you think Lisa should address this issue?

Story B: A Request for Funds

A staff member asks for money to purchase an expensive resource kit for his math program. As usual, funds are tight, but the staff member insists on the importance of the resource.

How do you think the department head should decide whether to approve the expenditure?

It would be easy for Lisa, the assistant principal in Story A, to accept the views of her staff and continue to offer a program that teaches prereading skills for the first six weeks of the year. After all, her teachers have always believed strongly in the idea of "readiness to learn." But how do the teachers know that the students are not ready to learn to read? Is it good enough to delay teaching reading on the basis of the unexamined beliefs of these first-grade teachers?

Similarly, it would be easy for the department head in Story B to accept the view of her staff member and purchase the math resource. After all, she has a good relationship with the staff member and wants to support his enthusiasm. But is staff enthusiasm an adequate indication of the value of the resource? What is the staff member's enthusiasm based on? Is it good

enough to base decisions that have important consequences for children on unexamined convictions?

Good teaching and good decisions are based on high-quality information, not on taken-for-granted assumptions about the causes of children's reading failure or the worth of new curriculum resources. The quality of information improves when everyone is open to the possibility that what they had previously taken for granted may not stand up to scrutiny. Teachers who are skilled in processes of inquiry can detect weaknesses in their own thinking about practice and help others to do the same.

Table 1.1 summarizes how a skilled inquirer would think about Story A. In this story, which is based on a real example, it was hard for teachers to detect the assumptions they were making, because their experience of the children and their families seemed to confirm their view that the children were not "ready to learn" (Symes, Jeffries, Timperley, & Lai, 2001; Timperley & Robinson, 2001). One teacher saw it differently, however. She believed that the children's skills on school entry were higher than her colleagues recognized—a view that was shown later to be correct when the teachers decided to assess the children formally at school entry. Table 1.1 summarizes the questions the teachers asked in order to test the accuracy of their beliefs about their new entrant children.

Table 1.1   Testing the Claims About Reading Failure

Teachers' Claims	*Possible Inquiry Into the Claims*
The first-grade students have low reading scores.	What evidence is this conclusion based on? How good is that evidence?
The cause of the low reading scores is lack of prereading and social skills on school entry.	What evidence is there for this claim? Has the school assessed these prereading and social skills?
	What other explanations have been considered?

The same process of inquiry applies to Story B. Table 1.2 summarizes the type of questions that the department head should ask before approving the request for funds for the math resource.

Table 1.2   Testing the Claims About the Math Resource

Teacher's Claims	*Possible Inquiry Into the Claims*
The math resource is important.	What does he mean by "important"?
	What evidence is available to judge the importance of the resource?
	What criteria should the school use to judge the resource's importance?

Even though the math teacher may be genuinely convinced about the usefulness of the new resource, strength of conviction is no substitute for inquiry and evidence, especially when it comes to making decisions about how to foster student learning.

In summary, good practice in situations like those described in Stories A and B involves

- Detecting the assumptions that are being made
- Recognizing that they should be checked rather than taken for granted
- Knowing what questions to ask to check the assumptions
- Knowing what additional information may be required
- Engaging others in the process of detecting and checking assumptions

These two stories make clear how good practice requires values and skills associated with inquiry. The values include openness to evidence and argument, which means being willing to uncover and check one's own and others' taken-for-granted assumptions. Another important value is a deep concern for accuracy, so that what one believes is, as far as possible, based on the best available information. A certain humility is also required, so that there is space for differing views—views that are treated as sources of learning and improvement rather than as personal challenges. These values and skills are also widely accepted as essential qualities of a good researcher. They form the common ground between research and good teaching that leads us to argue that learning to do certain sorts of research is not an extravagant extra for busy teachers, but an essential part of their professional lives.

WHY MAKE THE EFFORT TO DO RESEARCH?

In case you do not find our argument for doing research compelling enough, we continue our discussion of the case of Michelle, which we introduced at the beginning of this chapter. Both of us were involved in the case—Mei Lai primarily as a professional developer and Viviane Robinson as a university-based external researcher. Michelle's story shows how she not only caught up to the national average in reading achievement for her age group but exceeded it—one story that is becoming typical of many in a community of schools with historically underachieving students.

The achievement gains made by Michelle and her classmates were hard won. Karen Mose, the director of a combined elementary and middle school in the community (Southern Cross Campus), reflects on what the schools were like 20 years ago:

> When I first arrived at my new school, there was an obscenity written in chalk on the floor. The windows of the staffroom had bars on them to prevent vandalism and uninvited entries into the staffroom. There was a level of violence in the playground that needed to be

managed. The students didn't have the skills to sort out problems among themselves any other way and these issues flowed over into the classroom. Managing the behavior got in the way of teaching. We couldn't even test the students to find out where they were because the teachers had trouble getting them to sit down in the classroom and not call out the answers during tests. The teachers worked extremely hard, but no one thought about student achievement because their energies were spent getting through the day. There was an acceptance that this was the way it was and you got on with what you could teach within it. The community was taking the students away—the rolls were falling and the possibility that the school could close became clear. The relationship between schools in our community was poor—there was fierce competition.

The situation called for an intervention, a new way of working together. At this point, the Ministry of Education started a partnership with our school and other schools in similar situations to address the issues. They did not come in "top down" because they too did not know what to do to improve education in the area. The boss I worked for started the process of collecting student achievement data to inform a discussion with the staff and the ministry about how to improve education.

The situation that school leaders such as Karen faced was compounded by the fact that New Zealand schools do not have nationwide compulsory testing at elementary and middle school level. This is because, in New Zealand, there is a strong emphasis on supporting teachers to understand and use their own assessment information. Thus, the information needed even to understand the magnitude of the student achievement problem was missing.

The Ministry of Education appointed Brian Annan to improve education in Karen's school and many others in the community. Brian listened to people talking about how busy they were in their schools. However, when representatives of all these groups were asked what needed to happen to raise achievement, they did not know, because many had not thought about improvement in terms of raising achievement. Brian concluded, "We needed to inquire into the busy-work so that we could replace ineffective practices with ones that would impact positively on achievement."

Karen and Brian, like many leaders in the community, realized that improvements in student outcomes could not be achieved by doing what schools and the Ministry of Education had always done. All parties interested in improving student achievement needed to interrupt their routines, reflect on their current practices, and seek out more effective ones. However, at that stage in New Zealand, teachers were generally not trained in inquiry skills, which meant that external support was needed to help them inquire into their own practices.

The schools in Karen's community decided to work together to develop inquiry skills to raise student achievement, and to call on external

expertise to support them. Karen, who was elected as the chairperson for these schools, put it this way:

> The original goal was to raise achievement, and unless we were able to inquire into the causes underlying the lack of achievement, we were just going to perpetuate what we'd been doing. We could say the words, but we didn't know what the problem was. We needed all the knowledge we could get to help us identify what the actual issue was. We needed someone who would challenge what we kept saying was the problem and what we were doing about the problem. We couldn't have done it on our own.
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> In addition, we had lots of research on our community but we didn't read it. It belonged in another world, the researchers' world. The size of the research put me off for a start, how was I to read this with all the things I had to do? I didn't know how to pick out the key messages or know how to check if the methodologies were correct. It was like we were on one train track and the researchers were on another and there was no crossing over. What was crucial was how to tap into that body of knowledge to use at the operational level in the school. We needed the research interpreted. . . .
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> So we needed a teacher, an analyst, a problem solver, a research literate individual. . . . We agreed that we needed someone to challenge our assumptions, develop our skills in using achievement information, expand our thinking and enable us to become evidence-based decision makers. (Mose & Annan, 2003, p. 5)

The schools hired Mei Lai, the second author of this volume, to help them systematically analyze data to uncover teaching and learning needs. Her brief was to challenge schools' ineffective practices and get results (namely, to raise student achievement). Mei describes how she approached the task, using problem-based methodology (PBM):

> We roughly knew that the average student was about two years behind their New Zealand peers (there was no way of measuring this reliably at that stage). The previously completed reports of external evaluators had suggested that the staff in the area did not have the capacity to inquire into their own practices to improve them (Robinson, Phillips, & Timperley, 2002). So, I was faced with developing a program to improve school capacity and student achievement. In thinking about how to solve these problems, one very important tool in my toolkit was PBM. I quickly realized that I could employ the principles of PBM to create a program to build capacity and raise achievement almost simultaneously.
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> To begin with, I recognized that what was critical to the whole process was the relationship between the schools' leadership and myself. After all, my role was to challenge and critique their practices.

Given the sensitive nature of the task, I found that the interpersonal processes included in PBM were useful in maintaining positive relationships while being critical of school practices. Moreover PBM's emphasis on understanding practitioners' viewpoints was important in ensuring that the program was collaborative and took into account key constraints such as the need for sustainable improvements and the need to create an infrastructure to collate and aggregate achievement data.

I started the professional development program by integrating the relevant PBM concepts into a simple framework that schools could use. Groups of teachers had to identify an achievement problem, diagnose the issue underlying the lack of achievement, develop a strategy to solve it, and measure the improvements. All these had to be justified by evidence. I wanted teachers to make explicit links between what they were teaching and how students were learning by evaluating the impact of their practices on student learning and by developing more effective teaching practices.

Halfway through the professional development, Mei measured the improvements in school leaders' capacity to analyze and use student achievement information to change ineffective teaching practices and develop more effective ones. Brian Annan, the school improvement coordinator charged with improving education in the community, was part of a team of educators checking the improvements made by schools. He describes their progress:

> The case studies on how schools were analyzing and using achievement information to improve their practices were a country mile ahead of where they had been. When we started working in the community, only a small handful of schools had the capacity to inquire into their own practices. Now, all the schools participating in the school reforms were routinely linking aims with outcomes and working out how to detect and correct errors, both of which are essential elements of organizational learning. They were in a much better position to improve achievement.

In addition to increases in teacher skill levels, schools had begun to raise student achievement. The early successes suggested that this approach was starting to bear fruit. However, the rates of gain in achievement had to be increased if the schools were to make a significant change in student achievement levels.

In the next phase, schools formed partnerships with external researchers and professional developers who could help them learn from their achievement data and build the curriculum and pedagogical knowledge they needed to accelerate children's progress. In the process, many assumptions about what students needed were challenged and changed. The result was statistically significant improvements in achievement on age-adjusted standardized tests of reading in all year levels and in all

participating schools from the beginning to end of the school year (McNaughton, Lai, MacDonald, & Farry, 2004). (See Chapter 10 for more details.)

Despite this progress, the teachers in the community are not resting on their laurels. All parties acknowledge that their work is far from over. Karen Mose, who has been there from the beginning of the journey, reflects on what has been accomplished:

> The journey has been extremely rewarding but the frustration is that the gains are very fragile and external reasons such as staffing changes can rip it all apart. It still can feel like one step forward and two steps back. But the fact that we are doing this as a group, with the whole community of schools, gives us the strength to push forward, deal with the issues, and take opportunities when they present themselves. The journey is never over though—different students need different approaches so we are constantly growing the culture of inquiry to deal with these. I've stopped looking for the pot of gold because we need to continually challenge where we are at and what we need to do next.

This case illustrates the importance of teachers conducting research so that they can take the lead in improving their own practice. As in this case, their research will often be done in collaboration with other teachers, professional developers, and external researchers. The latter two groups have a special role in providing supervision and additional expertise, and in introducing teachers to relevant published literature. In our view, the value of teacher research is that it

- Improves outcomes for students
- Develops context-specific solutions to problems
- Provides effective professional development
- Helps to sustain improvements in teaching and learning

We discuss each of these in turn next.

Improved Outcomes for Students

The first and most important reason for teachers to conduct their own research is to improve outcomes for students. In many situations, as in the case just outlined, outcomes cannot be improved by continuing to teach in the same way. There are different ways teachers come to realize that something new is needed. Sometimes what is happening in their classrooms and schools falls short of their own standards of good practice. Sometimes it falls short of the standards and expectations of those to whom they are accountable. Whatever the trigger for change, teachers who are skilled inquirers are able to investigate what is going wrong and craft new practices that are more likely to work.

Context-Specific Solutions

The second reason for conducting research is that there are no simple solutions in teaching that are guaranteed to work regardless of the type of student, the teaching program, or the teacher's experience. Even the most well-researched approaches and programs have to be adapted to a particular situation. Teachers need research skills to be able to base these adaptations on quality information about how the program is working in *their* context. Teachers who work with students who are achieving well below expectation need inquiry skills precisely because the learning opportunities provided to their students so far have not met the students' particular needs. Doing more of the same is unlikely to make a difference. Without systematic inquiry and experimentation, supported by colleagues, principals, and appropriate resources, it is very hard for individual teachers to break the school and teaching routines that have contributed to the failure of such students. With systematic inquiry and appropriate support, teachers can make the sort of difference that was achieved by those in the case study.

Effective Professional Development

The third reason for teachers doing research is that it is a very powerful form of professional development. There is a new research-based consensus that professional development that improves teaching and learning is collegial, job-embedded, and evidence-based (Ball & Cohen, 1999). The focus of the professional development is teachers' own practice; the test of its effectiveness is its impact on teaching and learning. This represents a substantial shift from traditional forms of professional development. Rather than discuss how the ideas of experts might apply to a teacher's own classroom, this new form of professional development involves helping teachers to gather evidence about and learn from what is happening in their own contexts. This was the main focus of the professional development in the case outlined earlier. Using research skills, teachers learned how to solve their own educational problems by investigating what worked for their students and learning new ways of meeting their needs.

Sustainable Improvement

A final reason to conduct research is connected to the idea of sustainable improvements in teaching and learning. For schools such as those in our case study, sustainable improvements are critical, as we know that gains in student outcomes made through school improvement initiatives are fragile unless schools learn how to maintain and extend the gains. Recent research on sustainability shows that it requires teachers and principals who can use evidence to investigate and strengthen the links between how teachers teach and what students learn (Cochran-Smith & Lytle, 1999a; McLaughlin & Oberman, 1996). For classroom teachers, this could mean meeting together to discuss students' work and how to improve it through more effective instruction. For principals, this could

mean using aggregated information about student achievement to evaluate teaching programs and resources, and to adjust them in ways that help teachers make the shifts that are needed to improve outcomes for students. This type of inquiry builds the systems, routines, and teacher culture that are essential for sustainable improvement in student learning.

CONDITIONS THAT SUPPORT TEACHER RESEARCH

While the reasons mentioned indicate why it is desirable for teachers to do research, we also need to ask whether it is realistic to expect busy teachers to do so. We think it *is* realistic if teachers have the right sort of support. An important part of that support is high-quality professional development where research skills can be learned and practiced using on-the-job problems.

Another crucial feature of support is people who can provide high-quality feedback on your research. Such people could include colleagues, professional advisors, or university-based teachers and advisors. Such groups are necessary because it is very difficult to improve your own practice by reflecting on it in isolation. The assumptions that guide your teaching practice will tend to shape your analyses and evaluations. Your study of a difficult-to-manage student, for example, will be shaped by the very beliefs and assumptions that make him or her difficult to manage in the first place. Without the feedback of others, it is very difficult to step outside your own point of reference. That is why we encourage you to involve others in your research, by either forming a research group or inviting the feedback of others at key points of self-study. If you are working on your own, there are particular research techniques, such as tape-recording and systematic observation, that help ensure that the information you collect is not unduly influenced by your own frame of reference.

The importance of involving others in your research is emphasized by John Ackroyd, an assistant principal at an Auckland high school who teamed up with other high school teachers who were studying the same graduate course on practitioner research. The focus of John's research was the teacher evaluation policy for which he was responsible. (These are called teacher appraisal policies in New Zealand.) John is disarmingly candid about how his fellow teacher-researchers helped him to question his own assumptions about how the policy was working in his school:

> I was convinced that our appraisal system at school was focused on the quality of teaching and learning. Another person in our research team had the opposite view. So in a way, the glove was thrown down and I said, "Okay, let's find out."

One of the first things the group had to do was decide what they meant by "a focus on teaching and learning." John learned that his definition was much wider than his colleagues', which explained why he thought that

nearly everything that was discussed in an appraisal interview was about teaching and learning. He explains it this way:

> My initial definition of teaching and learning (and that's where my thinking was faulty) was that, for example, if a teacher did their playground duty, that would inevitably impact on their teaching and learning, because in my view, seeing what students were interested in and getting to know them in the playground would have a huge impact on how they were taught. But that view was challenged by the other research team members, who believed that there are teachers who do their duty but don't actually use it to learn about their teaching or their students' learning at all.
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> We discovered in our research that my assumptions were wrong. The teacher appraisal procedures were not focused on teaching and learning. If I hadn't conducted the research, I would still be of the opinion that the teacher appraisal system was focused on teaching and learning—when it clearly wasn't.

Finally, there is no doubt that teacher research flourishes in schools and school districts where there is a culture of inquiry. Part of that culture includes making decisions on the basis of good information, and using regular meetings and professional development time to support systematic investigation into selected school and teacher practices. We say a lot more about a culture of inquiry in Chapter 10.

SUMMING UP

In this chapter, we have discussed and illustrated the benefits of integrating a research role into a teacher's repertoire. We have shown how many of the skills required to do research, such as how to detect and test taken-for-granted assumptions, are also central to good teaching practice. The case study illustrated how teacher research can improve outcomes for students, ensure relevance by developing solutions specific to the context the teachers are working in, be a powerful form of professional development, and provide a strong foundation for improvements in teaching and learning to be sustainable. We also briefly discussed the conditions that support teacher research, including professional development that focuses on developing the skills of inquiry, and the need for colleagues, professional advisors, or university-based teachers who can provide high-quality advice and feedback.

The overriding objective of this book is to help teachers to conduct research that is relevant and rigorous and that improves practice in the interest of better education of students. In the chapters that follow, we present and defend a methodological framework that shows you how to do just that.